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Seeking shelter: Later Stone Age hunters, gatherers and fishers of Olieboomspoort in the western Waterberg, south of the Limpopo

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Seeking shelter: Later Stone Age hunters, gatherers and fishers of Olieboomspoort in the western Waterberg, south of the Limpopo

Maria Magdalena van der Ryst

> Yes, of course, some people tell stories one way, some another. Perhaps it is because people sometimes separate for a while and still go on telling stories. But in all these stories about the old times, people use different words and names for the same things. There are many different ways to talk. Different people just have different minds (Biesele 1993:66-67).

A thesis submitted to the Faculty of Arts, School of Geography, Archaeology and Environmental Studies, University of the Witwatersrand, Johannesburg, in fulfilment of the requirements for the degree of Doctor of Philosophy.

Johannesburg, 2006

Declaration

I declare that this thesis is my own, unaided work. It has been submitted for the Degree of Doctor of Philosophy in the Department of Archaeology 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 2006

Abstract

The Olieboomspoort (OBP) shelter is central to this reconstruction of the Later Stone Age (LSA) history in the lowlands of the Limpopo in the Waterberg. The archaeological excavations were undertaken to answer questions that arose during previous research conducted on the plateau. OBP was clearly an important place in the landscape over time. Preliminary excavations established a sequence of occupations that began with the apparent intermittent use of the shelter by Early Stone Age people who left some of their large cutting tools on what is now bedrock. Subsequently, during the many thousands of years that humans frequented OBP during the Middle Stone Age (MSA), they brought in enormous quantities of lithics. OBP is cited for the remarkably large assemblages of ochre recovered from the MSA contexts (Mason 1962, 1988; Volman 1984; Watts 1998, 2002; Mitchell 2002; Wadley 2005a), but my recent research demonstrates a similar focus on the collection of haematite and ochre during the more recent periods. Such iron oxides feature prominently during ritual activities and in symbolic behaviour of modern hunter-gatherers and it is likely that they also did so in the past.

The Holocene occupational sequence is extensive, but my excavations and analyses focussed on the last 2000 years of complex LSA history. Apart from the remarkably large lithic assemblage and many thousands of ostrich eggshell beads and blanks produced at OBP, favourable preservation conditions resulted in the recovery of a wide range of tool types made from organic materials, as well as a representative assemblage of macroscopic plant taxa. The data are used to demonstrate how the formal spaces were differentially structured over time by multi-band clusters and small hearth groups to meet their particular social and economic requirements. The differential use of space through time, and the spatial distributions of the different classes of material remains and waste, are explored by using a model of unconstrained cluster analysis (UCA) (Whallon 1984). As the OBP deposits are palimpsests of repeated visits, the UCA, which defines broad boundaries within distinct clustering, detailed general trends in behaviour and site use, and highlighted how the use of shelter space changed when only nuclear groups frequented OBP during the more recent period.

Data from the last 2000 years of occupation at OBP chronicle some of the responses of the hunter-gatherers to rapid change in the area as a result of advancing social, economic and political frontiers. The two main pulses of intensification at approximately 2000 BP and again at 1500 BP correspond to the movement of herders and African farmers into the lowlands of

the Waterberg. OBP remained a central venue for the aggregation of multi-band groups for more than a thousand years before and during the initial contact period. During these alliance visits, diverse socio-economic activities resulted in the deposition of a rich lithic and non-lithic assemblage. The lithic assemblage is characteristic of classic Wilton. Cryptocrystalline silicas and quartz crystals were the preferred materials used to produce a comprehensive range of formal microliths, and felsites featured prominently in the production of larger tool types.

Demographic changes following on contact are underscored by marked changes in site use. Over the last few hundred years the incremental decrease in the production of all classes of subsistence goods reflects social disintegration. In as much as there are evidently continuities in the material culture, the markedly lower frequencies of the lithics and a sharp decrease in the production of decorative items such as ostrich eggshell beads make it likely that only nuclear groups continued to frequent the shelter. Changes in site use, intrusive economic elements, and the production of the different rock arts suggest some fundamental transformations in the economic and ideational landscape.

On the Waterberg Plateau similar post-contact changes were evident in the archaeological assemblages. The Waterberg Mountain Bushveld of the plateau cannot support such a large and varied animal biomass as the Limpopo Sweet Bushveld (Estes 1991; Low & Rebelo 1998; Driver *et al.* 2005; Skinner & Chimimba 2005), and the intensive occupation of this region from approximately 800 years ago parallelled the movement of farming communities onto the plateau. The archaeological data as well as historic documents emphasise that hunter-gatherers participated in complex interaction networks. The expansion of indigenous farmer settlements ultimately enforced the displacement of many of the hunter-gatherers, whereas others were incorporated into farmer polities. Contemporary lithic assemblages on the Waterberg Plateau are characteristic of the post-classic Wilton stone tool technology, and felsite and quartz crystals were the preferred raw materials. Whereas the composition of the archaeological assemblages of the lowlands and plateau corresponds broadly, the differential use of raw materials, a broader range of subsistence tools and decorative items, and much higher frequencies of all tool types at OBP demonstrate the central position of this locality within the hunter-gatherer landscape. The environment not only provided sustenance, but OBP became a social space with real meaning linked to the identities of the people who frequented the locality over thousands of years. The regional differentiation found within the Waterberg is parallelled by the sequences in the Soutpansberg (Van Doornum 2005) where similar differential use of a particular environment underscores the diversity and complexity evident in hunter-gatherer lifestyles.

At OBP a representative assemblage of African farmer ceramics and a markedly larger collection of Bambata ceramics also contrast with sites on the plateau where mostly Eiland farmer pottery and a few sherds of Bambata were present. The ceramic sequence contains a particularly fine collection of the enigmatic Bambata, the stylistic origins of which are addressed in the discussion. The identities of the users and makers of the distinctive densely decorated and thin-walled early ceramics collectively known as Bambata have not yet been resolved. Whereas the paintings certainly indicate the presence of herders on the landscape, it is not clear whether they or the African farmers introduced the Bambata to the hunter-gatherers who were indisputably using most of the ceramics, as suggested by their continued presence and production of lithic and non-lithic assemblages at OBP. There is also a full complement of the local Early to Late African farmer pottery traditions of Happy Rest, Eiland, Broadhurst, and Icon/Moloko. The San, herder and indigenous farmer paintings, which are representative of the regional sequences, illustrate the continuing central role of OBP. Rock art is widely recognized to reflect religious beliefs and social concerns. The San rock art also served as a medium through which power relations were negotiated between first peoples and newcomers. The region is a renowned repository of rock art. The different arts and their contents complement the findings based on the excavations and the vast body of southern African ethnography. The data are applied to explore how OBP served as an arena where people with different world views and customs performed their ritual and social practices.

Historical documents on the Waterberg confirm the archaeological data that suggest a gradual disintegration of hunter-gatherer organisation, and their ultimate displacement to the fringes of African farmer and colonist polities. Small dispersed groups of hunter-gatherers continued to wander through the lowlands of the Limpopo or withdrew to areas where they felt safe from oppression. Some moved across the border to Botswana and into the Kalahari. The remainder were gradually incorporated into farmer societies through intermarriage or as subordinates, living either at farmer villages or in their own small settlements. Today very few traces of the Waterberg hunters, gatherers and fishers remain apart from some corrupted names of places where they once lived.

Acknowledgements

> I found a magnificent hoard of their [LSA] belongings at Olieboompoort Cave, a delightful shelter in a poort that gives an easy route between the hilly Waterberg and the Kalahari to the far west. There are some paintings here, perhaps done by themselves, if not by their predecessors ... (Mason 1962:310).

I would like to express my thanks to the following people:

Revil Mason showed the way by his early investigations at Olieboomspoort

I greatly appreciate the support of my supervisor and friend, Lyn Wadley, who guided me towards this end.

This study was conducted over a number of years, and I thank Siegwalt, Renée and Werner Küsel who were primarily responsible for the logistics as well as the management of the excavations. They, moreover, made camping at Olieboomspoort such fun. Without their support and great contribution the project would have been impossible.

I acknowledge the contributions of various friends who were involved with the excavations. The visits of especially Professor J.F. Eloff and Etta Judson were much appreciated.

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My colleagues at Unisa, and especially Jan Boeyens for his support and contribution at the site, his constructive comments, and also for his encyclopaedic knowledge of written sources. Jan Aukema introduced me to the Waterberg. Francois Coetzee assisted with the documentation during the two Unisa field schools held at this locality. Many Unisa students contributed to the excavation process at OBP, including the preliminary sorting of the large assemblage, and here I particularly wish to thank Jan van Niekerk and Lelanie Prinsloo. Elize Kruger assisted with the final layout of the manuscript.

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Ceramic analysis

Wim Biemond analysed the ceramic assemblage. He also constructed the stylistic design structures for the ceramics, which are based on Tom Hufmann's (2000, 2002) research, and illustrated the ceramics.

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Francois Coetzee and Sidney Miller were involved in putting up a permanent grid at OBP. Sidney also assisted in the construction of a semi-permanent structure designed to protect the excavated area. Francois, Jan Boeyens, Wim Biemond and Jacques Hattingh were instrumental in building the extended roof structure, and also in the extensive site rehabilitations that were undertaken early in January 2006.

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Quaternary Dating Unit of the CSIR

Various landowners allowed access to the sites.

The final interpretations are my own responsibility, and I hope that the findings provide a better understanding of the hunters, gatherers and fishers of the Waterberg. Their places and their rock art will always remind us of their particular role in the history of the land.

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Map 2 Location of Olieboomspoort within the local context: 1:50 000 2327DC Afguns 1985

Maps

Map 3 Extract from South Africa 1:500 000 sheet Pietersburg SE25/26:**1951**, showing the location of Olieboomspoort

THE RESEARCH PROJECT: AIMS, SCOPE, MODELS AND THEORY

> They occasionally take up their abode in caves and rock shelters, but, as one of them explained to me, they are not particularly fond of such places, as they invite the attacks of wild animals, and escape is much less easy from them in case of attack either by carnivora or men. They have learnt by experience that such places, while easily defensible, lend themselves equally easily to attack, and so, except in cases of extreme pressure, avoid them. Huts in the open, being of a flimsy nature, afford better opportunities of escape in case of attack (Dornan 1917:47)

1.1 INTRODUCTION

The present study forms part of a research project embarked upon during the 1990s that aimed to investigate the Stone Age occupation of the Waterberg in the Limpopo Province because limited archaeological work has been conducted on the hunter-gatherer history of this region. The Waterberg is one of a few prominent remnant massifs of the upwarped areas inland of the present scarp (Partridge 1997:11). The initial programme focussed mainly on the Waterberg Plateau, and was subsequently expanded to include the lower-lying bushveld. The site of Olieboomspoort (hereafter OBP) in the drainage basin of the Mokolo River was selected for more extensive research to broaden the existing data for this region. OBP is one of only a few large shelters with a long cultural sequence in the northern parts of the South African interior. The settlement chronology includes the more recent and probably brief visits by different ethic groups, a lengthy period of Later Stone Age (LSA) utilization (which is the focus of this study), Middle Stone Age (MSA) occupancy over many thousands of years, and an ephemeral Early Stone Age (ESA) presence.

The formation of the archaeological record over such a prolonged period produced a considerable quantity of archaeological remains. The numbers and categories of lithics are extensive, there is a wide range of artefacts other than stone tools, and the site is known for the huge amounts of earth pigments recovered during preliminary investigations in the 1950s (Mason 1962; Watts 1998, 2002). Organic preservation is particularly good. The remains of plant and animal foods, a diverse range of implements used in subsistence tasks, as well as in non-subsistence activities, are often in primary contexts. Virtually all hunter-gatherers took advantage of seasonally available resources. Archaeological investigations attested to extensive seasonal gathering of shellfish (Parkington *et al.* 1992; Jerardino 1998; Orton & Compton 2006), freshwater fishing (Hall 1980; Denbow 1986), and the harvesting of fish during spawning runs (Mitchell *et al.* 2006). At OBP sustained use of nearby riverine resources is suggested by fish remains, which are present throughout the sequence. It is important to note

that where I refer to in the text to hunters and gatherers at OBP, it is implicit that they were also engaged in fishing. At OBP the archaeological record contains data that permit a reconstruction of the way of life of hunter-gatherers and their utilization of natural and social resources acquired through established seasonal rounds within a wider landscape where they lived and moved. The cultural materials recovered through excavations have the potential to inform on the identities and world views of the various rock art-producing groups (Ouzman 1998b:546). The rock art sequence, which signals authorship of hunter-gatherers, herders (or Khoekhoen), and indigenous farmer groups, a pottery assemblage that contains Bambata and various facies of farmer ceramics, and other imported artefacts point to complex interrelationships. Taken together, these elements suggest a significant role for this locality through time. Social transformations that followed on the expansion of farmer communities included a recognition of the ritualized landscapes of autochthonous groups and some transference of meanings and beliefs (Green & Perlman 1985:3-15; Moore 1985:93-112; Kopytoff 1987:3-84; Loubser & Dowson 1987:53-4; Walker 1997:95-104; Van der Ryst *et al.* 2004:1-11; Van Doornum 2005:18-20). Schoeman (2006:254-7) demonstrated in the Soutpansberg how the focus of indigenous farming communities on places for rain-control was informed by meanings hunter-gatherers had configured on the landscape. Research on the Waterberg Plateau (Van der Ryst 1998a, 2003; Laue 2000) and in the Limpopo Lowlands (Peters 2000) similarly linked rain-control processes by indigenous farming communities to localities where rock art contributed to the power of places.

OBP is therefore a key site for establishing the cultural sequence of the Stone Age in the Limpopo Province and can provide terms of reference for other, yet unexplored, hunter-gatherer sites in the region. In contrast with LSA dates for the adjacent Waterberg Plateau, in particular the site of Goergap where the data indicated intensive utilization at approximately AD 1200 only (Van der Ryst 1998a), the dates at OBP suggest that the shelter was intensively occupied by LSA hunters and gatherers for thousands of years. The migrations of new communities into the region brought about social and economic changes that apparently manifested in demographic changes as well. A further objective of the project was therefore to explore the reasons why the Mokolo Basin was settled by LSA hunter-gatherers over a much longer period than the Waterberg Plateau, which seems to have remained relatively uninhabited until the second millennium AD when early farming communities started to move into the region. In order to resolve this issue the cultural chronology of hunter-gatherer settlement at OBP was firmly

established through a suite of absolute dates from charcoal, ostrich eggshell, and other organic materials, and relative dates from other temporal markers.

To explain the presumably more sustained occupation of the lower-lying Mokolo Basin, which contrasts with a pattern of intermittent (and relatively later) occupation of the Waterberg Plateau, requires that I reconstruct elements of the lifestyles of hunter-gatherers in the Limpopo Basin. Economic (dietary and seasonal), as well as environmental data, technologies used by the LSA occupants of OBP and documentation of the local rock art, are avenues to be explored. In short, it needs to be established why the pre-contact Limpopo Basin (also referred to as the lowlands) constituted prime choice land in comparison to the plateau. In this regard, the impact of indigenous farming communities on hunter-gatherer settlement and mobility is of particular importance. A particular aim of the working hypothesis was to investigate whether the influx of Early Iron Age (EIA) farming communities brought about demographic pressures that forced hunter-gatherers to intensively live on the Waterberg Plateau, or whether the contact situation initially led to intensified occupation and possibly an increase of hunter-gatherer populations in the Basin, with evidence from OBP serving as proxy data. The results obtained through subsequent research at OBP demonstrate a more complex scenario for the past two millennia. The findings challenge, in particular, some of the conjectures on anticipated patterns of settlement and behaviour that developed from interactive contexts.

Data from recently excavated sequences and the rock art chronologies from shelters, open sites and farmer settlements in the Makgabeng, Soutpansberg and Limpopo Flats reflect the complexity of interaction and past social relations between hunter-gatherers and farmers, particularly between AD 900 and AD 1270 (Mason 1958; Boshier 1972; Hall & Smith 2000; Laue 2000; Peters 2000; Ouzman & Smith 2004; Smith & Ouzman 2004; Van Schalkwyk & Smith 2004; Calabrese 2005; Eastwood & Smith 2005; Sadr 2005; Van Doornum 2005; Schoeman 2006). A similar pattern during the same period was also observed on the Waterberg Plateau (Van der Ryst 1998a, 1998b, 2003). Since most of the current research in the Soutpansberg and Limpopo Flats is focussed on the rock art (Eastwood 2003; Moodley 2004; Namono 2004; Ouzman & Smith 2004; Smith & Ouzman 2004; Van Schalkwyk & Smith 2004; Eastwood & Smith 2005; Namono & Eastwood 2005), or the sequence of indigenous farmer settlement in those areas (Hanisch 1979; Huffman & Hanisch 1987; Huffman 1996b; Calabrese 2005; Schoeman 2006), the data can only be selectively applied to OBP.

The OBP shelter lies within one of the proposed routes, as suggested by archaeological, as well as linguistic research, of the movement of herders southwards from Botswana into the South African interior (Ehret 1982, 1988; Elphick 1985; Smith 1993a; Sealy & Yates 1994; Vossen 1998). The appearance of domestic animals (sheep, goats and cattle) in the rock art of this area is thus particularly significant (Van der Ryst 1998a). The proposed research may add to the available data on the migration versus diffusion debate on the introduction of livestock and pottery and, in particular, on the cultural affinities of the distinctive thin-walled Bambata ceramics (Bousman 1998; Sadr 1998, 2002, 2003a, 2005). Archaeological evidence relating to herders is notoriously elusive. Data hinting at their presence in an area are often contained in early dates for domestic stock remains, ceramics that can be linked to a pastoralist economy, or herder paintings (Sealy & Yates 1994; Smith & Jacobson 1995; Kinahan 1996; Hall & Smith 2000; Vogelsang *et al.* 2002; Garcea 2003; Smith & Ouzman 2004; Eastwood & Smith 2005; Lenssen-Erz & Vogelsang 2005; Mitchell & Whitelaw 2005; Robbins *et al.* 2005). The last 2000 years of hunter-gatherer history are therefore particularly important for such reconstructions because hunter-gatherers nowhere existed in complete isolation, and contact with herders and indigenous farmers constitutes a major theme of any research into the prehistory of the region. Marked expansion by herders and especially indigenous farming communities into the southern regions brought about greater cultural interchange and transformations (Wilmsen 1989; Hall 1990; Kent 1992, 1996; Solway & Lee 1992; Mitchell 2002, 2004a, 2005; Mitchell & Whitelaw 2005), so that the notion of isolated, timeless and uncontacted cultural worlds is untenable (Whitehead 1995:62).

1.2 RESEARCH AIMS AND SCOPE

In order to unravel the above problems and to compare the LSA occupation of the Limpopo Lowlands and the Waterberg Plateau, in particular during the post-1200 AD period, the following aspects are investigated:

- The environment, vegetation and natural resources of the two regions
- Evidence for seasonality (also length of resource availability) and the ability to support large or small populations
- Technological and/or typological differences in the artefacts of OBP in the Limpopo Lowlands and Goergap on the Waterberg Plateau
- Dissimilarities or analogous patterns in the social and economic systems of the local hunter-gatherers as demonstrated by the data from the two areas
- Transformations in the indigenous farmer/hunter-gatherer exchange patterns or other forms of interaction in the lowlands and on the plateau

1.3 EXPLAINING THE ARCHAEOLOGICAL RECORD: MODELS AND THEORETICAL PREMISES

> What is theory and what is method ... [is] determined by context, and theory in one may be method in another (Shott 1998:301).

This study is principally a site-specific investigation to construct a database for the framework of LSA succession and utilization of the resources of a circumscribed geographic region. The nature of the preserved record requires that economic considerations and subsistence activities should feature prominently. Specialists in archaeozoology, botanical analysis, ceramic classification and microwear studies contributed to the explication of the OBP data. We also have to take into account the universally interdependent nature of the economic and social organization, behaviour, and belief systems of foraging people that has been demonstrated through exhaustive studies of both anthropologists and archaeologists. Lewis-Williams (2002:131) said that 'we note a blurring of a distinction between subsistence and religion. Can one be discussed without reference to the other?'. Themes on food permeate the life of hunter-gatherers and feature in their narratives, rituals and healing practices (Katz 1982:154, 225-6; Biesele 1993:41-3, 96-7; Guenther 1999:107; Lewis-Williams 2000:101-16). Appropriate modelling, approaches and methods are consequently applied to explain and contextualize the archaeological findings at the site from a variety of perspectives. Methodological considerations should take into account the factors and biases that impact on a particular archaeological assemblage, including the natural (available) versus the collected assemblage, the deposited assemblage, post-depositional processes, the excavated assemblage and, finally, the studied assemblage, which usually comprises a selection by the archaeologist (Sandweis 1996:130-1; Reitz & Wing 1999:110-3; Woodward & Goldberg 2001:340; Henry *et al.* 2004:19-20).

Current research into the archaeology of Holocene hunter-gatherers south of the Limpopo River is marked by a focus on ecological issues, social organization, gender relations, ideology, and also interactive contact when different groups started to move into the area (Mitchell 1997:359). Such broad research concerns and also debates within hunter-gatherer studies require a broad-framed multi-causal approach to be applied to the data generated through the archaeological investigations at OBP. It may be more productive to view hunter-gatherers from a variety of perspectives, not only in view of the many commonalities, but notably the enormous amount of cultural and behavioural diversity demonstrated by hunter-gatherer studies (Kent 1996:4; Lee 1998a:xxvi-ii, 2006:157-70). An examination of regional variability in the technologies and strategies applied by hunter-gatherers at OBP in their interaction with the cultural and economic environment will expand the data available on the economies, social constructs and ritual life of hunter-gatherers south of the Limpopo.

Barnard (1992:3) argues that '[c]omparison is both a method and a theoretical concept'. Theory and method are closely related and it is the context and data applied — whether ethnographic, linguistic, archaeological or archival — that drive theoretical considerations and our interpretation of the past (Hodder 1987:1-8; Johnson 1999:2-3; Gleach 2005:12). The large body of ethnographical data for southern African contexts, when used in conjunction with other approaches, is accordingly still an extremely valuable tool to be applied to the archaeological data. Ethnoarchaeology is powerful in constructing flexible and robust models for the interpretation of past behaviours (Jarvenpa & Brumbach 2006:97). Analogies in particular are useful points of departure and give meaning to the distinctive patterning of the archaeological record. Ethnographic analogies provide the interpretive framework for many archaeological occurrences. It is this extensive ethnographic base — and new readings of old ethnographies — that allowed scholars such as Deacon, Lewis-Williams, Wadley, and others to develop models for the LSA that focus on reconstructing former social relations and ideology (Kent 1987:1-60, 1991:33-57; Galanidou 1997:10-1; Mitchell 1997:392, 2005:64-71).

A critical use of the diverse set of ethnographic data to our disposal is therefore required to give ethnography the coherence to be applied at all (Lee 1979:364-9; Kelly 1995:213-4; Guenther 1996a:80; Mitchell 1997:359, 2004b:150-73, 2005:64-71; Mitchell & Whitelaw 2005:209-42; Widlok 2005:17-33). Well-founded critiques on assumptions of a stable and timeless past and the indiscriminate use of ethnography in hunter-gatherer studies have led to a much more

rigorous use of ethnography to structure interpretations (Schrire 1984; Wilmsen 1989; Hall 1990; Solway & Lee 1992). The careful use of ethnography allows indirect generalizations about cultural and social behaviours that can be demonstrated to be functionally equivalent responses or adaptations to similar issues (Silberbauer 1996:57). Accounts of the Waterberg region by travellers, missionaries and hunters throughout the 18th and the 19th centuries constitute a source of implicit ethnography (Whitehead 1995:53-73). These invaluable sources provide data specific to the region that cannot be replicated by current ethnographic research. In an earlier study on the Waterberg prehistory (Van der Ryst 1998a), the discerning use of such sources underpinned the archaeological reconstruction, and ethnographical perspectives will accordingly be selectively applied to this study of OBP.

A general framework permits the use of ecology, economy, ethnography, historical circumstances, reconstruction theory that includes formation processes, methodological theory that involves recovery, analyses and inference, and other approaches that can aid the archaeological investigation (Blankholm 1996:13-4). Inferences are defined as 'any information about a past interactor, interaction, or performance that is supported by evidence and relational knowledge' (Schiffer & Miller 1999:52). Inferences are mostly based on past life histories that extend into the present. The chronology at OBP confirms distinct depositional episodes over many thousands of years. The need to describe and, in addition, to correctly interpret the diverse agents involved in the depositional histories and complex post-depositional transformations of any archaeological record, transpired in the development of the subdiscipline geoarchaeology, a term first used by Renfrew in 1973 (Stein 2001:43-5). Formation theory guides our understanding of how the archaeological record is formed (Shott 1998:299-329). Soils that accumulated on bedrock are altered by the intensity of human occupation and a great many site-specific processes (Grave & Kealhofer 1999:1241; Stein 2001:37-42; Woodward & Goldberg 2001:340). Natural processes and mechanical disturbance such as erosion and leaching (Sandweis 1996:131), and bioturbation (Grave & Kealhofer 1999:1240; Fowler *et al.* 2004:441), transform archaeological deposits. Anthropogenic processes contribute through imports and debris that result from human activities. These can be fine sediments carried with wet carcasses, raw materials and waste products of tool manufacture (microdebitage), and also prolonged human occupation that increases the organic content of the sediments and generates ash deposits from hearths (Woodward & Goldberg 2001:339).

The archaeological materials were analysed and classified according to established methodologies (Deacon1984a, 1984b; Wadley 1987; Blankholm 1996; Mitchell 1997; Andrefsky 1998), with adjustments for technological variations in the sequence. Data from other areas in southern Africa confirm continuity in the production of a conventional range of LSA equipment — albeit in changing frequencies — even with additions to the LSA economy brought about by interactive contact (Deacon 1984a:343). An inventory by Blankholm (1996) for the classification of subsistence equipment into various categories (e.g. equipment used primarily for hunting, fishing or gathering, for the processing or consumption of food, or in the manufacture of the foregoing), will also be applied to the assemblage from OBP to make inferences about prehistoric economies. This model likewise includes a category for equipment used in non-subsistence-related activities and objects prepared with high labour investment that suggest personalised prestige gear. Both ethnographic and archaeological data demonstrate that individual stone tools may be versatile and multi-functional and/or used expediently (Silberbauer 1996; Andrefsky 1998). Residue analyses, which are increasingly applied in southern Africa, confirm the findings from technological studies (Williamson 2000, 2006; Lombard 2003, 2005).

Artefact assemblages are also used to infer site-function (Yellen 1977:75; Andrefsky 1998:189-209). The tool assemblage at a residential camp, for example, should reflect multi-functional, generalised characteristics. Ethnographical studies confirm that very few individual activity areas are strictly segregated and that the multiple tasks performed within an area result in a mix of debris (Yellen 1977:95). At OBP variability is expected in the relative frequencies of tool types and the different categories of formal stone tools, as well as changes in site function over time. Climatic changes after the Last Glacial Maximum (LGM), with rapid warming at the start of the Holocene, possibly influenced access to raw materials that resulted in different behaviours and cultural change over time. The substitution, for example, of the Oakhurst Complex with microlithic assemblages referred to as Wilton in the literature took place rapidly in all regions south of the Limpopo after 8000 BP (Mitchell 1997:359-424, 2002:137-41; Wadley 2000a:18-31, 2000b:90-106). Changes in economic and social relations and disruptions in traditional technology during the historic period are also envisaged.

General ecological models will be drawn upon to construct prehistoric subsistence strategies (e.g. Bates & Lees 1996) at OBP. Variations in subsistence strategies that correspond with the

availability of different basic resources within the major biomes in southern Africa, as well as seasonal emphasis on certain primary — and preferred — food resources, are reproduced in any archaeological assemblage (Reitz *et al.*1996:73-5; Mitchell 1997:374). Models generated by environmental archaeology are used for inferences on subsistence and to determine and interpret how activities affect and transform an environment (Kroll & Price 1991:3; Reitz *et al.* 1996:9-12, 25).

Differences may also convey cultural and social preferences. Subsistence patterns develop over time through the complex interaction of social and environmental considerations, and in response to the constraints and opportunities of the environment (Reitz *et al.* 1996; Ucko & Layton 1999). Once established, they remain conservative and only extreme changes in the social or natural environment, or the introduction of a new economic technology or resource, will result in adaptive changes (Bates & Lees 1996:15; Reitz *et al.* 1996:73). Ethnographic analogies underpin inferences on the use of organic and inorganic materials for tools, ornamentation, housing and shelter, clothing, containers, firewood, medicines, or social and religious symbols (Schultze 1907; Bleek & Lloyd 1911; Schwarz 1928; Dunn 1931; Marshall Thomas 1959; Fourie 1965; Lee 1965, 1979, 1998b; Silberbauer 1965, 1981; Marshall 1976a; Tanaka 1976; Yellen & Lee 1976; Valiente-Noailles 1993; Hitchcock *et al.* 1996; Pietak 1998; Kent 1999; Widlok 1999b; Sugawara 2001). The data from OBP are expected to show whether changing demographics resulted in stress on resources or the broadening of traditional economies.

Faunal remains represent a significant source of data on subsistence. The deposited assemblage recovered from the excavated portion at OBP should demonstrate how the universally selective use of animals for food, as well as for other purposes, was also practised at this particular locality (Reitz & Wing 1999:110-3). Ethnoarchaeological data guide inferences and generate models to be used in the development of methods for the discovery, description, and interpretation of intrasite spatial patterning, for example the discard and distribution of refuse, or the transport of selected parts of a carcass back to a camp, which are based on a number of variables (Odum 1971; Bartram *et al.* 1991). The relative importance of species may be biased as a result of taphonomic loss, butchering techniques, capture technologies and marrow processing (Bleek & Lloyd 1911; Bartram *et al.* 1991:101; Kent 1993:323-85; Blankholm 1996:48; Hitchcock *et al.* 1996:175-84; Mitchell *et al.* 2006:81-94). The use of bone

as a basic raw material also features when economies are reconstructed, and a substantial worked bone artefactual assemblage was recovered from OBP.

Archaeological remains are not only sources of environmental information, but they produce particular data when an ethnoarchaeological approach is applied. These may include the use of activity areas within sites, division of labour, alliance networks or exchange, and also social and religious symbols. Ethnographic data demonstrate that people often do organise their tasks spatially when they occupy a place, yet the data also suggest that discrete, activity-specific areas within sites may be rare in the archaeological record (Yellen 1977; Brooks 1984; O'Connell *et al.* 1991; Rigaud & Simek 1991). Among the Hadza, for example, quite a broad range of activities was carried out in intensely used, clearly identifiable activity areas (O'Connell *et al.* 1991:61-2). Discrete occurrences therefore cannot be taken as evidence for complete segregation of activities, but do indicate that some took place in particular areas more often than in others (O'Connell *et al.* 1991). At OBP the relative frequencies of artefactual remains, as well as the distribution of fireplace features accompanied by clustering of debris, argue for some differential site use. The fireplaces — with some nearby bedding patches — represent the principal preserved structural element of the household group or nuclear activity area that defines private space (Marshall 1976a:84; Yellen 1976, 1977; Wadley 1979, 1987, 1996b, 2000a, 2000b; Bartram *et al.* 1991; O'Connell *et al.* 1991; Parkington & Mills 1991; Galanidou 1997; Widlok 1999a, 1999b; Henry *et al.* 2004; Mitchell *et al.* 2006).

It is important to evaluate the presence or absence of activity clustering, and an assemblage composition approach such as unconstrained clustering analysis (UCA) that through smoothing of the raw data result in density shapes or isolines, can provide data on spatial patterning across a site (Whallon 1984; Gregg *et al*. 1991; Blankholm 1996; Wadley 1996b; 2000a, 2000b; Galanidou 1997). Care should, however, be taken not to oversimplify artefact distributions because different post-depositional processes (cultural, as well as non-cultural) influence site formation (Rigaud & Simek 1991; Stevenson 1991; Stein 1992; Blankholm 1996; Sandweis 1996; Shott 1998; Karkanas *et al*. 2000). Questions should be asked about why and how organized behaviour is reflected within sites and in the distribution of refuse, and whether our knowledge of such relationships can be applied in archaeological contexts, instead of merely looking for activity areas and tool kits (O'Connell *et al.* 1991:73). The use of quantitative techniques better recognized fine-scale patterns within visually clear large-scale patterning

(Rigaud & Simek 1991:217).

Models for discerning spatial patterning of activities, including gendered space, differential activities and marker material culture, are used to explore the contentious debate on gendered interpretations (Gregg *et al*. 1991; Keeley 1991; Kent 1991, 1998a, 1998b; Stevenson 1991; Wadley 1997b, 1998; Tilley 1999). Human concepts are guided by beliefs and symbolic concepts with recurrent patterns in human thought in different cultures, many of which are expressed in such opposites as man/woman; left/right; public/private, etc. (Renfrew & Bahn 2004). In the context of south African hunter-gatherers a formal male-right/female-left symbolism is conventional (Mitchell 2002:166). Binary oppositions that relate to gender also feature in narratives (Biesele 1993:96-8; Guenther 1999:147, 149). In order to distinguish likely gendered activities at OBP, a large sample is necessary and data from similar projects will therefore have to be accessed (e.g. Bartram *et al.* 1991; Kent 1991, 1998b; Wadley 1997a, 1997b).

The long-term occupation of OBP and the rich archaeological record of this locality imply an important role for the site within both the physical and conceptual landscape (Layton & Ucko 1999:1-20; Hyder 2004:85-101). The use of cave sites is different from that of open locations because of the arena that they define for social performance (Parkington & Mills 1991:362). Ideational landscape as a broad term translates to landscapes of the mind and can embrace all kinds of meanings attached to and embodied in landscapes — including those assigned by the archaeologist (Knapp & Ashmore 1999:12-3). Studies of meaning in landscape demonstrated that the construct ‘place’ occupies an active and complex role in relation to human lives (Luechinger 1981:31; Knapp & Ashmore 1999:2). Place is defined as ‘space given meaning’ (Parkington & Mills 1991:355). Landscape as a social construct, and turning a space into place, is fundamental in the construction of a landscape (Nash & Chippendale 2002:6). Discard patterns (Binford 1983:153), as well as the structuring of the bounded space at shelter and cave sites, have been the focus of some ethnoarchaeological (Gorecki 1991:237-62) and archaeological studies (Parkington & Mills 1991:355-70; Yvorra 2003:341).

In the structure of landscape the lowest scale is that of individual households and relationships between households and the surrounding space, whereas community areas or site territories occupy the next level (Beneš & Zvelebil 1999:79). Mobile communities require a highly-

developed landscape sense to mentally map and utilize the range of available resources. Moreover, deposited or discarded materials conceptually link places that are physically distant, and localities that signal social continuity and transformation are invested with meaning (Cooney 1999:50-1). Landscape elements such as caves or sources of water that not only comply with practical considerations, but represent repositories of ideational meaning, are the most effective carriers of social memory (Parkington & Mills 1991:355-62; Crumley 1999:271). A constructed landscape or territory with focal natural and cultural points is embedded with social identity and meaning, mythical or cosmological concepts, as well as emotional and ritual ties, which are integral to their whole life (see also Deacon 1986:135-55, 1988:129-40, 1997:135-41, 2001:237-56; Tilley 1994; Knapp & Ashmore 1999:14-5; Smith 2005:266). This firm connection to the land and a place is evident from the transcribed interviews with the /Xam in the Breekwater prison (Deacon & Dowson 1996:251), and also where //Kabbo in his longing to return home said that 'I shall go to drink at home ...' (Bleek & Lloyd 1911:313).

The attachment to an environment extends to the universal marking of places with rock art. The permanency of rock art at fixed points not only denotes places endowed with potency and spiritual importance, but also emphasizes emotional ties with the landscape (Deacon 1988, 2001; Kinahan 1999; Lewis-Williams & Pearce 2004). Such an earlier use of a specific locale strengthens the continuous process of socializing the landscape (Taçon *et al.* 1997). Whereas the earlier fineline paintings at OBP are worn and practically indiscernible, the better preserved more recent art categories, in which handprints are numerically significant, mark this locality. Their sheer quantities and also the intentional placement, may signify the special meanings attributed to OBP as an arena for social continuity, and also for transformation (Deacon 1986, 1988, 1997; Tilley 1984, 1994; Clottes 1995; Mitchell 1996; Dowson 1998; Jolly 1998; Cooney 1999; Eastwood & Blundell 1999; Smith *et al.* 1999; Hall & Smith 2000).

As landscapes become intensely marked and socialized over time (Parkington & Mills 1991:355; Knapp & Ashmore 1999:16), the annual cycle of activities is linked to places in the landscape. The continuous occupation of OBP until the more recent period and the extensive range of activities signalled by diverse categories of artefacts, may also relate to its prominence as an aggregation locality. Multi-band aggregation, also termed band cluster, alliance or nexus, is universal in forager organization and is accompanied by a range of activities that result in the deposition of significant artefacts and with emphasis on the sharing of resources and ritual

(Marshall Thomas 1959; Valiente-Noailles 1993; Guenther 1996a; Katz *et al.* 1996; Whittle 1996; Lee 1998a, 1998b). Band alliance as 'an implicit structural component of Bushman society generally, because of the universal concentration-dispersal dynamic ...' (Guenther 1996a:80), is important in social organization and the ceremonial life of the band (Wadley 1987:41; Kelly 1995:213-4). Reciprocal exchange also features prominently during phases of intense social activity (Wiessner 1982, 1992; Wadley 1987). Binneman (1995:49) argues that because Holocene sites in the Cape Folded Belt contain most of the indicators for aggregation throughout their sequences, the density of aggregation phase debris seems to mask dispersal phases. A set of criteria established to distinguish between concentration and dispersion (Wadley 1987) will be applied to the OBP assemblage.

Interrelated themes in the role of the archaeological landscape include landscape as memory, as identity, as social order, and as transformation (Knapp & Ashmore 1999:13). At OBP transformations in site use and site significance following contact will presumably show in subsistence, technology, alliance networks, ritual practice and group size. Researchers are nowadays well aware that practically no society lived in complete isolation from neighbouring communities. Networks of interaction and exchange between herders, San and Bantu speakers have been in existence for the last 2000 years (Denbow 1984; Mazel 1986a, 1986b, 1989a, 1989b; Wilmsen 1989, 1994; Guenther 1996a). Interaction may impose some constraints, but also generates novel economic, social, political and ideological possibilities (Moore 1985; Eder 1996; Thorp 2000). Excavations at shelters on the Waterberg Plateau (Van der Ryst 1998a) and in Botswana (Sadr 1999) demonstrated that relative changes in the frequencies of material culture may be applied to distinguish between pre-contact and contact period occupations. Hunter-gatherers in the Kalahari have over a long period shown their resilience in coping with newcomers. They have adapted to withstand, tolerate, or benefit from new influences in trying to retain some control (Silberbauer 1996:60-4). Hunter-gatherers are drawn into post-contact ritualized behaviour with indigenous farming communities, and use this power innovatively to link up and negotiate relationships with the newcomers (Kopytoff 1987:3-84; Widlok 1999b:131-2; Reid & Segobye 2000:65-6; Schoeman 2006:256-7). We can only understand hunter-gatherers if the three criteria that set them apart from herders and farmers are taken into account, namely their subsistence based on hunting and gathering, their distinctive social and economic organization, and characteristic cosmology and world view (Lee 1998a:x; Lee & Daly 1999:3).

Imports have been used to explore the nature of social relationships with indigenous farming communities and also herder groups (Wadley 1996a:214-6; Mitchell 1997:398-402). A hunting society is able to transform itself selectively (Marshall 1961:242; Guenther 1982:124), so that foraging people with immediate-return systems (Burch 1998:210; Woodburn 1998:88-91; Widlok 1999b:13) frequently incorporate alternative subsistence procedures and values from other societies. The distinguishing factor is, however, that 'hunter life is based on an ethic of sharing, herder [and farmer?] life on an ethic of acquisition' (Whittle 1996:35). Heinz (1966:33) says that '[s]haring is the rule'. The rules governing sharing and ownership therefore inhibit permanent change as opposed to periodically including selected economies and practices acquired from neighbouring farmers. A remarkable flexibility, with corresponding adaptation to changes in both the natural environment and social organization, is seen as the hallmark of Bushman societies (Barnard 1992:236, 240; Guenther 1994:25; Whittle 1996:35).

These issues are explored in chapters 4 and 6 when I review the data on subsistence, and in chapter 7 were the origins, ownership and use of Bambata ceramics, of which there is a singularly large sample at OBP, are discussed (Huffman 1994; Smith & Jacobson 1995; Wadley 1996a; Reid *et al.* 1998; Sadr 1998; Hall & Smith 2000). The fact that aspects of a pastoral economy were acquired, implies the development of new social networks, technological innovations and skills and also social differentiation (Garcea 2003:112-3). Hunter-gatherers selectively incorporated new elements into their economy and delayed consumption was not general among foraging people with immediate-return systems and a strong ethic of sharing (Guenther 1996a; Whittle 1996; Lee 1998a, 1998b; Woodburn 1998). Previous work (Van der Ryst 1998a) demonstrated the reworking of socio-economic elements such as domestic animals and commodities that relate to farmer practices into hunter-gatherer/herder narratives on rainmaking.

Interactive experiences between LSA people and indigenous farming communities in the Waterberg included rain control rituals that relate to the importance of the San as ritual specialists in the community, social and economic intensification, the encapsulation and enslavement of hunter-gatherers and their incorporation into other local groups (Van der Ryst 1998a, 2003). Similar integration within a wider social landscape is confirmed by the introduction of ceramics and other imported items into the deposit at OBP. Research at shelters

within the general region confirms co-occurrences of different ceramic assemblages, often widely separated in time (Hall & Smith 2000; Sadr 2005; Van Doornum 2005; Schoeman 2006). Current models on San rock art and research into hunter-gatherers south of the Limpopo also address the identification of exchange and alliance networks (Mitchell 1997; Jolly 1998; Hall & Smith 2000).

Accounts by missionaries and travellers (Baines 1872, 1877; Stow 1872, 1910; Merensky 1875; Holub 1881; Stech 1885; Farini 1886; Schlömann 1896, 1898; Schultze 1907; Hammond Tooke 1908; Selous 1908; Moffat 1910; Dornan 1917, 1925; Marais 1920, 1964; Schwarz 1928; Dunn 1931, 1978; Kirby 1940; Chapman 1971; Elton 1972; Daniell 1976; Cornell 1986), as well as archival documents on the Waterberg contact situations, are available to interpret trends and occurrences discerned in the archaeological record. These sources furthermore inform on how the more recent hunter-gatherers in this area negotiated their relationship with indigenous farming communities and, finally, European hunters and settlers. By using an interpretive approach (Hodder 1992:183-98) this study aims to add to the available knowledge on the prehistory of the Limpopo by giving cultural values and meanings to the archaeological environment.

1.4 OUTLINE OF THE DISCUSSION

From the preceding discussion it should be clear that this study centres on the last 2000 years of hunter-gatherer history at OBP. Extensive spatial investigation and excavations are required before a fine-grained reconstruction of the prehistory of any region can be attempted (Smith 2005:222). Notwithstanding, this exploration of a particularly important phase in the LSA prehistory of the Waterberg will add to the current data base, and is structured as follows:

I begin with a discussion of the research area and the extent of current knowledge on the region in chapter 2. This section contains data on the environmental setting of the site and describes the geography and vegetation with brief references to the influence of past climates on the patterns and processes that determined the plant cover and composition of the region (Cowling *et al.* 1997:xxxii). Lithic resources were focal in the economy of hunter-gatherers and a broad outline of geological formations of the region is presented. From the introductory quote (Dornan 1917:47) it seems that caves and shelters were not preferred locales during the historic period, whereas the data from OBP do argue for a focal role in the landscape for many thousands of

years until demographic changes destroyed the pattern. A review of literature pertinent to the study area and also a summary of previous research projects, which have a bearing on the Waterberg, provide the context for the subsequent chapters on the archaeology of OBP. Lastly, historical accounts and ethnographical data on hunter-gatherers of the Waterberg afford a framework for the more recent historical phase.

In chapter 3 the methodology used in the research is set out. A description of the excavations, stratigraphy and specific observed features forms the basis of this chapter. These aspects are subsequently correlated with the suite of radiocarbon dates obtained for the stratigraphic sequence. Natural and cultural processes affect archaeological materials from the time of deposition to the moment of excavation (Sandweis 1996:130-1). All the processes that transform the archaeological record are collectively known as diagenesis (Karkanas *et al*. 2000:916). Site formation processes in general and those pertinent to the site are accordingly discussed in some detail, and also the specific agents responsible for observed post-depositional disturbance at OBP. The structuring of space and the distribution of artefacts and waste in cave and shelter localities reflect highly standardised site organization patterns (Parkington & Mills 1991:359, 60:fig. 3, Galanidou 1997:24, fig. 4.1; Henry *et al.* 2004:fig. 8). In this section I use the UCA approach to define spatial patterning across the site. The UCA diagrams besides demonstrate continuities and change in the structuring of the formal spaces by multi-band and nuclear family groups through time at OBP.

The excavations yielded a large and varied assemblage of stone tools. In chapter 4 the lithics are detailed with reference to the various classes of tool types in the sequence of the archaeological assemblage and raw material usage. Ethnographic and other data are applied to classify the lithics according to specific attributes and to make inferences. Frequency changes in some of the artefact categories will be used to demonstrate change and/or continuity over time. Profound changes in the assemblage may parallel transformations in economic and social systems, and therefore behaviour patterns.

Chapter 5 deals with the particular role of earth pigments in the social, economic and ideological life of hunter-gatherers. The extent of the colouring materials recovered by Mason (1962) during his initial investigation of the shelter was so remarkable that this aspect of the archaeology of OBP featured in subsequent data sets (Watts 1998, 2002). In the discussion

I use ethnographic and archaeological data to demonstrate the importance of ochre in the ritual and secular life of hunter-gatherers in general, and specifically at OBP.

I discuss in chapter 6 the non-lithic remains. The archaeological assemblage contains faunal and archaeobotanical food waste, subsistence tools made from organic materials, as well as low numbers of imports, including shell, metal artefacts, glass beads and slag. The particularly rich component of composite bone artefacts, the extensive use of ostrich eggshell (OES) for beads and decorated containers, and the wooden objects from OBP are described in this section.

The pottery sample from OBP forms the focus of chapter 7. The different pottery facies are described and discussed with particular emphasis on Bambata, of which a significantly large sample was recovered. Bambata, as the distinctive thin-walled pottery is generally referred to in the literature, occurs in fragmentary form in mainly caves or shelters and more rarely at open localities, accompanied by some of the earliest dates for domestic animals in southern Africa. Attributes such as decorated lips, spouts, thin walls and dense and distinct decorative motifs distinguish Bambata from other early IA ceramics (Huffman 2005:62). Bambata features prominently in current debates since its origins, cultural affinities and role in the spread of food production are issues yet to be resolved. Themes to be explored in this section with particular reference to the data from OBP are possible routes of introduction and affinities of the pottery, as well as the likely makers and users (Wells 1939; Schofield 1940, 1948; Bernhard 1963; Cooke 1963; Robinson 1966; Walker 1983,1994, 1995a; Huffman 1994; Smith & Jacobson 1995; Wadley 1996a; Reid *et al.* 1998; Sadr 1998, 2003a, 2005; Van der Ryst 1998a; Hall & Smith 2000; Huffman 2005; Van Doornum 2005).

The implications of the data recovered through the excavations are considered in chapter 8. The information contained in preceding chapters on lithic and non-lithic archaeological remains will be applied to reconstruct activities at the site over the last 2000 years, with emphasis on the technology, subsistence and diet of hunter-gatherers of the region. This endeavour comprises 'the transition from observing inert data to an exposition of the behaviour responsible for their production, use and discard' (Gamble 1991:1). The excavated materials provide information on the chronology, economy, social practices and, to a lesser extent, the politics of hunter-gatherers of this part of the Limpopo Province. The results of the dating and the

implications for settlement patterns, the cultural sequence and the influence of the environment on settlement patterns are examined. Data from excavated sites on the Waterberg Plateau and OBP are subsequently applied to explore similarities and differences during the last 800 years only, because those sites do not display the prolonged use over time found at OBP. In this section the main themes will be expanded and aspects of the contact history of hunter-gatherers in the Waterberg reconstructed by drawing upon general ethnography, historical and oral data specific to the site and the excavated finds to reconstruct, interpret and explain diverse aspects of the prehistory of the region (Baines 1872, 1877; Holub 1881; Stech 1885; Schlömann 1896, 1898; Moffat 1910; Schwarz 1928; Dunn 1931; Kirby 1940; Mason 1962; Chapman 1971; Cornell 1986).

Contact and interaction with indigenous farming communities moving into the region had an immense impact on the lifestyle of the autochthonous inhabitants of southern Africa, a theme which featured prominently in my previous study, which focussed on the higher-lying Waterberg Plateau. I examine in chapter 8 the nature of contact between LSA people and indigenous farming communities in the lowlands of the Limpopo. Continuity and change in the lifestyle of hunter-gatherers are underscored, with emphasis on economic and social practices, through the complementary application of archaeological data and historical documentation. In other parts of southern Africa economic differentiation caused the incorporation of hunters into stock-owning groups and the gradual emergence of herding people with a different social organization from hunters, and it would seem that similar processes were set in motion in the Waterberg, ultimately resulting in the formation of a group of mixed descent (Van der Ryst 2003). Some residual populations — or individuals — are all that remain to attest to the hunters, gatherers and fishers of the Waterberg. Through archaeological research a window is opened on their rich cultural, economic, social and ritual belief system in the past.

The final section, chapter 9, gives an assessment of the artefactual data and research conducted for this study. Suggestions are also made for specific issues in need of further research which could supplement the results of this investigation into the archaeology of hunter-gatherers in the Waterberg region of the Limpopo Province.

Terms used for hunter-gatherers throughout the discussion include foraging people, San, Bushmen, Masarwa, Masele, and others. The specific use depends on the context and time

frame and, in several instances, on the particular use by an author. This implies no derogatory or any other potentially negative connotations because no suitable broadly-used term can describe the people from OBP or the diversity of the groups referred to.

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THE RESEARCH AREA

> It was no more than an island of uninhabited bushveld bounded by the Limpopo. But small and cramped as it had become it was all the heart of man could desire. It was uninhabited by White men, and the wild animals were still there, all except the giants of the African wilderness — the elephants ... Eugène Nielen Marais 1972:10 *The road to Waterberg and other essays*

2.1 INTRODUCTION

This chapter introduces the place Olieboomspoort (OBP) within the landscape. We cannot reconstruct the original configurations of meaning held by the people who actively inhabited it, nor the names by which it was called, but can only account for the origin of the current site name. That people and places are labelled in terms of the physical characteristics of the land, such as landmark features or a typical local resource, was noted by early ethnographers (Silberbauer 1965:96, 1981:97-8; Marshall 1976a:180; Deacon 1986:135-55, 1988:129-40, 1996:245-70,1997:135-41, 2005; Widlok 1999b:82). Ongoing interaction of people with the land and the significance of the shelter within their own cultural settings likely transpired into a meaningful sense of place, which so appealed to humans that the shelter became a preferred locality for millennia — from the ephemeral ESA visits up to recent times. The natural environment is then examined with reference to the vegetation, topography and geology that shaped the unique and meaningful character of the site. A review of published research data pertinent to the scope of this study, and which can inform on the particular region, is subsequently provided. Implicit ethnographic accounts by travellers, explorers, hunters and missionaries who journeyed through the Waterberg since the early 1800s as well as ethnographical data on the early inhabitants are lastly included in the discussion.

2.2 OLIEBOOMSPOORT: THE NAME

In his publications Mason (1962, 1988) referred to the shelter as Olieboompoort, but I retain the original form of the name, Olieboomspoort, which was used by the first Europeans in the area. Olieboomspoort is also used on maps dating to the 1950s (South Africa 1:500 000 sheet Pietersburg SE25/26:1951; see Map 3:xvii). The name of the shelter is a construct, which derives from the vernacular names of either the exotic castor oil bush (*Ricinus communis*) or thorn apple (*Datura stramonium*), together with the Afrikaans term *poort*, which refers to the deep trough above the shelter where the road from Vaalwater to Lephalale/Ellisras cuts through the valley. According to Raper (2004:288) '[t]he name is Afrikaans and literally means 'oiltree-pass', perhaps referring to *Ricinus communis* growing there, though the *Datura stramonium* is

also called *olieboom*'. *Datura* and *Ricinicus* are commonly known as olieboom, both taxa grow around the shelter and the Riet Spruit, and are widely used as constituents in indigenous medicines. *Datura* is a robust annual and bears distinctive thorny seed capsules that split open to release the small kidney-shaped black seeds. All parts of *Datura* are potentially highly toxic. The seeds are known as *malpitte* and weak solutions are ingested to induce intoxication and hallucinations (Hutchings 1996:279-80; Van Wyk & Gericke 2000:162; Van Wyk *et al*. 2002:86-7). The leaves and seeds are used as poultices, infusions and for protective charms by most farming communities. Any part of the plant can cause mental confusion accompanied by vivid visual hallucination. The dried leaves can be smoked to induce euphoria or to treat headaches. *Datura* is also extensively used in modern medicines. It is, however unlikely that the name of the shelter derived from *Datura*, as local people in the area attribute the name of the shelter to the common castor oil plant, *Ricinus*. Another explanation is that water runoff on the water-burnished sandstone ledges is similar to oil-staining, and the Afguns shelter (see chapter 6, and Rudner & Rudner 1970:98,103, Plates 31-2), is locally known as Oliekrans (Erasmus 1997:pers. comm.).

Castor oil is grown on small scale in rural areas for medicinal purposes. The plant is an invasive and a declared Category 2 weed in southern Africa, so that it may be grown only in demarcated areas under a permit (Henderson 2001). *Ricinus* is still extensively utilized by traditional healers for its well-known purgative properties, and also as a cure for earache and numerous other diseases and disorders (Watt & Breyer-Brandwijk 1962:428-35). The oil may be used in hide working. The Zulu applied the oil to leather skirts (Krige 1936:211). It is indigenous to India and possibly also to the northern parts of Africa (Hutchings *et al.* 1996:169-70). Seeds of this species have been identified in archaeological deposits, particularly in KwaZulu-Natal (Scott 2005b:2-3; Sievers 2005:e-comm.). It was also seen growing at painted shelter sites in the eastern Cape (Diemont & Diemont 1975:15; field observation 1999). At De Hangen in the southwestern Cape the seeds and seed coats were common on the surface and in bedding grass (Parkington & Poggenpoel 1971:24-5). Also at Big Elephant Shelter in Namibia seeds were present in contexts that may relate to an early herder presence (Wadley 1979:65; 2001:49). Such a broad geographical spread argues for the considerable use of substances obtained from the plant.

The vernacular name for *Ricinus* was recorded as early as c. 1777 by Thunberg as 'incolis frutex dicitur oly-boom' (Smith 1966:354; Sievers 2005:e-comm.), demonstrating that the plant was already well established in the Cape region. *Ricinus communis* was probably introduced through sheep with the fleece acting as a dispersal agent (Richardson *et al.* 1997:536-7, 565). Baines (1877:58) on his travels through the trans-Vaal and Botswana saw *Ricinus* growing in the river bed of the Motloutse in Botswana. The explorer Elton (1872:96) described this taxon among the various crops of the Tonga of 'Madumelan' on their lands at the junction of the 'Lipalule' (Olifants River) with the Limpopo. Along the river banks he saw castor oil plants, as well as sesame, *holcus* (sorghum), tobacco, hemp, millet, groundnuts, pumpkin, onions and cabbages all 'in great quantities' (Elton 1872:96, 98).

The original name of the shelter or the meaning that OBP held in the past cannot be reconstructed. What we do know is that different sites within a territory are labelled in landscape terms that relate to distinctive local land features, spatial orientation and resources, events that occurred there in the past, or mythological origins (Bleek & Lloyd 1911:315-7; Deacon 1986:135-55, 1988:129-40, 1996:251-3, 1997:135-41; Valiente-Noailles 1993:33, 56; Ouzman 1994, 1995:55-67, 1996:31-59, 1998a:30-41; Tilley 1994:27; Widlok 1999b:81-5; Smith 2005:266; Bank 2006:144-5). Socially shared ways of talking and thinking about the environment are at the most basic level expressed in the terminology used for natural features and movement over the land. Physical characteristics of the environment, such as the surface structure or a typical local resource, were used by the Hai‖om to identify different groups and places (Widlok 1999b:81-2). A place requires prominent and idiosyncratic associations to mark it in the landscape. At OBP the enormous specimen of *Xanthocercis zambesiaca* (nyala tree) — the only one within the immediate surroundings — would not have gone unnoticed. Geographical features are, moreover, personified in myths and legends (Deacon 1997:136-7). That the landscape was intimately related to human life, is illustrated by the last words uttered by a /Xam man on dying from arrow poison when he said that '[my] heart stands in the hill' (Deacon 1997:136). In the Kalahari the lasting importance of places is confirmed in the continued use of many of the early names as documented for hunter-gatherer localities by indigenous farming communities (Bartram *et al.* 1991:85; Widlok 1999b:82). The Waterberg region retains some place names ascribed to a hunter-gatherer origin (see also chapter 8). In the following section the relevance of OBP within the natural landscape is explained to demonstrate that this locality must have held enduring meanings in the past.

2.3 THE SHELTER WITHIN THE LANDSCAPE

OBP is one of the largest shelters in the region and eminently suitable for extended band alliance visits. The rare larger shelters in the Waterberg are situated in elevated positions above rivers systems where the relatively narrow and elongated, and often arched, spaces developed through erosion (see also section 2.4.1 on the geology). Differential resistance in the predominantly sedimentary sandstone and unconsolidated mudstone strata of the Waterberg Group resulted in a narrow configuration for shelter spaces that were cut into the sandstone beds of the mountain chains along courses of earlier river systems. The numerous shallow and generally small overhangs are not suitable for large gatherings. Nonetheless, practically all shelter localities show sustained use over time by probably dispersed small social units, and with rock art also being produced.

The early inhabitants of this region probably did not use the OBP shelter as a base during the greater part of their annual cycles, but constructed temporary structures out in the open. Transient and special-purpose camps occupied while travelling, hunting and butchering game, or to collect locally abundant plant foods, are used by all hunting and gathering people (Bartram *et al.* 1991:85-90). This is borne out by observations on remnant groups from this part of the Waterberg who camped at a kill site until all the meat had been disposed of (Schlömann 1898:66). The OBP shelter would have been extensively occupied during inclement weather and throughout the public aggregation phase. OBP is the only major regional shelter, lies in a valley on a route from the Waterberg Plateau to the lowlands and besides on the way to easy crossings across the Limpopo River towards Botswana. These attributes probably contributed to scheduling OBP into multi-band alliance visits.

Its prime position within the landscape as well as the powerful connotations that made this locality so desirable over time, probably also accounted for the transient post-contact use by hunter-gatherers as other groups started to frequent OBP for their own social ceremonies. Schlömann (1898:66) said that internal wars and widespread population movements in the interior forced hunter-gatherers into the unhealthy lowlands of the Limpopo River where they lived under circumstances of extreme poverty. They dispersed into small independent family groups and took refuge in caves and mountainous areas. Whereas caves became increasingly important as post-contact places of retreat, such places could also be death traps (Stow 1910:179, 227-30; Dornan 1917:47; Parkington & Mills 1991:359).

Olieboomspoort's geographic orientation is at coordinates of 23°52'42" S; 27°38'17" E; on the 2327DC AFGUNS 1:50 000 map. It is a long, relatively narrow space that developed in the thick-bedded sandstone that forms a low mountain range above the Riet Spruit, a tributary of the Mokolo River, which drains into the Limpopo. The water course in the valley floor below the shelter is broad and shallow with rock-edged pools and waterlogged areas. The Riet Spruit generally holds water throughout the seasons and provides diverse riverine resources. In years of exceptional high rainfall (as during 2000), a floodplain develops from bank overflows so that the water extends almost to the base of the talus. It is likely that a high-flooded area during very wet climatic phases resulted in restricted access and therefore low levels of occupancy at the shelter. Whereas the shelter sediments show localised concretions caused by leaching of moisture, there is no evidence for flooding. OBP shelter faces east-west. In the cold winter mornings it is warmed by the first sun up to 10:00 am, whereas in summer it affords a retreat from the stifling valley heat.

2.4 PHYSIOGRAPHY

2.4.1 Geology and topography

The approximate age of the Waterberg is placed at 1900-1700 million years (Eriksson *et al.* 2000:177). Age assessments are based on the rock colouration, because the earliest continental red beds appeared between 1.8 and 2.0 million years ago (Brandl 1996:22). The Waterberg red sandstones are some of the oldest in the world and were deposited under atmospheric conditions of free oxygen derived from photosynthesis by Cyanobacteria over many millions of years (McCarthy & Rubidge 2005:141). This process converted the iron in the sediments so that the sand grains became stained and even cemented. Correlation with other successions is problematic because no fossils have been found in the Waterberg Group (SACS Handbook 1980:336). The mountainous areas of the Waterberg stretch more or less east-west, forming a large plateau with steep escarpments to the south and the east. Prominent mountains of the escarp are the Kransberg or Marakele, the Sandriviersberge and Hanglip. The plateau slopes gradually toward the north where the rivers of the plateau drain into the Limpopo. Four major rivers feed the Limpopo, namely the Motlhabatse, Mokolo, Lephalala and Mogalakwena. Plains occur between the mountain ranges. The research area falls within the drainage basin of the Mokolo River.

The Waterberg Group represents the major lithostratigraphic unit for the geological succession in the research area and covers an area of more than 20 000 square kilometres in the Limpopo Province, extending into Botswana. The earlier very large expanses of the Waterberg (and Soutpansberg) Groups have been much reduced by erosion (see McCarthy & Rubidge 2005:143, fig. 4.39). An Archaean basement, the Kaapvaal Craton, underlies the major part of the Limpopo Province. The Waterberg and Sandstone Groups were the last major sedimentary accumulations that resulted in the formation of the Kaapvaal Craton (McCarthy & Rubidge 2005:143). Crustal movements caused faulting and warping of the craton and resulted in a series of depressions being formed. These basins were filled with sedimentary rocks of which the Waterberg Group represents the youngest. It rests unconformably on the lower strata as a surface of erosion/non-deposition separates the younger from the older rocks that include associated sedimentary and also crystalline formations (Cheney & Twist 1989:354). During the long period of sedimentary depositions minor geological formations of scattered igneous intrusions occurred (McCarthy & Rubidge 2005:143). Some of the older formations that underlie the Waterberg Group comprise the basic (mafic) rocks and granites of the Bushveld Complex, the Rooiberg Felsite Group, the Transvaal Sequence and the Archaean gneisses and granites of the Kaapvaal Craton.

The Waterberg Group is divided into thirteen formations of which the Blouberg is generally acknowledged to be pre-Waterberg (Callaghan 1993:2). A formation represents an assemblage of rock strata with common characteristics. The transport direction of the formations was generally from the north and northeast (Cheney & Twist 1989:353). The Waterberg sequences show a general pattern of successive overlaps or transgression northwards (Cheney & Twist 1989:355). The sediments of the Waterberg Group constitute an upward-fining sequence with rapid deposition in the lower parts of the succession (Glossary 1984:322-32; Brandl 1996). The composite thickness of the Waterberg Group is from 6 to 7 km, and in general not greater than 5 km at any one place because of transgressions and erosions (Cheney & Twist 1989:353). Formations pertinent to the Lephalale/Ellisras area comprise the Aasvoëlkop (named after a mountain northeast of Thabazimbi), Mogalakwena (derived from the Mogalakwena River) and Cleremont (named after the farm Cleremont 128 KR east of Vaalwater) (SACS Handbook 1980:339-40). Some of these formations grade laterally into others (Cheney & Twist 1989:354; Callaghan 1993:3).

The sediments of the underlying Aasvoëlkop Formation accumulated in a shallow through-flow inland lake. The formation underlies flat, often sand-covered country, with outcrops mainly along the Limpopo River (Brandl 1996:18-9). In contrast, the more resistant rocks of the Mogalakwena Formation resulted in the development of a mountainous terrain with steep and narrow valleys (Brandl 1996:19). The Mogalakwena was deposited by large braided sediment-laden rivers flowing from the highlands in the northeast into a basin. A mountain range rapidly developed to the north. In areas sand dunes were formed by occasional strong winds (McCarthy & Rubidge 2005:142). The basin deepened at a steady rate and developed an extensive braid plain, which probably continued through Botswana towards a distant sea (Callaghan 1993:57; Brandl 1996:20). As sediments from the north decreased, this sea transgressed over the braid plain and deposited the Cleremont Formation, which is interpreted as a shore-formed littoral deposit or possibly a tidally influenced shelf deposit (Callaghan 1993). The Cleremont forms a thin cover on the Mogalakwena Formation and consists of mostly sandstone, which disintegrates into white sand (Brandl 1996:21). The Vaalwater Formation, which ended the Waterberg period, formed within a shallow sea.

The major section of the research area is situated within the Mogalakwena Formation of conglomerates, sandstones and some shale (Brandl 1996:19-20). The colours of the sediments range from red to brown or purple-brown with irregular zones of lighter colour. Some of the red arises from the presence of free oxygen whereas the more purple colours indicate haematite, which Mauch in 1869 called ‘the ubiquitous mauve coloured sandstone’ of the Waterberg (Burke 1969:14-5). Lavas are rare and tuffs uncommon. Intrusions of volcanic rocks are common. Vein quartz within the quartzite is a source of quartz crystals. Jasper, chert and other siliceous material and fine-grained magnetite-bearing quartzite form part of the matrix (SACS Handbook 1980:335).

The geological formations in the Waterberg produced a range of raw materials suitable for the manufacture of lithics. Cobbles and pebbles of CCS materials are abundant in the conglomerates and are eminently suitable knapping material when weathered from the matrix. The underlying Bushveld Complex crystalline basement rocks and Rooiberg felsic tuffs are rich sources of fine-grained materials and felsite, which were used in the manufacture of stone tools. Felsite, quartz and other cryptocrystalline silicas were exploited as raw material throughout the MSA and LSA sequences identified in the Waterberg. The superabundance of high quality

quartz crystals in the OBP assemblage suggests that quartz veins were intensively quarried for knapping materials. Haematite is abundant and features prominently in the Waterberg assemblages (see chapter 5 for a discussion of earth pigments).

2.4.2 Vegetation

The savanna biome, with a riparian fringe, supplies the essentials required for a hunting and gathering lifestyle because it denotes good grazing (and therefore abundant wildlife) and a sustainable and extensive range of plant resources. The biome concept recognizes the largest vegetation units defined mainly on floristic criteria (Rutherford, Mucina & Powrie 2006:32-3).The characteristic broad-leaved savanna of the area could be harvested for food in particular, and also for medicinal purposes, fuel wood and raw materials for diverse subsistence tasks. Savannas, as a dominant vegetation type of mainly woody plants and C_4 grasses, occupy 87% of southern Africa (Cowling *et al.* 1997:594; Scholes 1997:258; Driver *et al.* 2005:5, 103). Pollen sequences suggest that the contemporary savanna structure was probably only established at approximately 1000 BP, although broad-leaved savannas developed from 7000 years BP onwards during a climatic optimum within the mid-Holocene (Scott *et al.* 1997:70, 75, 77). Palaeoclimatic data do not show any major vegetation changes during the Holocene.

Distribution and growth of vegetation are dependent on the season of rainfall and the concentration of precipitation over a period within that season. Such seasonality within a given region would in the past have impacted on patterns of plant use by humans. The study area falls within a dominant summer-rainfall zone, with currently a midsummer January peak (Schulze 1997:28-33). Precipitation in the Central Mountains ecozone is between 350-650 mm and can be as much as an average of 900 mm in the mountainous regions (Grant & Thomas 2000). It would, however, seem that it was generally wetter at approximately 1000 BP with precipitation becoming gradually less after 1000 BP. Winters are mild and summers hot, with temperatures of between -5° C and 40° C, with an average of 21° C. Temperatures measured for the valley within which OBP lies were noted to be generally higher than the official daily averages for Lephalale. The altitude ranges between 800 and 950 metres.

High species diversity and richness result from good water sources and also a topography that includes a valley floor, rocky areas and cliffs in immediate surroundings of the shelter. The composition of the savanna biome consists of a grassy ground layer with an upper layer of

woody plants characteristic of mixed bushveld (Low & Rebelo 1995:19). According to recent vegetation maps OBP is situated approximately on the transition zone between the Limpopo Sweet Bushveld (Svcb 19) and the Waterberg Mountain Bushveld (Svcb 17) (Driver *et al.* 2005:89-90; Rutherford *et al.* 2006:474). The surrounding area accordingly contains woody elements of both vegetation types. Dense, short bushveld as well as open tree savanna occurs. The vernacular bushveld is loosely applied in southern Africa for savanna vegetation (Cowling *et al.* 1997:592). The shrub-tree layer varies from three to seven metres (Low & Rebelo 1995:19). Typical trees on the deep sandy soils of the plains include *Pterocarpus rotundifolius*, *Terminalia sericea*, *Ochna pulchra* and *Burkea africana*. C_4-type grasses dominate, including *Eragrostis* spp., *Schmidtia pappophoroides*, and the less palatable *Aristida* spp. The sandstone mountains, numerous koppies and hill slopes are covered by a dense growth of trees, shrubs and grasses. Striking tree species on the well-drained koppies nearby include *Albizia tanganyicensis* and *Commiphora* spp. Lower down are *Faurea saligna*, *Kirkia wilmsii* and *acuminata*, *Grewia* spp., *Pappea capensis, Croton gratissimus*, *Berchemia zeyheri, Sclerocarya birrea*, a single enormous specimen of *Xanthocercis zambesiaca*, and a multitude of others. Dense, almost impenetrable thickets of pioneering *Dicrostachys cinerea,* have formed along the old road below the shelter. This used to be the main route between Lephalale/Ellisras and Vaalwater, cutting across the valley and running alongside the Riet Spruit (Map 2).

2.4.3 The past environment

Climatic data from the Wonderkrater spring deposit, and the Pretoria Saltpan crater lake sequences, based mainly on pollen, serve as proxies for the reconstruction of changes in the environment at OBP (Scottt *et al.* 1997:76-7). Whereas proxy indicators provide indirect indications of past environments, they are fundamental to archaeoclimatic modelling (Holliday 2001:20-6). Palaeoclimatic statistics for the last 2000 years — the focal period of this study — indicate no significant climatic changes. Nonetheless, several short-lived oscillations occurred and the pollen sequence from the Wonderkrater suggests that conditions became cooler and somewhat wetter between 4000 and 2000 BP (Mitchell 1997:366-7). Oxygen isotopes, dendrochronology, palynology and other environmental data also signal various oscillations (Tyson & Lindesay 1992:271-8). A layer of rock spalls at OBP in levels dating to >14 000 years ago can be attributed to extreme oscillations during the onset of the LGM that caused the collapse of sections of the shelter vault. Shorter oscillations with cooler and wetter conditions between 4000 and 2000 BP probably generated the superabundance of spalled roof fragments,

which were introduced into LSA levels dating to approximately >2000 years ago (see also chapter 3 for a discussion of the stratigraphy).

Although there are still spatial and temporal breaks in the fossil pollen record for the regional savanna, data from other areas do indicate a drier savanna at c 1000 BP (Scottt *et al.* 1997:76). Warm and wet conditions at approximately AD 250 to 600 with corresponding higher temperatures in the summer rainfall area were followed by cooler temperatures and then another wet and warm spell during the Medieval Warm Epoch from approximately AD 900 to 1290 (Huffman 1996a:55-60). The onset of the Little Ice Age (AD 1300-1500) introduced drier conditions, but with a warm pulse between AD 1500 and 1675 (Huffman 1996a:58-9). The 18th century was marked by high rainfall patterns followed with severe drought at the beginning of the 19th century (Huffman 1996a:58-9).

Human impact on biomes by the scattered and small hunter-gatherer populations was doubtless negligible (Hoffman 1997:512-3). However, climatic changes do regulate human movement, as demonstrated by significant populations of domestic stock at approximately AD 850 to 900 in currently arid areas, which cannot now sustain such numbers (Tyson *et al.* 2002:132). The expansion of African farming communities certainly impacted on OBP where low counts of domestic fauna signal economic (and social) transforms following on contact. The substantive faunal species list of wild animals compiled from the excavation (see Appendix J), suggests a much depleted modern fauna (Estes 1991; Beukes 1997, 2001; Plug & Badenhorst 2001; Skinner & Chimimba 2005). No extinct taxa were recovered from the MSA levels. The more common fishes are barbel (*Clarias gariepinus*), yellowfish (*Labeobarbus* sp.) and various other barbs (*Barbus* spp.), minnows (*Opsaridium* spp.), redbreasted tilapia (*Tilapia rendalli*), banded tilapia (*Tilapia sparrmanii*), canary kurper (*Chetia flaviventris)* and blue kurper *(Oreochromis mossambicus*) (Skelton 2001; Walker & Bothma 2005:177). It is likely that a greater variety of freshwater fishes were formerly present as suggested by the conservation status of vulnerable and endangered species on the red data list (Skelton 2001:xiii).

2.5 LITERATURE REVIEW AND PREVIOUS RESEARCH

Culturally diverse groups lived in the Waterberg region over thousands of years, yet there is a dearth of information on the identity of the various groups, the several occupation periods, as well as the economic and social organization, behaviour, social and ritual life of the people who

inhabited this region. Since settlement patterns are important to the examination of the Waterberg prehistory, it is essential to establish the extent of settlement within the region and the following section explores the data available on settlement and related aspects.

Preliminary archaeological exploration in the trans-Vaal region was initiated in the 1950s when Revil Mason investigated 30 LSA sites in the area, with small-scale excavations undertaken at 11 of these to recover data for a compendium, which was subsequently published as *The prehistory of the Transvaal* (1962). Surface collections of LSA scatters resulting from brief visits signified the extensive, but ephemeral, presence of hunter-gatherers on the land (Mason 1962:301). Mason used Van Riet Lowe's subdivision for the Smithfield (A, B and C) in his own classification for the regional LSA, but applied the terms earlier, middle and later for the successive stages (Mason 1962:303). Currently the term Smithfield is only used for assemblages of the terminal Karoo sequence, which contain backed bladelets and long end-scrapers (Deacon & Deacon 1999:113). Mason (1962:303) used radiocarbon dates from Makgabeng, OBP and also Matjiesrivier in the Cape to establish a presence for the Smithfield Culture before 11 250 ± 400 BP until after 870 ± 150 BP. At four of the shelter sites he found LSA as well as MSA occupation levels. Only these sites yielded significantly large LSA samples, namely the surface collection at Zevenfontein and excavations at Uitkomst (both near the Jukskei River in Gauteng), as well as at Makgabeng and OBP in the Limpopo Province. At eight localities the most recent utilization signalled an Iron Age (IA) presence (Mason 1962:301-2). Stratified sequences that included his Smithfield, as well as MSA and ESA, were found only at Mwulu near the Cave of Hearths and at OBP (Mason 1962:301).

The publication of Mason's (1962) preliminary investigations at OBP recognized the site's potential for informing on the Stone Age history of the trans-Vaal region. After several unsuccessful attempts, the site was relocated in 1997, and my own excavations commenced. Mason's (1962:301-30, 374) chronological succession at OBP comprised surface IA on top of the LSA occupation levels, followed by a so-called Pietersburg MSA assemblage, which terminated in an ESA Later Acheulian unit. The range of raw materials used for the MSA assemblage includes felsite, quartzite, mudstone, chalcedonies, quartz and other CCS. A date of greater than 33 000 years ago was obtained from the British Museum Research Laboratory for Mason's (1962:84) Olieboomspoort Pietersburg Culture Middle Stage. An examination of the

available excavated sample, housed at the University of the Witwatersrand, yielded examples of ESA bifaces.

My own subsequent (1997) excavations of a test trench also produced two large ESA cutting tools at the base. Both are of sandstone, the one being a handaxe and the other a rough cleaver (Kuman 2002:pers. comm.). The very stony basal substratum inhibited full exploration of the 500 mm x 5 m and 2 m deep trench. The subsequent extended excavation has yet to reach those levels. Mason (1962:310) described the LSA lithics, radiocarbon-dated to 870 BP, as Later Smithfield. A reexamination of Mason's excavated material confirms a Wilton character for the assemblage. My own excavated sequence suggests in main a classic Wilton character. Whereas the upper levels at OBP are impoverished, a post-classic Wilton is not convincing. In section 2.5.1 Mason's LSA findings are more fully discussed.

Mason (1988:iii) also intermittently, over a period of three decades, excavated Kruger Cave in the Magaliesberg. Similarities between the Kruger Cave and OBP LSA assemblages were striking. In view of a perceived close fit between the LSA decorated bone tools from OBP and Kruger with those from Broederstroom Cave (Magaliesberg) and Greefswald (Limpopo), Mason (1988:123-7, figs 47-56) proposed intermittent contact between hunter-gatherers and indigenous farming communities, but did con concede that very similar artefacts are still being manufactured by the San in Botswana (1988:109,127). Such a continuation in analogous technologies over time and space in the LSA, but with changes in formal frequencies and morphology, defines hunter-gatherer assemblages (Mitchell 1997:367).

Fichardt (1955, 1957) identified undifferentiated LSA surface sites near Settlers in the Limpopo Province. Whereas both Wilton and Smithfield material were present, no distinction was made between the material culture of each industry. The assemblage contains lithics recovered from, and immediately below, the surface. Fine-grained materials were predominantly used for microliths whereas the larger implements are made on felsite. Sandstone was the preferred raw material for bored stones.

Schoonraad and Beaumont (1968) conducted limited excavations at a small shelter on the farm New Belgium 608 LR on the Waterberg Plateau and also documented the rock. Two strata were identified. The upper Stratum2 was assigned to 'a contaminated Wilton' (Schoonraad &

Beaumont 1968:319) because the assemblage contained intrusive MSA lithics and IA artefacts. The lowest part of Stratum 1 contained an uncontaminated MSA assemblage. The upper levels of Stratum 2 were almost pure LSA. They used relative percentage ratios to differentiate between groups, and divided the stratigraphy accordingly into MSA, a mixed group of MSA and LSA artefacts, and a LSA group. Other finds included OES beads, groundstone fragments, grooved stones, glass and iron beads, as well as 700 pieces of modified and unmodified haematite. My own limited excavations at this locality were not pursued in detail (Van der Ryst 1996, 1998a).

At some distance from OBP (see Map 1) are the Soutpansberg mountains and Limpopo Flats. Here ongoing investigations and recent excavations establishing sequences, together with the rock art sequence, reflect the complex interaction between hunter-gatherers and indigenous farming communities (Hall & Smith 2000:30-46; Eastwood 2003; Ouzman & Smith 2004; Smith & Ouzman 2004; Eastwood & Smith 2005). It has been argued that these localities were places of social power, but that this resource was gradually appropriated by herder and, subsequently, farmer populations (Hall & Smith 2000). Archaeologically visible transitions were used to establish the extent of interactive relationships. The research took into account the incorporation of ceramics from herder and farmer contexts into LSA deposits and relative changes in lithic and bead frequencies. Rock paintings of sheep and changes in the contents and styles of the rock art sequences were used to infer the presence of herders and farmers. Settlement of the Limpopo Valley by different farming communities and intensification in the use of resources brought about changes in the demographic and economic patterns of hunter-gatherers. Deteriorating social relations and stressed economic conditions contributed to the demise, displacement and/or absorption of the Soutpansberg hunter-gatherers during the second millennium (Hall & Smith 2000).

Recent research by Van Doornum (2005) at hunter-gatherer sites in the Shashe-Limpopo region (SLR) concentrated on interaction with indigenous farming communities. Intermittent pre-contact occupation at shelters is found from as early as 12 000 BC until shelters were more intensively utilized during the late pre-contact LSA at approximately 1200 BC to AD 100 (Van Doornum 2005:189-91). Findings show complex relations and a range of reactions and responses by hunter-gatherers following contact. These include a focus on exchanged goods as signalled by, for instance, increased frequencies of scrapers linked to the processing of skins, as well as

incremental intensification of activities and occupation at shelters. Demographic changes to embrace African farmers on the landscape required adjustment and resulted in distinct responses. The continued occupation found at some localities is interpreted to denote symbiotic relations. Some groups would certainly have moved away from villages, whereas the characteristic flexibility of hunter-gatherers encouraged others to explore new economies. Their position as original inhabitants of the land and their role as ritual specialists ensured them some place in the developing hierarchies (Van Doornum 2005:193-4).

At approximately AD 900 to 1200, during the K2/Leokwe period, differences in densities of material at the various SLR shelters in the main correlated with the approximate distance from villages. Factors such as seasonal movement and alliances, resulted in individual and group interaction with villagers that are parallelled in the archaeological record. The progressive decline of a hunter-gatherer presence up to the late contact period is ascribed to marginalization. The movement of new groups into the area at approximately AD 1000 to 1300, and the ascending African farmer presence culminating in the settlement of K2 and Mapungubwe, required differential strategies from hunter-gatherers to negotiate increasingly complex demographics (Van Doornum 2005:194-5). After AD 1300 there are seemingly no more hunter-gatherers around the Shashe-Limpopo. It is suggested that they abandoned the region or that they were induced to move with farmer groups through relationships of marriage, trade or subjugation (Van Doornum 2005:196).

Ethnographical research shows broad similarities in subsistence, contact strategies and material culture within San communities. Data from Botswana and Zimbabwe (Dornan 1917; Wells 1939; Bernhard 1963; Cooke 1963, 1971, 1980; Robinson 1966; Walker 1980,1994, 1995a, 1995b, 1998a; Reid *et al.* 1998; Sadr 1999) complement this study and contribute to the interpretation of recovered materials. The Waterberg is also geographically close to Botswana. The movement of hunter-gatherers across the Limpopo between the Waterberg, Botswana and the Kalahari was apparently quite common (Stech 1885; Schlömann 1896; Kirby 1940; Breutz 1958). This is consistent with observed mobility across geographical and environmental boundaries. However, Baines (1872:33, 1877:64-6; in Wallis 1946:745-6) wrote that his Mosarwa guide refused to cross the Limpopo. The guide explained that ‘he had brought us out of the limits of his own tribe and into the country of the next’ (Baines 1877:64). Another small band of Basarwa could not be tempted with beads, lead or gunpowder to accompany Baines (1877:66) across

the Limpopo to the Mogalakwena River. Frontiers have always been important and may imply a distinct border or a broader region within which contact between groups take place (Green & Perlman 1985; Moore 1985; Reid & Segobye 2000).

Walker (1998a:76) proposed a closer link between the LSA of western Botswana and South Africa, and suggested that eastern Botswana shares similarities with adjacent Zimbabwe. This is tentatively ascribed to the movement of people from neighbouring areas into Botswana after a sparse mid-Holocene occupation of the greater part of Botswana (Walker 1995b:254-5). The presence of distinctive tool types in the OBP assemblage such as backed scrapers, may substantiate inter-band contact. Backed scrapers seem to be a feature of LSA assemblages in the west of Botswana, have a low incidence to the south and north east and are apparently absent in the far east. In the opening quote at the beginning of this chapter, Mason (1962:310) implies movement across regions when he says that OBP lies on an easy route between the Waterberg and the Kalahari to the far west. Mason's excavated results relating to the LSA occupation are now examined in more detail.

2.5.1 Results of Mason's investigations at OBP

A date of 870 ±150 BP was established for the final LSA occupation at OBP (Mason 1962:303). Mason made use of two subdivisions for the OBP industry, namely Primary and Secondary Classes, which included subdivisions of flakes, burins and *outils écaillés*. A total of 424 individual tools was recovered (Mason 1962:313):

Primary classes	Total	Percentage
Narrow quadrilateral flakes	67	15.6
Broad quadrilateral flakes (of which 9 were shaped as endscrapers, 12 as side- and endscrapers, 3 as sidescrapers and 7 as double side- and endscrapers, i.e. a total of 31 scrapers)	32	7.5
Irregular flakes (62 endscrapers, 34 side- and endscrapers, 34 sidescrapers, 24 double side- and endscrapers and 7 backed flakes were included in this class)	202	48
Burins	21	4.9
Outils écaillés	102	24
Total	424	100

The following table illustrates the scraper total and percentages (Mason 1962:315):

Scraper class	Total	Percentage
Endscrapers	71	37.5
Side- and endscrapers	48	25.4
Double side- and endscapers	31	16.5
Single sidescrapers	39	20.6
Total	189	100

The primary raw materials used in the manufacture of the above, are as follows (Mason 1962:317):

Raw materials	Percentage
Chalcedony	16
Chert	4
Quartzite	4
Quartz	22
Agate	54

A total of 288 objects was recovered from Mason's secondary classes. These contain wood and bone points/shafts, bone spatulates, shell beads/pendants, quartz crystals and haematite fragments, upper/lower grindstones, grooved stones, cores and irregular artefacts (Mason 1962:313). Several dozen waste flakes are also present.

Secondary classes	Total
Cylindrical bone and wood points	10
Cylindrical bone and wood shafts	52
Bone spatulates	3
Shell beads and pendants	155
Quartz crystals	12
Haematite fragments	5
Upper and lower grindstones	5
Grooved stones	24
Cores	9
Irregular artefacts	13
Total	288

A comparison between material from Mason's trench and the one subsequently excavated by me at OBP — and with similar dimensions — shows that he recovered surprisingly small numbers, as is clear from the following selection:

Selection of classes of lithics from the last 2000 years recovered from test trench F		
Class	Numbers	Relative % compared to extended excavation
Scrapers only (including backed scrapers)	479	20
Total formal tools (including scrapers)	633	21
Bladelets	796	21
Blades	117	16
Flakes	2386	21
Grooved stones	31	21
Chips	3002	11
Chunks	4491	18
Pigments	1901	20
Quartz crystals	776	21
Cores	725	25

The lithics and non-lithic remains from the current excavations are discussed in more detail in chapters 4, 5 and 6. When compared to Mason's results, it suffices to note that his initial excavations recovered, for instance, only 189 scrapers, 214 flakes, 12 quartz crystals and five pieces of haematite for the LSA succession. Changing methodologies and excavation strategies probably account to some extent for such a low recovery rate. Larger objects show more corresponding numbers (e.g. 24 grooved stones against 31 from my test trench).

It is significant that Mason in his analysis included all the excavated LSA material, whereas the present study focuses on the last 2000 years only. Mason, moreover, situated his trench under the greatest expanse of the shelter roof. Since the excavation was not backfilled (Mason 1997:person. comm.), potential damage to the deposit by collapsed walls and contamination had to be taken into account for the resumed excavations. The grid was accordingly placed at some distance from what was evidently Mason's excavated section. The position was determined from a published photograph of the shelter that shows the trench and a diagnostic painted panel on the shelter wall (Mason 1962:79). The present excavations are consequently not in the area where there is a maximum roof overhang. The premise that the greater sheltered space would have been intensively utilized and focal in band activities is supported by high relative frequencies for all classes of tool types and other cultural materials recovered from the F-trench that is closest to this space.

2.6 RECENT REGIONAL RESEARCH

From the foregoing it is evident that the cultural chronologies for the region and the sequence of technological changes over time have not yet been satisfactorily resolved. Data on the lifestyle, social organization of hunter-gatherers and also contact situations as well as related issues are also lacking. The fact that current research themes have moved away from an emphasis on lithics is discussed in the previous chapter. Archaeological sites in the drainage system of the Lephalala River on the Waterberg Plateau, and in particular Goergap shelter, formed the focus of my earlier research (Van der Ryst 1998a, 2003). Since historical sources and local oral tradition indicate that hunter-gatherers lived in this region until the early 1900s, the contact situation between LSA hunter-gatherers, indigenous farming communities and also the European settlers constituted a major theme. Aukema (1988, 1989; see also Huffman 1990) explored large areas of the Lephalala River drainage system during his preliminary surveys, which concentrated on the main water course and tributaries and also included mountainous

areas. The survey of archaeological sites in the research area was continued after 1990 (Boeyens & Van der Ryst, various unpublished reports) and sites recorded on 1:50 000 maps.

Dates obtained for the major period of LSA occupation of the Waterberg Plateau suggest a relatively recent sustained presence for hunter-gatherers only from approximately the late 11th century AD to the beginning of the 12th century AD. A hiatus of thousands of years exists between the MSA sequence and subsequent LSA settlement of the plateau. The extensive MSA sequence of the Waterberg Plateau suggests a strong presence for hunting and gathering communities in the region. In contrast, the lower-lying basin area, which includes the site of OBP, seems to have been occupied much earlier by LSA hunter-gatherers. Mobility across the landscape and socio-political developments during the 19th century resulted in periodic and, in some instances, more permanent movement of people into the basin. The main period of semi-permanent settlement of the Waterberg Plateau by hunter-gatherers corresponds broadly to the movement of indigenous farming communities into the region. This overlap, and a late occupation of the plateau, are related issues and may imply symbiotic coexistence with farming communities.

The nature and extent of change that contact and long-term interaction brought about are inconclusive. Ethnographic sources on 19th -century group relationships show diversity, ranging from mutually profitable client-patron interaction to the subjugation of hunter-gatherers into an active form of slavery. Several features of interactive processes were reconstructed through archaeological investigations, written accounts by 19th-century observers and archival research (Van der Ryst 1998a, 2003). Interaction between the autochthonous hunter-gatherers and farming communities ultimately resulted in the emergence a subordinate class of mixed descent referred to as *Vaalpense* — and in the Waterberg region also as *Masele*.

In the previous study archaeological excavations supplemented with documentary data, which included missionary correspondence, travel journals and also archival material specific to the more recent hunter-gatherers of the Waterberg, were drawn upon to explore the origins of the *Masele*, their widespread occurrence and specifically their relative status in a range of interactive processes. The establishment of networks of interdependence, the appropriation of hunter-gatherer beliefs and ritual localities by dominant groups, the displacement of and the incorporation of some hunter-gatherers into indigenous farming communities and the final

disintegration of the hunting-gathering society were some of the issues dealt with (Van der Ryst 1998a, 2004).

2.6.1 Historical and ethnographic accounts on encounters with hunter-gatherers of the Waterberg

> Along the banks of the Limpopo between the Transvaal and Southern Rhodesia there are scattered a few small groups of an extremely primitive people who are generally confounded with the Bushmen but they differ in some important aspects from that race. They are the "Earthmen" of some writers but their real name is *Kattea*, though called by their neighbours either *Ma Sarwa* ("Bad People") or *Vaalpens* ("Grey Paunches") ... (Keane 1920:120)

Recent revisionist debates challenged the view of hunter-gatherers as isolated remnants of primitive purity and with a timeless traditional organization untouched by wider economic structures (Barnard 1992:55). A reinterpretation of data (Widlok 2005:21-2) demonstrated that hunter-gatherers did not exist in isolation, but had social, economic and political ties with neighbouring communities. It also applied to the Limpopo region from about 2000 years ago when they began sharing the land with indigenous farmers and, finally, European hunters and settlers. Even recent hunting and gathering groups do not actively defend territorial rights (Katz *et al.* 1996:12). In other parts of southern Africa economic differentiation caused the incorporation of hunters into stock-owning groups with social and economic organizations different from that of hunters, and it would seem that similar processes were set in motion in the Waterberg, ultimately resulting in the formation of a group of mixed descent.

OBP lies within an area marked as inhabited by ‘Vaalpen's or Masele or Bahloekoe’ (Merensky 1875) on a map of the former Transvaal Republic. An understanding of the role of the *Masele* in the Waterberg is important in the context of LSA research in the Limpopo. Most accounts by 19th-century travellers of their exploration of the interior through the Shashe-Limpopo, Botswana and Kalahari regions refer exhaustively to them by the particular term of *Vaalpense*. They were found in the Soutpansberg, Waterberg and other areas of the Limpopo Basin, and well within the distribution range of the tsetse fly as these unhealthy environments could not support the cattle herds of indigenous farmers, and also in the Dwarsberg area of the North West Province.

Various ethnonyms — mostly derogatory — were given to these people as generally happens with discriminated minorities in a multi-ethnic setting (Widlok 1999b:14). To the Europeans they were known as *Vaalpense* (Bergh & Morton 2003:45, 72), whereas the Tswana called them

Masele (Schlömann 1896, 1898) or their *Balala* (Breutz 1958:49; Chapman 1971:43-5). *Lesele* (singular) or *masele* (plural) is a derogatory Tswana term meaning alien or foreigner (Snyman 1990:150). Breutz (1958:49) said that in using the prefix 'ma' (as in *Masele*), the Tswana did not regard these groups as 'really people'. Other synonyms such as *Bahloekoe*, Earthmen, *Kattea* and *Kgalagadi* were also used in indiscriminate ways (Merensky 1875; Farini 1886; Schlömann 1896, 1898; Keane 1900, 1920; Hammond Tooke 1908; Dornan 1917, 1925; Theal 1919; Kistner 1952). The hunter-gatherers were known by these names not only in the Limpopo, but also the northern Cape and the Kalahari regions (Campbell 1815; Breutz 1958; Van Schalkwyk 1965; Ouzman 1994).

The *Masele* were commonly called slaves in the context of their subjugation by ruling groups (Stech 1885; Anderson 1888; Schlömann 1896, 1898; Greyling 1944; Breutz 1958). Missionary Schlömann (1898:66) too considered their unequal position as a form of slavery when he wrote that *[d]ie Vaalpense waren der Matebelen geknechtete, rechtlose Slaven*. In the Northwest Province numerous references to the 'Bootshuana Bushmen' suggest that, by the early 19th century, hunter-gatherers were under the hegemony of more powerful groups (Campbell 1822). Breutz (1958:49) said that the Tswana speak of their *Balala* as servants or slaves. Anderson (1888:260) likewise calls them slaves 'that have no resting-place, but roam the country'. These hunter-gatherers displayed a mixture of physical traits, but with the manner, disposition and language of the San. They were mostly nomadic with essentially a hunting and gathering lifestyle, but occasionally provided labour to farming communities (Van der Ryst 1998a).

Baines on his journey in 1871 to 1872 found a settlement with these people on the Limpopo at a place marked on old maps as Pieri's village (with alternative versions of Pierie/Peeri). The settlement was named after the eponymous petty chief (Merensky map 1875; Jeppe map 1879; Stanford map 1899). Baines made a sketch on 31 October 1871 of an ox caught by a crocodile, which shows the village in the background (Baines 1872:33-4, 1877:62-4; Burret 2006: e-comm. with photograph). Baines also wrote that goats herded by the Masarwa were sometimes caught by crocodile while drinking water at the river, which affirms a degree of sedentism for the specific groups (Wallis 1946:729-51). Accounts on hunting and gathering communities dwelling in the Limpopo Valley remarked on their different physical appearance, way of life and languages (Hammond Tooke 1908:356-60; Selous 1908:331, 335-8; Dornan 1917:42; Dart 1937:169; Greyling 1944:24; Breutz 1958:49; Willcox 1963:22). Today these

people seem to have disappeared entirely, although there are still inhabitants of the region who retain aspects of San facial features and stature (Van der Ryst 1996).

Rock art provides a means for inferring social values and ideology (Mitchell 1997:390-5). It is therefore significant that we have a compelling account of the ritual utilization of a painted shelter to the east of OBP (see Map 2). It derived from a visit by the Berlin missionary Schlömann (1896:220-1) (from the Malokong mission near Bakenberg), to an outlying station, Pusompe, established among the Seleka near the Lephalala River (Van der Ryst 2003). The Seleka are a Sotho-Tswana-speaking chiefdom. Socio-cultural and economic transformations transpired in the subjugation of hunter-gatherers until they were under the authority of African farmer chiefs and often lived at villages (Wallis 1946:729-51). Intermarriage was common (Van der Ryst 1996, 1998a, 2003). Missionary Stech (1885:390-2) wrote that a former 'slave' known as Karoline after her baptism became the wife of an evangelist at a village near the Mogalakwena River. The missionary endeavours were particularly well received by the largest group of the *Masele* who, with their chief Mantloa, were subjects of the Seleka (Schlömann 1898:66-70).

Some of the *Masele* took missionary Schlömann to a prominent mountain known as Tafelkoppe, which commands a view of the Lephalala River. The shelter, on the northwestern side, used to be a former place of prayer to them (*der früheren Gebetsstätte der Heiden von Pusompe*) (Schlömann 1896:220). The long, narrow shelter with a deep overhang contains animal figures and classic San imagery of several men in trance positions. A prominent panel shows a large figure surrounded by dancers, and in another scene 10 to 12 people are dancing in a circle (see Wilcox 1963: plate 15 & Peters 2000:figs 1-8). Schlömann (1896:221) was intrigued by a panel with a circular white motif outlined in red. Three lines emerging from an adjacent smaller circle continue for about a metre before terminating in a burst of paint accompanied by a figure in a bending position. Higher up were placed many handprints in red ochre, and also geometrics in red and white.

His escort of *Masele*, who were equally fascinated by the paintings, believed them to be made by God (*ki Modimo)* (Schlömann 1896:221). The *Masele* told Schlömann that they occupied the region long before the arrival of the African farmers. The shelter featured prominently in rituals after they settled at the nearby village. The painted locality was their last refuge when all magic

had failed them in times of extreme hardship. In circumstances when they were plagued by locusts, rain stayed away, or were under constant attack, their distraught chief gathered all the men around him and acknowledged that his powers had failed. He would entreat them to go and pray to the gods of the mountains. All the people from the village, including women and children, left at dawn to make their pilgrimage. At the shelter everyone fell down on their left side in front of the images and while clapping their hands, ceaselessly called out 'God, see us, our Father we came. See us, give us rain, we are dying, we are your children and so on' (Schlömann 1896:221). They prayed constantly throughout the day. Nothing was eaten until nightfall, when the exhausted company returned to their village. Such an investment of power into places of ritual importance appeared to have persisted, until very recently, in the Waterberg regions (Van der Ryst 1998a, 2003). Dornan (1917:37-112) in his description of the Masarwa of the Tati region on the other side of the Limpopo in Botswana gave the names of three men who were said to paint on rock with clay mixed with fat. One of them, Nshimane, 'was a great rain doctor, and was held in high estimation' (Dornan 1917:49). Aukema (1989:71) also noted, in his article on rainmaking ceremonies by farmer communities in the Waterberg, that communal rituals directed at ancestral spirits and deities were associated with rainmaking, the annual festival of the first fruits, and the strengthening of the chief and his warriors.

The rock paintings described by Schlömann were subsequently documented and presented in a MSc thesis (Peters 2000). The study by Peters demonstrated how the rock art served as a vehicle for negotiating both spiritual and political power. He ascribes some of the classic (and sometimes underlying) San images to dynamic interaction of supernatural energy with spirit entities and the supernatural realm. Others are regarded as reinvented images, which functioned in broadly similarly ways, but in response to ritual needs of farmers (Peters 2000:93). Images of trance postures, a panel with a curing dance and other concepts carrying parallel meanings, are used in support of his premises (Peters 2000:figs 1-8:plates 1-3). Geometric finger paintings at the shelter are analogous to the Geometric Tradition of the Limpopo-Shashe Confluence Area (LSCA), which is now assigned to herders (Hall & Smith 2000; Ouzman & Smith 2004; Eastwood & Smith 2005). A single white painting represents the more recent farmer art (Peters 2000:55).

Various forms and types of supernatural energy are central to the spiritual well-being of the San. Peters (2000:13-4), in applying key San concepts to explain the polysemic nature of the

imagery, uses the Ju/'hoansi terms since this group is notably well studied. Central to healing rituals and, therefore, curing dances is the harnessing and active control of boiling *n/om* potency or energy for healing. It resides, to varying degrees, in a great many animate and inanimate things (for instance honey, blood, sweat and animal fat, songs and words) (Biesele 1993:80-1; Peters 2000:15-6). The various physical and psychosomatic stages of this powerful concept have been exhaustively studied and described (Marshall 1962; Lewis-Williams 1981; Katz 1982; Biesele 1993). *N!ao* as 'a complex of ideas relating [to] atmospheric conditions, men's hunting, women's childbirth and the great meat animals', is built on opposing conditions of hardship and good fortune (Biesele 1993:81). (Note that these intangible concepts are also briefly addressed in chapter 6 where the notion of hunting luck is considered). Peters (2000:31) rephrases *n!ao* as the dynamic interaction or relationship of one's own *n/om* with a surrounding environment filled with animals, with weather, hunting and gathering paraphernalia, and also the spirits of the dead — all of which are central in the life of hunters and gatherers.

Whereas some images at this locality were produced and used in similar ways during the pre-contact phase, the bulk of the paintings was produced during times of increased social tensions and competition for natural resources. Increased ritualization and political brokering were essential as the area became increasingly contested (Peters 2000:93). The imagery of stage 2 differs from the so-called Waterberg style and postures (stage 1) (Laue 2000:figs 1-21, plates 1-6), in the sense that they are more naturalistic and 'show a greater degree of idiosyncrasy, variation in form and animation' (Peters 2000:77, 78:figs 3-5). The images of the spirit realm are implicit of ritual service and exchange, since the position of hunter-gatherers within indigenous farming communities could be maintained only through their enhanced status as powerful ritual specialists (Peters 2000:94).

The many handprints and numerous smudged paintings are ascribed to more recent site-usage (stage 3). This phase of paintings reflects a pursuance of even higher levels in the control of ritual powers (Peters 2000:96-104). Touching of paintings, which shows in worn images and smeared pigments, facilitates harnessing and/or transference of supernatural energy (Yates & Manhire 1991:3-11; Hollmann 1993:18, 21-2; Lewis-Williams1995:143-54). It is also associated with increased ritualization following on contact (Prins 1994:179-93). (See also chapter 6.6 for smearing of paintings at OBP). Rainmaking by the *Masele* is the final phase (stage 4). The increasingly formalised rituals acknowledged the rainmaking potential of the

imagery through a continuity in beliefs by a now culturally-mixed group, but without the active production of rock paintings. Spiritual and social interaction is therefore not only reflected in the imagery at this locality, but also by the use of the painted shelter as a ritual resource by different groups over time, and by hunter-gatherers themselves to broker political power with farming communities.

Numerous parallel perceptions and beliefs, which facilitated such a crossover, are evident in the cosmologies of different communities in the Waterberg (van der Ryst 1998a, 2003). It can be illustrated by Schlömann's account (1898:70) of practices by magicians among the *Masele.* They would unearth the body of christianized kin, and disposed of it in the desert or in the Lephalala River, as they believed that rain would otherwise stay away. It is entirely feasible that hunter-gatherers deliberately altered some of their belief systems (and the contents of the art) to suit the needs of farmers (Peters 2000; Van der Ryst 2003). My argument that some *Masele* themselves produced some of the more recent art in the Waterberg (Van der Ryst 2003), is borne out by observations on groups of mixed descent. Offspring of such marriages took an active part in painting episodes (How 1962:31; Jolly 1995:69). A well-known example is that of Mapote, who told How (1962:3) that 'he and his half-Bush stepbrothers ... used to paint at one end of the cave whilst the true Bushmen painted at the other'.

By the time of Schlömann's visit hunter-gatherers in the Waterberg region were culturally mixed and dispossessed of their land. The acknowledgement of hunter-gatherers as ritual specialists was often based on fear and the desire of newcomers to counteract the perceived dangerous powers of the first owners of the land (Schlömann 1898:70; Burkitt 1928:120; Katz *et al.* 1996:12; Schoeman 2006:256). The role of painted shelters and the position of hunter-gatherers as intermediaries and ritual specialists in power-related ceremonies — especially rain production — are central in post-contact social relations (Schlömann 1896, 1898; Loubser & Dowson 1987:51-4; Prins 1990:110-16; Prins & Lewis 1992:133-47; Jolly 1995:68-80, 1996a:277-305, 1996b:30-61; 1998:247-67, 2005:68-100; Ouzman 1995:55-67, 1996:31-59; Hammond-Tooke 1998:9-15, 1999:128-32; Kinahan 1999:336-57; Hall & Smith 2000:30-46; Peters 2000:5-100; Van Doornum 2005:3-4,15-6; Schoeman 2006:255-7).

2.7 CONCLUDING REMARKS

This introduction to the last remaining groups of hunter-gatherer extraction in the Waterberg demonstrates their integral position in the prehistory of the region. Archaeological excavations

supplemented with documentary evidence informed us on how they negotiated their relationship with other groups over time (Van der Ryst 1998a, 2003). The contents of this chapter also serve to provide some context for the site and a structure for the forthcoming chapters. OBP has particular attributes that positioned the site to feature as an enduring place within the wider landscape. The ethnographic, historical and other data detailed in the above section suggest a fundamental role for the shelter in constructing the past history of the Limpopo region, and underpin the archaeological investigations. The archaeological findings, to be subsequently discussed, expand on the present data base. In addition, the excavations produce a more fine-grained narrative which informs on the social, economic and ideological arrangements of the people who inhabited the region over the last 2000 years.

Shott (1998:310) argues that the past cannot be reconstructed, but that we make inferences from data which are directly observed in the present. The following chapter presents the methodology used in the excavations with emphasis on the stratigraphy, and also the character of the assemblage. The stratigraphic succession will be correlated with the suite of dates obtained. I demonstrate that site formation processes, which influence the character of any recovered assemblage, also impacted on the anthropogenic-derived deposit at OBP. The organization of the shelter space is then detailed taking into account patterning in artefact distribution and habitation features such as fireplaces.

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THE RESEARCH PROJECT: METHODOLOGY AND EXCAVATIONS

> The material record is archaeology's mixed blessing, at once registering cultural meaning and process on a vast time scale and posing daunting interpretive problems (Shott 1998:299).

3.1 INTRODUCTION

The rationale and framework for the project were introduced in chapter 1. In previous chapters I pointed out the importance of OBP as one of only a few large shelters in the Waterberg. The discussion in chapter 2 included an overview of the results of the preliminary excavations conducted by Mason in the 1950s. His excavation of a test trench and my own subsequent explorative excavations established that OBP has a representative Stone Age sequence. The uppermost layers contain evidence for interactive relationships with immigrant farming communities, and possibly also herder groups. The locality is therefore eminently suitable as a starting point for exploring the Stone Age history of the region, and also social and economic relations between hunter-gatherers and new groups moving into the region. In addition, various other occupied shelters, rock art localities and Iron Age sites were investigated and the survey of the Waterberg accordingly expanded (Unisa unpublished field notes Aukema, Boeyens & Van der Ryst).

Six periods of excavation were undertaken since 1997. The preliminary investigations aimed to establish the extent of the shelter deposit, the stratigraphy and cultural chronology. A test trench was excavated until bedrock was reached at a depth of approximately two metres. The excavation grid was subsequently extended to include an additional area of 25 square metres with the aim of exploring the LSA occupations in more detail and to recover a more representative assemblage (see also 3.4.1 and 3.4.2.1 for a discussion of the grid and stratigraphy respectively). The subsequent excavations were continued until the interface between the LSA and MSA occupational levels was satisfactorily established. The long term continuation of the project into the extensive MSA levels does not form part of the present study.

Radiocarbon dating procedures, which included AMS, were used on selected archaeological samples of wood charcoal, carbonized seeds and OES fragments. The lithic component constitutes a major part of any Stone Age assemblage. A comparative approach was applied in resolving the chronology and typology of the artefact sequence (Deacon 1984a, 1984b; Wadley 1987, 1993; Blankholm 1996; Andrefsky 1998). Since foraging populations do not fit

into a single pattern, there is evidently variability among Holocene subsistence strategies (Sandweis 1996; Mitchell 1997). In the discussion such regional technological (and functional) variations in the OBP, Waterberg Plateau and Soutpansberg sequences, are pointed out.

A selection of 63 stone tools from the OBP LSA levels was submitted for plant, animal and mineral residues analyses (Williamson 2000, 2006). My objective was to investigate possible differential use for different scraper classes, backed bladelets, segments and other formal tool types. The results are included in chapter 4 where the lithic component is discussed. Sediment samples for comparative purposes were collected throughout the excavation and used in the edge-wear studies. Analysis of residues and wear patterns of lithic rings provided some data on possible function and meaning (Lombard 2001, 2003). Similar rings form part of a relatively large number of archaeological assemblages and their particular functions have not been adequately resolved (Goodwin 1943). The findings from the analysis of the lithic rings are reviewed in chapter 4.

Analysis of the faunal remains from the test trench provided a basis for the faunal suite (Beukes & Lombard 1997). Subsequent excavations generated a large sample of fauna, bead and shell decorative items as well as a range of bone implements spanning the last 2000 years. The faunal assemblages were processed by archaeozoologists (Beukes 2002; Hutten 2006). The analysis of anthropogenically assembled archaeobotanical remains and macroscopic plant materials, introduced through various other agencies into the deposit, was undertaken with the assistance of an archaeobotanist (Sievers 2006).

A relative large assemblage of pottery representing five facies was recovered from the more recent occupation levels. The preliminary classification of the ceramics into various traditions was verified with the assistance of Iron Age archaeologists Tom Huffman and Jan Boeyens. A more detailed analysis was undertaken by Karim Sadr (2003b) and Wim Biemond (2006a) respectively (see also chapter 7, where the ceramics are discussed).

The following discussion centres on the excavations, including the methodology, stratigraphic sequence and varied processes that contributed to the formation of the archaeological record at OBP. A detailed site report, site plans and diagrammatic stratigraphic sections form part of any archaeological investigation. Only representative samples of the recovered lithics and

other cultural material are illustrated. Tables of inventories, site plans and profiles, which forms the bulk of the data base, are available. The tracings of selected rock art panels were made by the Rock Art Research Institute of the University of the Witwatersrand. Ben Smith and Ghilraen Laue of RARI contributed towards the identification of the various rock art traditions. Ed Eastwood also commented on the redrawn panels.

3.2 THE SITE

3.2.1 General features of the site and the excavations

A general description of the shelter, which includes detail on its setting within the landscape, is provided in the foregoing chapter 2. The stratigraphic sequence comprises an apparent ephemeral ESA as evidenced by two large cutting tools that were recovered from the test trench amongst large rocks and smaller stone rubble, which accumulated on the basal sandstone floor. Mason similarly recovered a few large ESA bifaces, discussed in chapter 2. The extensive and comprehensive MSA precedes the LSA units. Ceramics and exotics in the uppermost deposit relate to interactive relations with indigenous farming and other communities. The subsequent extended excavations proceeded up to the interface between the LSA and the MSA. The MSA character of some lithics from the base of the LSA layers suggests that the LSA is directly underlain by MSA occupation levels. Definite marker horizons are present in the LSA occupation deposits. Transitional traits are evident in the lithic assemblage in specific areas and levels, in particular around the interface between the LSA and MSA. It is again emphasized that the focus of this study is on the last 2000 years of hunter-gatherer history and that the remainder of the excavated LSA succession does not form part of the discussion.

The relatively narrow shelter space extends over approximately 70 metres. The broadest space under the overhang is not more than 7 metres deep. The shelter contains approximately 50 metres of *in situ* horizontal archaeological deposit. The deposit gently slopes from the dripline onto a relatively extensive, and in places quite steep, talus. The section of living space abutting the talus contains high densities of artefactual material, rock spalls and larger blocks of stone. Some of the stones in this space were imported as objective pieces for anvils, lower grinders and nutting/crushing stones. Archaeological materials are apparent on the present surface and also exposed along the eroded dripline. The squares abutting the shelter wall are particularly rich. This section of the site contains fireplaces, abundant charcoal and ash

deposits, as well as vegetal organic remains including high frequencies of carbonized seeds. The inner area would have been less prone to human traffic, which result in damage to the deposit and scuffing of objects (Balme & Beck 2002:157). The recovered materials were analysed taking into account the particular utilization of space in relation to the shelter morphology, cultural behaviour, biogenic activities, and also chemical and mechanical processes, which resulted in the formation of the OBP deposit. The archaeological record is the product of multiple variables and site-specific processes and each site has to be examined in terms of its particular context (Woodward & Goldberg 2001:340).

The most pronounced structural features are the series of linear fireplaces along the back wall of the shelter. A more rigid use of terminology in describing fire features according to their construction and frequency of use, is advocated (Wright 2004/5:36). Terms applicable in this study are primary fireplaces formed of earth discolourations from repeated burned events, which contain burnt soil and ash, but no stones. Fire patches where single burning events left mainly flat patches of discoloured earth are linked to special-activity and expediently used fires. Less frequent are fire pits, which consist of hollowed-out depressions filled with burnt deposits and ash, and which are also not marked by stones (Wright 2004/5:36). No fire pits were identified at OBP. Fireplaces are discussed in more detail in subsection 3.6 under intrasite spatial patterning.

3.2.2 The talus

The configurations of a site, including the dripline, slope and degree of sediment compaction affect not only preservation, but also spatial patterning (Balme & Beck 2002:157). The talus area at OBP currently has thick vegetation cover including several big trees between rocks and some boulders. The squares abutting the talus contain very large volumes of lithics — tools and waste. Dumping of discards and manufacturing waste is common in talus areas. Even at open camp sites any large obstructive pieces of waste are generally immediately discarded (Keeley 1991:258). Site maintenance with disposal of clutter is even more essential in a restricted shelter space. Downslope movement would have carried most of the material away, effectively preventing the buildup of a well-preserved talus. The relatively steep gradient of the talus slope precludes preservation of stratified archaeological deposits. The topography of the talus also limits its use as a focal activity area. Data on the outer boundary of discards suggest that most excavations are too limited to cover representative areas of discard (Bartram *et al.*

1991:139). Since the talus at OBP was not investigated, the recovered assemblage from the outer perimeter squares likely denotes only a fraction of the material generated through production activities in this space. The archaeological data from OBP were recovered from selected units, which is a consideration in virtually all excavation programmes. The findings consequently represent merely a sample of behaviour and not a full range of activities.

3.3 SITE FORMATION PROCESSES AND POST-DEPOSITIONAL DISTURBANCES

Bar-Yosef (2001:476) says that we need to know 'more about the processes responsible for the accumulation of what we excavate'. Archaeological excavations recover assemblages from contexts created by formation processes. Accumulated deposits at all archaeological sites are to some extent subject to natural and cultural taphonomic processes. Cave and shelter soils are modified by events taking place subsequent to deposition. These include primarily addition of cultural debris introduced by humans, fauna accumulated through predator and small mammals activities, roof fragmentation spalls, windblown materials, and also chemical and mechanical processes (Tankard & Schweitzer nd:295). There can be great diversity in the natural and cultural depositional and post-depositional mechanisms affecting archaeological materials from the time of deposition to the moment of excavation (Sandweis 1996; Henry *et al.* 2004). The complexity of formation processes is demonstrated by ethnoarchaeological studies conducted among recent hunter-gatherers (Bartram *et al.* 1991; Kent 1991, 1998; Nicholson & Cane 1991).

Soils form over time through the action of climate and living organisms upon parent material (Paton *et al*. 1995:2). Human activities account for the largest volume of fine-grain soils building up in an enclosed area, such as shelter or cave living sites. Domestic waste from food processing and cooking, and in particular wood charcoal and ash (Balme & Beck 2002:159), is the main formation agent in such a setting. Mineralogical studies at cave sites confirmed major contributions of ash derived from brought-in firewood, branches, leaves and bedding, to the volume of preserved sediments (Bar-Yosef 2001:477). Fine sediments are also imported with wet carcasses (Woodward & Goldberg 2001:339). Soils, and their associated organic matter, form in the parent sediments only after deposition (Stein 1992:197).

The decomposition of organic materials brought onto a site formed the greatest volumes of the fine matrices. The bulk of organic matter in archaeological contexts are clastic sediments,

including bones, charcoal, shells, seeds or decomposed residues imported through human subsistence activities. Biological sediments are transported by an organism's own movement, whereas chemical sediments are transported in solutions (Stein 1992:195). Whereas some organic matter is therefore introduced with occupation, weathering accounts for appreciable amounts. Organic matter breaks down from fresh tissue into amorphous humus and soils (Stein 1992:197). Escaping carbon dioxide and soil solutions result in a loss of organic matter during decomposition. Without further depositional events any organics are reduced to only the most resistant humus over time. Water allows decomposition at an increased rate and produces organic acids as by-products. A lack of water or oxygen, or extreme climatic conditions, slows down the process and promotes the preservation of organics (Stein 1992:198-201; Reitz *et al.* 1996:48-50).

Anthropogenic disturbances result in the loss or destruction of cultural material and also alter the integrity of living areas and specific levels. Diverse activities are responsible for such alterations, ranging from cleaning out of fireplaces, sleeping areas and activity areas, to trampling of the deposit. In preparing sleeping hollows near a fireplace, the earth or ash accumulation is scooped out (Dornan 1917:47, 1925:91-2; Marshall Thomas 1959:196; Arbousset & Daumas 1968:251-2; Yellen 1977:143-4). At OBP several sleeping hollows lined with plant materials near fireplaces intruded into underlying living floors. Also, movement on the mostly very fine ashy deposit at OBP probably caused some slumping and mixing.

Experimental studies at settlements of the !Kung-speaking Ju/'hoansi have shown that smaller objects are more prone to downward movement (Yellen 1977:103). More energetic endeavours, such as dancing associated with ritualized behaviour, certainly impacted on a living floor. In the Kalahari continuous circling of dancers formed a hollow in the soft sand. Marshall (1959:135) described the aftermath of such a dance among the Ju/'hoansi: '... everyone had drifted away, leaving only the children wheeling slowly around the track worn by the dancer's feet ...'. At OBP the extreme sensitivity of soft ash deposits was demonstrated in the crumbling of unstable excavated sections when pegs for extending the grid were positioned. Patterns of discard behaviour, such as expedient cleanups of hearth areas and the tossing of tool manufacture and maintenance debris, moreover, result in the conflation of activity areas (Keeley 1991:257-8; Stevenson 1991:274). At OBP a degree of vertical displacement is evident from the patterning of ceramic distributions whereby pottery facies do

not always conform stratigraphically with the ceramic succession (see chapter 7).

The most resistant and visible waste contributing to soil formation at OBP was microdebitage generated through stone tool manufacture. Lithic tools and waste commonly account for the bulk of the archaeological materials. At OBP spatial emphasis on manufacturing and maintenance activities in the open zone behind the talus resulted in the deposition of large amounts of stone waste, and also the formation of high-density clusters of lithics (see also 3.6 for detail on spatial site structuring). Heavy pieces, such as anvils and grindstones that were imported onto the site, also cluster in the more open area. The dark coarse-textured soils here are very different from the ashy deposit at the rear end of the shelter where the more private activities around fireplaces were scheduled.

Recent human activities at the shelter probably effected most damage, since visitors trampled deposits and also defaced the paintings. Graffiti with dates from the 1950s reflect the extent of these intrusive activities. Most disturbances were fortunately confined to the already disturbed area where Mason also situated his test trench. Mason (1989:fig.26), moreover, camped inside the shelter during his investigations. A former landowner backfilled Mason's test trench with river sand. He also brought in large stones to cover the area. This space was subsequently used for camp fires by casual visitors to the shelter, which resulted in a charcoal spread over a large surface area.

Macroscopic plant remains include significantly large amounts of plant fruiting structures and also woody remains introduced into the shelter sediments. Once deposited, seeds and other plant waste form decomposed residues, or may be preserved through desiccation, mineralization, or carbonisation from burning events (Stein 1992; Hansen 2001). Dense concentrations of carbonized seeds were deposited within fire places and surrounding space. The area against the shelter wall is sheltered from in blown rain. Tools made on organic materials were mainly recovered from the upper levels within this space. Examples are wooden objects including sections of fire drills, a sharpened peg and a digging stick fragment. The main agents for post-depositional introduction of plant remains were baboon dung, porcupine droppings, and nesting materials brought in by small mammals. Natural processes account for fruiting structures from trees within the immediate area, which were wind-blown or dropped into the deposit (see Appendix K for the archaeobotanical analysis; and F:131 for the UCA).

Bioturbation is significant in the formation of any archaeological record. Interaction between animals, plants and soil materials alter soils through additive or subtractive processes (Grave & Kealhofer 1999:1240). Bioturbation as a major source of site modification causes displacement of cultural materials, especially in fine ashy occupation strata, which typically accumulate in shelter and cave sites. Archaeologists generally investigate stratigraphy, features and artefacts to assess the impact and extent of bioturbation processes on a specific archaeological deposit (Grave & Kealhofer 1999:1240). Issues to be addressed when accessing the impact of post-depositional biogenic activities, i.e. produced by living forms at a specific archaeological site, include the identification of burrowing, the agent (the species and lifestyle), the ethology of the agent(s) involved, and lastly, the temporality of such activities at the site (Fowler *et al.* 2004:448-9). An assessment of the role of the agent(s) has a prime bearing on the assessment of the archaeological integrity of a site.

In applying the above criteria, it became clear that rodent activity was the primary destructive agent at OBP. Disturbances effected primarily by burrowing animals usually occur throughout accumulation of deposits (Paton *et al.* 1995:65; Abbott 1997:332). Gnaw marks provided detail on primary agents that contributed to the excavated assemblage at OBP. Analysis of the faunal sample found 10 identifiable fragments with carnivore gnawing, whereas rodent gnaw marks were present on 40 identifiable elements. Combined rodent and carnivore gnawing is present on 80 unidentifiable fragments (Beukes 2001). Carnivores and reptiles, including lizards and tortoises, chew faunal elements from archaeological contexts. However, in most faunal assemblages grooved marks on bone result from gnawing by rodents since their incisors, which continue to grow throughout their lifespan, are aligned by sharpening and wear (Reitz & Wing 1999:134).

Post-depositional modification probably accounts for most of the gnaw marks on the OBP sample. Exposure of surface (or near-surface) fauna for any length of time during uninhabited intervals commonly results in gnawing by rodents(Reitz & Wing 1999:134-5). Predation results in the loss of material and also moves faunal elements. Although the OBP deposit was doubtless in the past affected by biotic activities during non-occupation phases, activities of burrowing species were particularly noticeable between excavation seasons. Geotextile, which was used for sandbags and to protect the exposed site surface, provided favourable conditions for nesting activities and shelter to rodents, hibernating reptiles and insect species. Small

rodents constructed tunnels under the fabric and into exposed sections. Leaf matter was introduced into the deposited for nesting, and also a birthing den. Tunnelling caused the collapse of some sections, especially in the area that abuts the shelter wall.

Data on the role of vertebrates in bioturbation, and in particular birds, are inadequate (Paton *et al*. 1995:56). It is probable that the fine, soft deposit was disturbed to some extent by the numerous ground birds that frequent the shelter. Soil bathing and the raking of leaf litter by francolin have been observed. A python capitalized on the enclosed shelter provided by the tarpaulin that was used as a protective covering before the construction of a semi-permanent roof (see Appendix N for the structure). Hibernating frogs were responsible for a couple of shallow basin-like features made underneath the geotextile. The faunal analysis also found evidence for fresh intrusions from frogs, porcupine and rodents in the more recent levels, confirming that bioturbation processes are ever present.

Minor surface disturbances were caused by dung beetles (*Coleoptera* spp.). The modern surface also contained dung patches from infrequent recent use of the shelter by livestock. The movement of these large animals onto the deposit undoubtedly resulted in some compaction, trampling of objects and lateral as well as vertical mixing of archaeological remains. These activities were confined to only one section of the site.

Termite and ant activities do not always manifest in any recognizable superstructure (Paton *et al*. 1995:41). They mould structures from soil and organic matter, which result in some reworking of the deposit (Paton *et al*. 1995:44). At OBP evidence for termite activity was restricted to a few areas. It is extremely difficult to assess the extent of bioturbation damage caused through reworking of the deposit at OBP. Displacement and mixing of materials were likely when compacted patches of reworked termite soils collapsed on exposure into subsurface galleries.

Post-depositional residues, such as mycohyphae and rootlets that were identified on tools during the residue analysis of a selected sample of lithics, suggest a relatively undisturbed deposit (Williamson 2006:3). The relative importance of plant root disturbance is very small because there is no plant growth on the bulk of the ashy deposit. The very superficial

development of mostly weeds on the dripline after rains was controlled with organic-based chemicals in the unexcavated area. Weeds on the dripline along the grid were removed by hand. Root wedging and stem growth, which result in minimum vertical and lateral displacement (Paton *et al.* 1995:64-5), were at OBP only present in squares abutting the talus. Hair roots were a particular feature of the dark humic soils in this area.

The deposit in the rear part of the shelter is considerably drier than in the squares fronting onto the open talus end. Heat from fires and the microclimate in this section, as well as an ashy consistency of soils, contributed to accelerated desiccation of organics, promoting their preservation. Organic remains from this area include rind fragments of *Strychnos* spp. and several wooden objects as well as infrequent bedding remains. A cache of pegs for hide working activities was also discovered among large stones in the northern rear section of the shelter (see chapter 6 for a discussion, and Appendix N for illustrations).

Erosion and leaching, which result in differential mobility of breakdown products, represent the main mechanical disturbances at archaeological sites (Paton *et al*. 1995:12; Sandweis 1996:131). Water action at OBP constitutes a major (and ongoing) altering agent. Chemical transforms are caused by water passing through sediments, which dissolve organic and inorganic materials (Karkanas *et al.* 2000:916). Carbonate, being extremely mobile, is usually leached from surface deposits (Reitz *et al.* 1996:50). At OBP water filtering downwards removed carbonates from the upper levels. Evaporates in deposits and on tools suggest initial damp conditions, followed by aridity (Wadley 2006:pers. comm.). Sedimentation change resulting from water runoff continues at a slow rate at OBP. Water introduced from the open side collects in the middle section where gradual vertical percolation through substrata causes cementation and carbonate encrustation on cultural materials. This is particularly noticeable in the recovered assemblage from the central squares (see UCA diagrams in Appendix F). Marked differences in frequencies of lithics and faunal remains can be ascribed to not only spatial structuring of activities, but certainly also post-depositional processes. Carbonate encrustation inhibited preservation and also identification of especially faunal. Extremely hard carbonate coatings on lithics from these squares could only be removed through soaking in a weak acid solution.

The main water impact is commonly from rain and sheet wash (Paton *et al*. 1995:69-70; Abbott 1997:328). Rain wash is also responsible for the transport, sorting and redeposition of near-surface materials (Paton *et al*. 1995:69-70). At OBP rain splash introduced from the exposed side was observed to collect laterally and then filter downwards. The geotextile protective cover used between excavations resulted in a more gradual percolation. At OBP significant sheet wash deriving from the valley above the shelter (even after slight rains) poured over the shelter roof onto the deposit. The runoff produced markedly greater soil erosion in the open side on the talus, and also introduced exfoliated sandstone and other rubble into the deposit.

Water dripping from a cave or a shelter ceiling also contributes towards cementation and erosional features (Karkanas *et al*. 2000:916). At OBP these processes over time leached out virtually all soluble constituents in the front section, which resulted in dark humic and homogeneous deposits. A lag deposit, resulting from the reduction of sediment volume in the section abutting the talus, impacted on the stratigraphy of the site. The very large volumes of stone material from manufacturing activities contained in this section, together with water runoff and rain splash causing alteration and loss of fine-grained materials, resulted in differential removal of soil constituents and preservation across the grid (see also Appendix N where a photograph of an excavated level illustrates the differential site composition.)

Examples of geomorphological disturbance at the site are infiltration from the deposition of mainly detached roof blocks, and also wall sections. Ongoing processes contributing to sediment formation at OBP are the decomposition of sandstone clasts from spall fragments, as well as the weathering of bedrock. It is especially clear in deposits against the back wall, where occupational debris accumulated on flat and shallow sandstone ledges, which protrude into the living space. When uncovered, the rotten sandstone soon starts to disintegrate. Spalling events are prominent at the shelter around the interface between LSA and MSA occupational levels. Apparent occupancy hiatuses in the OBP sequence after 11-7300 BP (GrA-20891 and GrA-20892), and again at approximately 14 000 BP (Pta-8662), are confirmed by units containing mainly roof spalls. This is parallelled by cooler conditions (Scott *et al.* 1997:70) leading up to the LGM, when the area was presumably sparsely populated or

abandoned. The sharp edges of roof spalls in levels underlying the LSA deposits and in the MSA levels are a feature of mechanical, and not chemical, release from the roof through episodic weakening and collapse (Tankard & Schweitzer nd:297; Henry *et al.* 2004:20).

Post-depositional processes unquestionably impacted on the composition of the OBP archaeological assemblage. The many site-altering processes and problematic issues described in the above section were considerations. However, data from the excavated assemblage suggest that the OBP deposits have relatively satisfactory stratigraphic and spatial coherence. The main destructive post-depositional agents, including rodent burrowing and termite activities, were isolated events. Some collapse of sections was caused by tunnelling of small rodents into the soft ashy stratum.

3.4 EXCAVATION AND RECORDING METHODOLOGY

3.4.1 The grid

A grid divided into 1 metre squares was superimposed on the deposit along a datum baseline of 26 metres fixed along the Y-axis (see site diagrams). The excavation grid was placed in an area suitably removed from Mason's excavation. The grid was positioned to include some of the remaining sheltered (and probably preferentially utilized) space under the greatest roof overhang. The datum baseline was marked by droppers placed at 1 metre intervals in cement bases numbered alphabetically. On the X-axis the grid was permanently fixed onto the back wall of the shelter with expanding ringbolts, which allow accurate and easy attachment of gridlines. The installation of a permanent grid system was facilitated by Francois Coetzee (Unisa) and Sidney Miller (an independent contractor). A semipermanent roof was constructed by Miller to protect the exposed deposits and in view of future investigations. He also constructed a stone-built wall to contain the screened waste. Wim Biemond and Jacques Hattingh, both of Unisa, constructed an extension to the roof. Early in January 2006, extensive rehabilitation of the excavated area was undertaken before the extended structure, designed to cover the total expanse of the excavated area, was erected (see photographs in Appendix N).

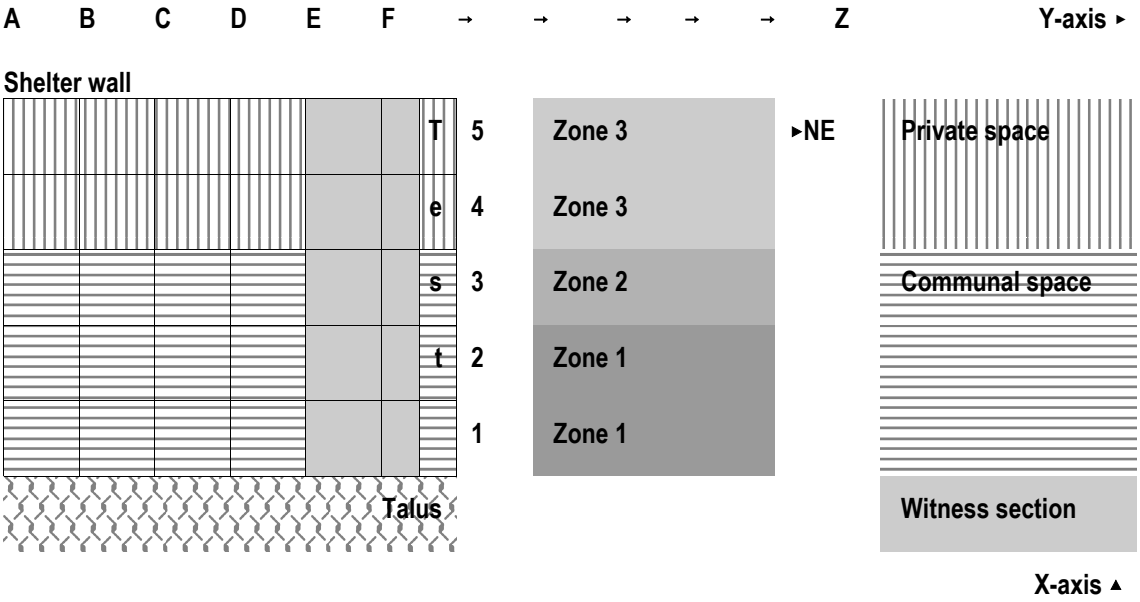
The Y-axis was alphabetically numbered and the X-axis numerically. Excavations were initiated in the F squares of the grid, because this was the area closest to Mason's excavation, but sufficiently removed to avoid likely disturbances. A test trench of 500 x 5 metres was

excavated until the basal bedrock was reached at a depth of approximately two metres. The excavation grid was subsequently extended to open up an additional area of 25 square metres. The soft, dry deposit is unstable, and especially ashy deposits occur against the shelter wall. Test trench F was accordingly backfilled after establishing basal bedrock. On expanding the excavations from square F, a control baulk was maintained that includes the remaining 500 mm of square F and another metre comprising square E in the grid. The resumed excavations extend from squares D to A in the grid. A relatively extensive witness section was deemed necessary in view of the long-term aim to continue with the expanded excavations. This has the unfortunate effect of removing a unit from the excavation. Blocks of contiguous units generally sample discrete activity areas (Reitz & Wing 1999:119).

Numbering of the X-axis starts with squares one, which front on the open talus. Squares numbered 5 on the grid, which abut the back wall of the shelter, contain frequently less than 1 square metre because of basal near-surface rock. The broad arch of the shelter was scoured out in the thick-bedded Waterberg sandstone by water action and the basal rock flattens out in ledges extending from the wall rock into the living space. The ledges are not uniform due to differential weathering of the sandstone bedrock, which created an undercut (Henry *et al.* 2004:20). Deposits accumulating on the floor space accordingly differ in their expanse in relation to the degree of intrusive rock, especially in the A5 squares.

A diagrammatic representation of the excavations is now provided to facilitate the discussion of the excavations:

Schematic representation of the grid



The grid was excavated according to the squares indicated above. A square was divided into quadrants when necessary for recording contextual information. The contents of quadrants were not always separately sieved and bagged. This procedure was followed during a previous project on the Waterberg Plateau sites, but was not observed to the full extent in view of time and labour constraints. The following diagram shows this division.

Schematic division of a square into quadrants. The division is oriented towards the open side of the shelter.

A	B
C	D

3.4.2 The excavations

A general descriptive stratigraphy is provided in view of the relative homogeneous nature of deposits and also the characteristic compositions of soils. The excavation is discussed as a unit, incorporating data from the test trench. This allows for a more coherent description and understanding of the composition of the deposit and spatial trends. Distinctive changes and distribution patterns are remarked upon for each level. More detail on the stratigraphy is

provided in the site plans and stratigraphical sections at the end of Volume 1 of the dissertation.

The natural stratigraphy is extremely difficult to define. Different habitation phases are not distinct in terms of colouration or sterile lenses. The above discussion and also data on the formation processes active at OBP demonstrated the nature of the deposit and inherent constraints. The deposit was dug in arbitrary levels of 50 mm within an excavation block, controlled by grid units. The soil was removed from consecutive spits until the excavated area reached the interface between LSA and MSA occupation levels. Within these arbitrary levels any distinct occurrences and lenses were independently investigated by using a combination of arbitrary and natural strategies. The material retrieved from discrete features and from clearly discernible fireplaces were separately excavated. The contents were also separately bagged and analysed when deemed necessary to demonstrate changes in the classes of material in and around fireplaces. The levels from the last 2000 years, extending to a depth of approximately 1000 mm, are now discussed in more detail. Soil samples were taken from all levels across the grid. A Munsell (1998) colour chart was used for detailing changes in the soil.

3.4.2.1 Summary of stratigraphic composition

The modern surface was cleared of windborne plant material and foreign matter. This level was obviously more coarse and darker than subsequent levels through the inclusion of humic soil. The depth, because of a gentle slope, varied between 10 and 50 mm. Some evidence for contamination includes cattle dung, bottle glass and a sherd of an earthernware vessel. The first buckets of excavated materials contained mostly plant material, such as leaf litter, coarse decomposed plant matter and twigs. The inherent threefold zonal division across the living space and grid, was reproduced throughout the sequence, but obviously with some change in the extent and with lenses that are clearly different in colouration, texture and contents. The above schematic representation of the grid includes a broad zonal division with the following characteristics:

ZONE 1

The squares on the open talus contained large volumes of lithics as indicated above. This space clearly served as a focal point for tool production and maintenance. The tossing of large

objects (Binford 1978:338-48, 355, 1983:149-56; Carr 1991:230-40; Keeley 1991:258; Nicholson & Cane 1991:267; Mitchell *et al.* 2006:90) probably contributed to accumulated deposits. Throughout the sequence ceramics and fauna from this space were generally larger than those retrieved from other squares. The soil between the stony matrices is homogeneous with medium to coarse pellet-like texture. The very dark soils in this space have high humic contents. It is clearly a lag deposit resulting from water action over time (discussed with site formation processes under 3.3). Towards Zone 2 the deposit begins to exhibit a more ashy consistency with a brown-grey colour. An ash smear from the fireplace areas, which are positioned in a linear formation parallel against the shelter wall, extends across the site to the fringes of Zone 1 on the talus.

The largest volumes of haematite were recovered from Zone 1. Since haematite is ubiquitous, only clear trends in frequencies or in the size of chunks are discussed. Quartz crystals are also abundant throughout the sequence. Data on volumes, mass and frequencies are provided in appendices A to F.

Damage caused by root infiltration from surface growth is superficial and essentially limited to weeds with intrusive hair roots. Several lateral, and mostly fleshy roots, from shrubs on the talus including tree nettle (*Urera tenax*) extending into the eastern section of the grid, are accompanied by slight soil displacements. Post-depositional bioturbation processes are mainly restricted to the more sheltered Zone 3.

ZONE 2

Zone 2, as the central section, comprises squares numbered 3 in the grid (see site plans). The deposits in the middle zone gradually changes to a more ashy consistency in areas bordering on fireplace deposits in Zone 3. The soil texture, which is generally more granular, derives from proximity to Zone 1. The deposit begins with a soft, ashy consistency in the upper levels, changing towards coarser, granular textures. Soil colour, which is variable in the upper layers, is mainly a uniform grey in underlying levels. Percolating water and leached calcium carbonates caused chemical cementation and encrustation of artefacts and fauna, discussed with formation processes under 3.3. Volumes of accumulated sediment are reduced by the removal of ash constituents (Karkanas *et al*. 2000:916). The lower relative volumes recovered from the middle section suggest similar effects at OBP. Post-depositional transforms are more

apparent in layer 6, and masked or obliterated details on artefacts. Chemical action cemented ash deposits, bone and lithics into amorphous or angular chunks. In underlying levels these processes severely impacted on retrieval of small objects, especially beads. The degree of cementation inhibited faunal analyses (Beukes 2001). Comparative figures confirm marked differences in all classes of material in the underlying older occupation levels (see UCA diagrams, Appendix F). Recovered fauna sustained progressively greater damage from weathering and demineralization. The fauna sample became demineralized with cracking and flaking of the compact bone (Reitz & Wing 1999:137-9).

ZONE 3

The consistency of deposits towards and against the shelter walls are almost pure fine ash. There are no formal hearth structures. Evidence for fireplaces along the sheltered wall space derives mainly from dense pockets of carbonized seeds and charcoal from within ash surrounds. The uniform fine ash does exhibit variability, grading into ash lenses with differential colouring. Colour changes mainly correlate with relative distance from actual fireplaces. The ash deposit exhibits a fan-like pattern, with colours grading colouration from very dark, with white patches, into a reddish pink or orange tinge, fading into grey-white. Red colouration generally develops through from burning events (Roskams 2001:175). The very dark central section of fireplaces relates to high frequencies of carbonized seeds and of charcoal. Disintegrating sandstone ledges (discussed under 3.3), which extend into occupation deposits, account for a coarser texture in patches, and also in different levels.

The bulk of plant fruiting structures, OES fragments, blanks, unfinished and complete beads and decorated OES as well as significant numbers of worked bone, originated from Zone 3. The sheltered aspect promoted preservation of some classes of organics, evidenced in intact bedding patches and implements made on wood. The fauna from this zone is generally splintered into fractions of a size that inhibits identification to species level. Fragmentation of fauna occurs at all stages, from the initial procurement through butchering, food processing, tool production, and also through post-depositional trampling and weathering (Reitz & Wing 1999:138-9).

This area also sustained most of the post-depositional bioturbated damage. This was particularly noticeable when the geotextile covering was removed in resuming the excavations.

Termite activities were also more prominent in this zone, and extended into the central section, where it resulted in more compacted lenses, which collapsed on excavation into small hollow chambers underneath.

Surface layer

ZONE 1

Leaf litter and other debris are removed. The underlying deposit is a dark, humic loose soil with a medium to coarse texture. There is some evidence of root wedging from fleshy roots of mountain nettle in the F squares. Fibrous, potentially more destructive roots intrude into the eastern sections of the extended grid. Cultural material is sparse.

- The fauna includes small fish bones
- Several OES beads and fragments are present
- The small ceramic sample contains fragmentary Bambata sherds.

ZONE 2

The soil is a grey-brown with a more ashy consistency.

- The faunal material is fractured
- Low numbers of lithic debitage is indicated
- The herringbone decoration on some pottery is typical of the Eiland/Broadhurst facies

ZONE 3

In this area the modern surface material continues in pockets to a depth of slightly more than 500 mm. This illustrates the extent of differential deposition between zones, since materials carried in by wind and animal activities are more quickly removed from the less sheltered open areas near the talus. The ashy deposit is again grey-brown in colour, with a lens of white ash in the southern corner of the F5 square. There is clearly more charcoal. It is already apparent that Zone 3 contains more occupation debris from hearth-centred activities.

- The lithic material consists mainly of debitage
- The faunal sample includes fish taxa
- There are several OES fragments and beads
- An OES fragment is decorated with a drilled pattern
- 1 Bambata potsherd is recovered from D5.S
- The find is accompanied by two black glass beads from D5.S

Layer 1

ZONE 1

The deposit is now relatively darker with considerable quantities of decomposed plant

materials. The consistency of the gritty dark-brown humic soil is very soft up to approximately 100 mm. Plant roots and rootlet intrude from the talus area. This zone contains the bulk of faunal remains. The bones in this space are less fragmented than the fauna recovered from around fireplaces.

- Charcoal is not abundant
- The lithics are still sparse
- Fauna elements include fish bones, baboon molars and freshwater molluscs
- OES fragments and beads
- Decorated OES
- A grooved stone [A2.1]
- Worked bone implements: bone awls, arrow point and link-shaft components
- A piece of slag is present in B1.1
- Several pottery sherds with decorations, and one with an applique knob, are recovered
- A1.1, A1.2 and B1.1 contain most of the ceramics

ZONE 2

The soil is grey-brown with an ashy consistency. The deposit grades to a lighter hue towards Zone 3.

- Two baboon molars are present in C3
- There are again OES fragments and several beads
- This area also contains decorated OES
- Worked bone sections
- 2 Grooved stones [A3.1, D3.1]
- The ceramics are mainly undecorated
- F3.1 delivers two beads, respectively black and a translucent turquoise

ZONE 3

The ash deposit in this zone, as discussed above, continues throughout the sequence and derives from fireplaces. Most of the fireplace areas display a fan-like pattern of ash in a colour spectrum ranging from black to white, and also reddish discontinuous lenses relative to approximate distances from a fireplace core.

Fireplaces become apparent on this level. A fireplace straddles squares A/B in the squares numbered 4 in the grid. A patch of bedding material accompanies the fireplace between A and B. D5 features another fireplace, which extends into the contiguous C square. Yet another fireplace is apparent in square F. The central part of the fireplace contains abundant carbonized seeds mixed with charcoal. OES fragments, bead roughouts, beads, as well as decorated OES, are recovered from peripheral ash features. Cylindrical bone sections of arrows as well as the more slender awls with a sharpened distal point are commonly recovered from these areas. Several pottery sherds are evident.

In the F square the ash patch from the preceding layer continues to grade into a lighter shade closer to a fireplace situated against the rock wall. In the darker ash of Quadrants A and B are a discrete grouping of approximately 20 OES beads, and also two drilled OES fragments. The fireplace from the F square, which is excavated as a feature, contains mostly seeds and charcoal, some bone and lithic debris, and only two OES beads.

- Charcoal becomes more abundant
- Bedding material is apparent in A5.1
- The bulk of carbonized seeds in the central area of all the fireplaces consists of *Strychnos*
- Scrapers are common among the lithics
- Fish bones are still noticeable among other fauna
- OES fragments and beads
- Decorated OES continues to be present, particularly in F5.1, D5.1
- Shell fragments and a shell bead suggest freshwater molluscs were also collected for beadmaking
- Worked bone: arrow sections and awls
- Grooved stone [D4.1]
- Decorated pottery includes a sherd in F5.1 with crenellation characteristic of Bambata. More Bambata sherds are recovered from D5.1
- Glass beads: F5.1 (1 patinated), D5.1 (2 black)

Lithic contents of a fireplace in D5.1						
Chunk	Chip	Pigment	Pebble	Bladelet	Broken flake	Scraper
5	3	3 (7 g)	1	1	1	2

Layer 2

ZONE 1

Several large stones are removed. The soft dark-brown humic soil continues, and is relatively moist. Lenses of darker soil are noticeably harder and more compact. A lens of yellowish ash lies close to the central area. There are markedly more ceramics in this level, especially from squares against the talus. Pottery sherds from B and D are large with thick vessel bodies, suggesting relatively big vessels.

- Charcoal becomes more apparent
- Lithic debitage is not abundant
- A hammer stone from F1.2 rests partly on the next level
- The size of bone flakes in the talus zone is generally noticeable larger than the fauna from the fireplace areas
- Several bone flakes exhibit cut marks
- OES fragments and beads
- Ceramics represent the most common and conspicuous finds in this level. Conjoining sherds are spread across A1.2, B1.2 and C1.2

ZONE 2

The deposit consists of greyish-white ash with yellow lenses, all of which are noticeably more dense than the fine soft, powdery ash deposits against the wall. The 7 buckets of deposit removed from F3.2 around a fireplace, indicated a marked degree of compressed soil. There is also evidence of termite activities.

- More charcoal is retrieved than in preceding layers and in more bulky fragments
- OES fragments and beads are present
- Worked bone is not abundant
- 2 Grooved stones [A3.2, F3.2]
- Clustering of a grooved stone, worked bone, OES fragments and beads and some lithics with charcoal is apparent in F3.2

ZONE 3

The deposit starts out compacted in the area where patches of cattle dung were removed from the modern surface. The deposit turns soft and powdery and consists of a greyish-white ash. Larger concentrations of darker material are evident in fireplace areas. The fireplace removed from F5.1 contains mostly charcoal, some pieces of fragmented bone, a few chips and two OES beads, several with ochre staining in the perforations. All the squares numbered 4 in the grid yielded substantial numbers of OES fragments, beads and also decorated OES.

Post-depositional disturbances are detected in three areas. In A4.2/Quadrant B, a rodent burrow collapsed into a small chamber on level 3. Rodent birthing hollows are present in D4.2/Quadrant C. Porcupine activities in C5.2 show in porcupine quills, coprolites and a gnawed bone. The latter disturbance continues through to level 3. The abundant charcoal pieces are fragmentary, and spread throughout the ash deposit.

- The lithics include small scrapers, but not much debitage
- OES fragments and beads are abundant
- Several OES fragments are decorated with drilled motifs
- A few fragments of nacreous shell fragments and shell beads are present
- A carnivore tooth in A4.2 occurs within contextual relationship with numerous beads and several decorated OES
- Worked bone: composite arrow sections and awls
- A cylindrical bone section decorated with a fine geometric incised motif is recovered from F4.2 (illustrated in Appendix N)
- Four grooved stones [B4.2 (1) and B5.2 (3)]

Layer 3

ZONE 1

The soil continues to be a homogeneous soft, dark brown with a loose texture and high humic contents. Relative sizes of faunal elements and fragments are larger, and the faunal sample

is more extensive. Lithics are increasing. Several lithics show diagnostic elements of a classic LSA Wilton. Whereas ceramics are present across the grid, clustering in relatively higher densities is apparent against the talus zone. Termite activities are recorded in F2.3.

- Charcoal is fragmented
- Some carbonized seeds are retrieved
- Large-sized faunal elements and fragments are particularly noticeable in F2.3/Quadrant D
- F1.3/Quadrant C contains a perforated baboon canine pendant canine, and also 5 baboon molars
- Frequencies of OES fragments and beads are low
- Decorated and undecorated ceramics are common in contiguous areas [A.3, B1.3, B2.3, C1.3 and F1.3. D1.3 and D2.3]. The bulk of ceramics is recovered from D1.3 and D2.3
- A piece of slag is present in B2.3

ZONE 2

The grey-white soil is much more ashy, and grades into a lighter shade towards the fireplace area. Soil texture remains relatively soft with lenses of quite moist and granular compacted ash.

- Lithics and debitage are more abundant
- OES bead frequencies increase, and especially in F3.3
- 3 grooved stones (B3.3, D3.3, F3.3)
- A large well-used grooved stone (illustrated in Appendix N), OES fragments and approximately 40 OES beads from F3.3 signal bead production in this particular space
- Worked bone sections are relatively abundant

ZONE 3

The mostly grey ash deposit has a very fine soft consistency, grading into an almost pure white towards Zone 2. The two fireplaces from the preceding layer 2, which straddle squares A/B and C/D respectively, continue into this level. These areas exhibit a dark grey ash with small amounts of charcoal. Post-depositional disturbances include termite activities in F5.3. Square C4.3 contains a small birthing hollow constructed from leaves. The bioturbated deposit is kept separate.

- The fauna continues to be fractured
- A cluster of large-sized charcoal fragments and the abundant, large haematite pieces from F5.3/Quadrants A/C suggest pigment processing
- Lithic frequencies increase noticeably, and especially small scrapers
- High numbers of OES beads and fragments [A4.3, B4.3 and F4.3/F5.3] are recovered from fireplace areas
- Decorated OES fragments continue to feature
- Clustering of beadmaking paraphernalia in F4.3 and F5.3 is accompanied by a discrete lens of charcoal in F5.3. More than 20 OES beads, freshwater shell and a shell bead, as well as a bone spatula, were found in F4.3. Approximately 30 beads were recovered from F5.3, which also contained a rubbing stone.
- 3 grooved stones [A4.3, C4.3 (2)]

- Worked bone: awls, tubular arrow sections and spatulates (D4.3 and F4.3)
- A tortoise carapace scute in B4.3 demonstrates the excellent preservation of organics
- Some of the *Strychnos* shell fragments in C4.3 are stained with ochre
- Pottery sherds with thick walls are more conspicuous than the thin-walled Bambata

Layer 4

ZONE 1

Soils against the dripline remain very dark and humic, interspersed with clay-like compacted yellow-brown lenses. Deposits towards Zone 2 are greyish brown and have a softer, but granular, texture. The deposit from the C2-squares is relatively soft and has a greater ash component, as well as chunks of charcoal. Larger-sized faunal fragments and complete elements are consistent with the previous layer. Microliths become more abundant. Ceramics are absent or present in low numbers. Ceramics show cluster formation only in D1.4, D2.4 and F1.4.

- The faunal sample from A1 includes fish bones. Analytical units for the several tortoise skeletal elements suggest the remains of an individual.
- Some carbonized seeds are retrieved
- A lower grinding slab is present in A1.4
- Lithics, such as small scrapers, backed scrapers and segments, become more apparent
- B1.4/Quadrant B yields scrapers, backed scrapers and diverse small flakes with secondary retouch. These activities extend to the contiguous square B2.4/Quadrant D, which contains lithic debit age, ash, charcoal and several incomplete OES beads.
- Low densities are apparent in OES beads, but more beads are recovered from squares abutting the middle section, indicating an activity area.
- Grooved stone [C2.4]
- The pottery sample includes decorated sherds of Bambata and Happy Rest facies.
- Clustering of ceramics in the D squares, which begins in layer 3, eventually continues through to layer 6.

ZONE 2

All the squares within this zone have a noticeably more ashy deposit. The C/D quadrants, which are in close proximity to activity areas around fireplaces, contain light grey ash lenses and ash lenses exhibiting fire-produced reddish to orange tinges. The textures of these lenses are much finer compared to the coarse and granular soils in other parts of the zone.

- Clustering of segments, quartz crystals, chips and a borer in C3.4/Quadrant C
- Fine reddish and white ash lenses within B3.4 contain OES beads, decorated OES, bone implements and B3.4/Quadrant D yielded a broken stone palette
- OES beads are generally very small
- Decorations on an OES fragment [C3.4] form a concentric pattern
- F3.4 contains large fragments of OES, approximately 30 OES beads, engraved OES and the distal part of a spatulate bone tool. 5 grooved stones and numerous scrapers are recovered.
- Bone flakes in D3.4 with cut marks co-occur with bone awls and linkshafts.

ZONE 3

Ash deposits from outside hearth cores consistently exhibit colour spectrums in fan-like formations. Hard, compacted white lenses with a dense texture, together with granular patches, can be linked to termite activities. Substantial quantities of carbonized seeds from fireplace areas account for several very dark patches against the wall. Charcoal is abundant. The degree of fragmented fauna diverges, being less fractured in D4.4 and C4.5 directly against the wall. A clear ash marker in Square A5.4 is evidenced by changes in consistency and colouration of the deposits, which are much darker and more dense. The ash layer extends over the greater part of the grid.

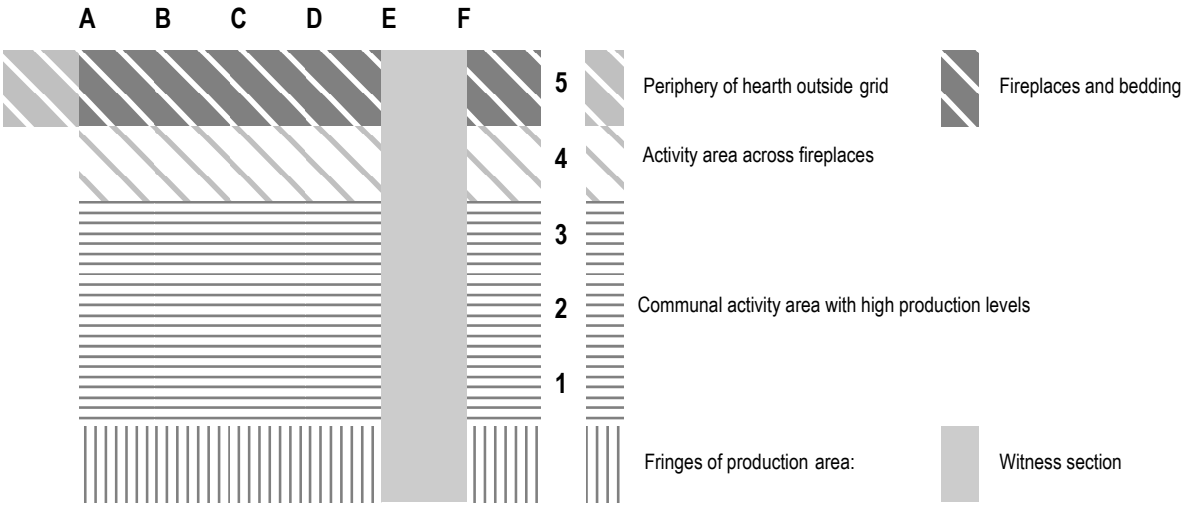
The A squares contain a patch of carbonized seeds, which include marula (*Sclerocarya birrea*) and kudu berry (*Pseudolachnostylis maprouneifolia*). The accumulation straddles A4/A5 in the section against the unexcavated deposit outside the grid. The recovered data suggest a peripheral fireplace. Several bone flakes from D4.4 have cut marks co-occurring with bone tools and numerous beads, suggesting an activity area adjacent to a fireplace in this space.

Persistent structuring of fireplaces in broadly the same general areas demonstrates that reuse of prominent features in bounded spaces conflates activities from successive events. More than 70 beads, OES blanks and fragments of decorated OES, as well as approximately 13 bone tools, which were recovered from two zones (F4.4/Zone 3 and the contiguous F3.4/Zone 2), likewise demonstrate that a grid can create superficial divisions. Integration of data is therefore important in reconstructing some of the activities at OBP, which I attempt to do in chapter 8. In F4.4 lithics cluster in Quadrant A within a grey-white ash lens. Post-depositional disturbance is evidenced by termite activities from the preceding level that continue into F5.4.

- The small amounts of fauna consist of mostly fractured bone flakes
- The lithic sample includes segments, a bladelet core [C5.4] and scrapers [>20 scrapers from F4.4 and F5.4]
- Abundant carbonized seeds
- Prolific OES bead production is indicated in several configurations along the fireplace areas with particularly high volumes in both A4 and A5, and also F4.4
- Bead sizes are variable, and some are very small (see Appendix N)
- Decorated OES fragments are present in most squares within this zone
- There is a high incidence of bone tools: arrow sections, awls, a bone spatula F4.4
- 9 Grooved stones [B4.4 (1), C4.4 (2), C5.4 (2), D4.4 (2), F4.4 (2)]

This layer produced high frequencies of lithics and organic artefacts. A schematic interpretation of Layer 4, based on the recovered data, is presented below. This general pattern is replicated in all underlying levels, but with progressively higher frequencies in virtually all classes of cultural material. Ceramics, as expected, show an inverse trend. Their numbers decline until only odd sherds — and then probably vertically displaced — are recovered from deeper levels.

Schematic interpretation of activities in layer 4 and also underlying layers



Layer 5

ZONE 1

I pointed out that the above schematic representation is also pertinent to underlying levels. A disjunction between the arbitrary 50 mm spits and volumes of deposited materials became especially clear in deeper levels. Incremental deposition of stone and lag deposits against the talus, contributed to the complexity of stratigraphic control. Patches of soil between stone are relatively soft, but coarse-grained. The colour of the deposit gradually changes to a brownish-black. A coarser texture corresponds with higher frequencies of lithics, stone chunks and debitage. Spalled roof fragments become prominent. The D squares in particular are more coarse and gravelly. The B squares are more ashy, grey in colour and contain fewer spalls. Several accumulations of haematite and soft, red ochre occur. The trend for larger-sized faunal elements persists. There is very little charcoal. Ceramics were mainly present in D squares.

Bladelets become apparent in appreciable numbers. Scrapers are even more abundant that in preceding layers. The many grooved stones, large OES fragments, numerous small-sized beads, decorated OES, bone arrow sections, anvils, as well as microlithic tools, signal high levels of production and maintenance. Increasing relative frequencies of lithics as well as non-lithics across all three zones demonstrate intensification in scheduled activities, and therefore use, of the shelter.

- 23 Grooved stones [A1.5 (2), B1.5 (5), D1.5 (5), F1.5 (6), B2.5 (2), D2.5 (1) F2.5 (2)]
- Two large anvils in A1.5 are accompanied by a hammer stone. A1.5 and A2.5 contain notably more stone than the rest of the squares in this zone. Large OES fragments, beads, two grooved stones, lithics and debitage, abundant haematite and more fractured fauna are present in A2.5.
- A1.5 contains relatively high numbers of scrapers
- 7 grooved stones [B1.5 (5) and B2.5 (2)] are accompanied by beadmaking, bone tools and decorated OES. A small fireplace is suggested by carbonized seeds
- C1.5 /Quadrant A contains a particularly well made punch. The fauna is fragmented, but include baboon tooth elements.
- D1.5 has an anvil, 5 grooved stones and large potter sherds, of which some belong to the Happy Rest facies. Two glass beads are recovered from D2.5, as well as large chunks of carbonized wood, a complete bone point, broken bone tools, and OES fragments and beads
- The 8 grooved stones [F1.5 (6) and F2.5 (2)], many small-sized beads, decorated OES, bone arrow sections and scrapers, show an emphasis on production
- A faceted ochre chunk from F2.5 [and 5 more from A1.6 and B2.6, B1.9 and C1.9, and B1.10] are similar to those from MSA contexts recovered through the test excavation.

ZONE 2

Patches of soft ash in grey-white are interspersed with fire-reddened lenses. The bulk of the soil is a darker grey with a much coarser texture than in preceding levels. Post-depositional water percolation evidently impacted on the deposit and also the preservation. Small, hard chunks of ashy material are particularly noticeably in D3.5. The angular consolidated clumps of greyish-white ash frequently formed around tools and faunal elements. Some post-depositional disturbance caused by root growth is evident in B3.5.

- The fauna includes a carnivore metacarpal [C3.5/Quadrant C]
- A cluster of flakes is present in D3.5/Quadrant A
- 3 Grooved stones [C3.5, D3.5, F3.5] co-occur with OES fragments, beads and decorated OES
- Bone implements: spatula, awls and composite arrow sections
- F3.5 contains 2 anvils and 2 hammer stones in close proximity. Microliths are abundant. >40 OES beads, decorated OES, a broken bone bead, complete and broken awls and a bone spatula are recovered.
- The contiguous squares from Zone 1 containing 6 grooved stones, beadmaking equipment and abundant lithics, suggest an activity area
- Clustering of materials in the F3 square is spatially related to the private space in Zone 3 where very high numbers of beads were found. The combined number of beads from F3.5,

F4.5 and F5.5 amounts to approximately 200.
- Only one potsherd is recovered belonging to the Happy Rest facies is recovered from D3.5

ZONE 3

The soft ash deposit is similar to preceding layers. More dense lenses exhibit differential colouration and the ash from deeper levels is generally darker. Large quantities of carbonized seeds and charcoal account for the very dark deposit in F5.5.

- Bone tool production is evidenced by a section of an incomplete bone cylinder in the process of being shaped, awls and a spatula.
- A5.5 yielded a red glass bead.
- A copper bullet casing was present in A5.5
- Faunal elements including tortoise, fish bones and shell are recovered from a patch of white ash in C5.5.
- Both D4.5 and D5.5 have large amounts of charcoal, but not a clearly demarcated fireplace.
- Tsamma and other seeds are present in D5.5 Quadrant 3. The fact that more seeds than charcoal were recovered demonstrates high densities for deposited seeds. Several stone tools were made on green CCS material, including a tiny segment and 2 scrapers, one with retouch around most of the cutting edge. This square has the largest amount of cultural material relative to other squares in Zone 3.
- 4 Grooved stones [A4.5 (2), C4.5 (2)] co-occur with OES fragments and beads, as well as bone awls and arrow sections
- F5.5 continues to show active production of OES beads and bone tools

Layer 6

ZONE 1

The deposit in Zone 1 continues as dark and humic, but with decreasing amounts of soil. Stone rubble is dense. Stone blocks become more common, and some were used as anvil stones. Anvils with well-worn edges and hammer stones are also common, in particularly from F1.6. The size of haematite and waste stone tends to be somewhat larger in comparison with preceding levels. Flakes <30 mm become more abundant. Microliths are present in relatively high numbers. Bladelets are again recovered in substantial numbers. Stone debitage is especially abundant. There is virtually no charcoal. Grooved stones remain ubiquitous. The greatest number was recovered from this zone, namely a total of 36 or 24.5% for the entire level. This again serves to demonstrate an emphasis on the production of bone tools and OES beads. C2.6 has intrusive plant roots.

- Charcoal is negligible
- A1.6, as in the previous level, has particularly high numbers of scrapers
- A1.6 contains a remarkably high density of bladelet cores (21)
- This is parallelled with considerable numbers (< 80) of bladelets in A1.6
- The abundant microliths include borers, scrapers, segments, bladelets and various miscellaneous backed tools
- Another faceted ochre piece is found in A1.6

- A1.6 also yielded a lithic ring
- C2.6 contains a chunk of ochre paste of about 100 mm. The shape and surface ridges indicate storage in an antelope horn sheath (see also chapter 5 for a discussion of earth pigments)
- The greatest number of grooved stones — 27 — is recovered [B1.6 (4), C1.6 (11), D1.6 (7), F1.6 (2); C2.6 (1), D2.6 (2)]

ZONE 2

Increasing accretions are apparent on artefactual material and fauna, and evidently resulted from water moving through sediments. The extent of encrustation and the formation of ash chunks inhibit identification of cultural material.

- The faunal sample is small
- There is very little charcoal
- Some carbonized seeds are present
- B4.6 contains several hammer stones
- The modest numbers of stone flakes tend to be relatively large
- The few microliths include segments and bladelets.
- Few OES fragments and beads are recovered
- Some decorated OES are present
- Worked bone: awls, polished bone sections

ZONE 3

The deposit is still very ashy. Debris and roof-fall become noticeable. Soils against the shelter wall are more gravelly in texture. There are generally less stone and bone. Worked bone implements show a decreasing trend, but appreciable quantities of OES fragments and beads are recovered. Small volumes of deposits from squares against the shelter wall (A5.6, B5.6 and C5.6) can be linked to intrusive basal stone ledges. A fireplace is located in B4.6 where the deposit is more dark.

- In spite of low volumes, the white ash deposit in Quadrant A/C5.5 yielded > 50 OES roughouts and beads as well as faunal elements from a single tortoise.
- Two hammer stones (B4.6/Quadrant 3/Quadrant 4), as well as 6 of the 7 grooved stones in the contiguous squares C and D can be linked to high numbers of OES fragments, complete and unfinished beads (particularly in B4.6 and C4.6 >100), decorated OES and relatively abundant fauna, especially tortoise.
- Beadmaking activities in F4.6 and F5.6.
- 7 Grooved stones [C4.6 (1), D4.6 (1), C5.6 (4), F5.6 (1)]
- F4.6 and F5.6 have numerous OES beads and fragments (> 150) and also a grooved stone. A sharpened wooden section used in pegging out hides is recovered from F4.6. It is approximately 100 mm in length, and a diameter of 7 mm. Pieces of cutoff wood from the peg, as well as more worked wood fragments with cut marks, wood shavings and twigs, are retrieved from F4.6 and F5.6.

Layer 7

ZONE 1

The soil is very dark, gravelly and stony from the inclusion of roof spalls. The dense layers of stone include tools, debris, bulky haematite pieces, large quartz crystals and substantial numbers of microliths. Fauna tends to be fractured. Worked bone and OES are not abundant, but several grooved stones are present. The recovered material from all areas argues for intensive production activities.

- 16 Grooved stones [B1.7 (1), C1.7 (5), D1.7 (2), F1.7 (6); B2.7 (1), C2.7 (1)]
- B1.7 shows evidence for a fireplace in a lens of soft ash within a coarse gravelly surround. This feature is accompanied by numerous lithic and bone tools, grooved stones, an anvil and hammer stones. Backed microliths and a particularly minute segment clusters in B2.7.
- Almost 50% of the total for scrapers from the B1 square was recovered from level 7, as well as the greatest number of awls
- Decorated OES is present
- Notable quantities of large stones, chunks, chips, haematite and worked stone are present in C1.7, where the punch from Layer 6 was previously recovered
- This space also has a lithic ring fragment and six grooved stones [C1.7 (5) and C2.7 (1)]
- A carnivore tooth is amongst the fauna
- There is still one pottery sherd in C2.7
- D1.7 too has grooved stones, hammer stones, microliths, pottery and a red glass bead
- Several anvils, hammer and nutting stones, and also punches and abundant microliths
- Anvils, hammer and nutting stones, six grooved stones, a broken palette and a fragmented faunal sample were recovered from F1.7 and F2.7

ZONE 2

The soil continues to be a grey-white with a coarse gravelly texture. Contiguous patches to the fire area in Zone 1 are reddish in colour with flecks of charcoal. Lumps of compacted material are ubiquitous. The extent of the encrustation inhibits identification of cultural materials. Low numbers of OES fragments, haematite, lithics and fauna are present. Beads and worked bone are uncommon. A hibernating frog is removed from A3.7/Quadrant B.

- Two modified and abraded Bov I metacarpals coated with ochre, and an OES disk, were recovered from D3.7/ Quadrant B.
- A cluster of haematite is evident
- Formal tools are rare, the lithic component consists mainly of waste
- Very few OES fragments are retrieved

ZONE 3

Roof spalls become even more abundant. Fireplaces continue, and the composition of the deposit corresponds with preceding levels. Carbonized seeds are present within fireplace areas. Abundant OES fragments and beads, decorated OES and worked bone are recovered from around fireplaces.

- 15 Grooved stones [C4.7 (5), F4.7 (1), C5.7 (7), D5.7 (2)]

- The fireplace in B4.7/ Quadrant C from the preceding level is continued, and extends into B5.7
- A stone sphere from B4.7 Quadrant C exhibits some batter marks
- Primary flakes and a core are present among stone debitage around the fireplace area in B4.7
- B5.7 contains a lithic ring
- In C4.7 numerous carbonized seeds originate from the fireplace, whereas Quadrants C and D contain most of the lithic debris. This space has 12 grooved stones [C4.7 (5), C5.7 (7)] and >55 OES beads.
- The fauna fragments include shell and fish skull elements from C5.7
- The common ash colour is a grey-brown in D4.7, whereas the section that abuts the wall is much darker. D5.7 has decorated OES, OES beads, blanks and 2 grooved stones. Some beads are ochre-stained, and whereas most of the bead blanks are irregular or square when the perforations are made, there is a large circular blank without a perforation in D5.7.
- A pyramidal core is recovered from D5.7
- F4.7 exhibits a red ash lens in Quadrants C and D towards a fireplace against the wall. There are numerous OES fragments and beads — F4.7 <50 and F5.7 <100 — and a grooved stone. A beautiful example of a polished bone point is recovered.

Lithic contents of fireplace B4.7

Layer	Chunk	Chip	Pigment	Pebble	Quartz crystal	Bladelet	Flake	Scraper	Stone sphere
7	18	40	2 (7 g)	2	1	2 2*	1 4*	3	1

* Broken.

Other materials around the fireplace include OES beads and fragments, charcoal and carbonized seeds.

Layer 8

ZONE 1

The deposit is very dark with a coarse-grained texture. This to some extent derives from chunks of charcoal. The deposit is more ashy and a lighter colour in the southern part of the grid. The fauna is very crumbly on account of the dampness of the deposit. Roof spalls increase exponentially. The trend for incremental amounts of stone rubble and lithic waste continues. Anvils and hammer stones continue to feature. There are also many quartz crystals. OES fragments and beads as well as bone tools occur.

- 7 Grooved stones [D1.8 (6), D2.8 (1)]
- A1 contains 4 anvils.
- In B1.8 are retouched bladelets, large cores and hammer stones and many quartz crystals
- Another lithic ring is present in B1.8
- B2.8 contains a bladelet core together with many microliths, debitage and haematite.
- Anvil stones are also present in D1.5 as well as 7 grooved stones [(D1.8 (6), D2.8 (1)]
- The bone tools from D2.4 include a piece with a flat triangular pointed surface and a tanged proximal section.

ZONE 2

The soil colour is still a grey-white, but tends to become browner. The texture and composition remain crumbly with chunks of compacted material. The clumps contain flecks of charcoal, which are difficult to recover. There is appreciable more haematite. Artefacts are uncommon. Fauna and OES represent most of the recovered material.

- A cowrie shell is recovered from D3.8/Quadrant B in the same spatial contexts than the two ochre-stained and modified Bov I metacarpals from preceding Layer 7. The dorsal part of the shell has been removed — a practice common among indigenous farming communities.
- Haematite clusters with lithics in D3.8

ZONE 3

The deposit gradually changes to a brown-grey ash. The trend for incremental roof spalls continues, and there are several stone chunks. High levels of bead production continue. There seems to be fewer formal tools. Several anvils, hammer stones and a punch occur in contextual relationships with lithic clusters. Fragments of mica were observed throughout the sequence. The fragile nature often resulted in damage during sieving. A good source of mica is the Glenover Complex to the southwest (Brandl 1996:22-6; Reeks 2003:pers. comm.). Low frequencies of mica were found at Kruger Cave by Mason (1988:175). Although no functional application is evident, mica exhibits a shiny platy surface and was probably collected for this characteristic (Deacon 1976:56). Two hibernating frogs removed from A4.8 represent the only evidence for post-depositional disturbance.

- 3 Grooved stones [C4.8 (1); C5.8 (1), D5.8 (1)]
- The fauna in A4 includes fish elements and baboon molars
- The fireplace from level 7 continues through ton B4.8 and is separately removed. The centre of the fireplace with many carbonized seeds spans t contiguous squares in B4.8 and C4.8.
- A cluster of lithics in B4.8 is accompanied by a punch in Quadrant B. There are also fragments of mica
- A punch occurs with the lithics in B4.8
- Both an iron bead and a red glass bead are present in B5.8
- Two grooved stones [C4.8 (1) and C5.8 (1)] are accompanied by beadmaking activities
- D4.8 contains seeds, fish bones, many OES fragments, relatively few beads, but abundant haematite. A grooved stone is present in D5.8.
- Wood sections with cut marks in both F4.8 and F5.8 are similar to those recovered from the preceding level in this space. Carbonized seeds continue to be abundant. OES fragments and beads, as well as decorated OES are also relatively common.

Lithic contents of the fireplace in B5.8								
Chunk	Chip	Quartz crystal	Pebble	Pigment	Bladelet	Flake	Awl	Scraper
37	69	23	2	15: 7 g	2 2*	11 3*	2	6

* Broken
This feature is also accompanied by a cluster of stone tools and a punch.

Layer 9

A number of microliths from all squares on this level are sampled for the residue analysis. Soil samples from the immediate areas are included.

ZONE 1

The small volumes of deposit present among substantial volumes of stone are very dark. Roof spall fragments are superabundant. Bulky stone blocks on the surface of this level are removed. Between rubble rocks are large anvils, lower grinders and hammer stones. Two of these bulky anvil blocks with peck marks, which were uncovered in the previous layer, are clearly from Layer 9. The abundant lithics include scrapers, backed scrapers and segments. The stone volumes continue to show a marked incremental trend. Haematite and quartz crystal volumes also increase. The number 2 squares within this zone contain more ashy brown-white soils, charcoal inclusions and carbonized seeds. These squares additionally contain more OES, and OES fragments tend to be relatively large.

- A1.9 contains a unifacial MSA tool
- The fauna in A2.9 includes fish bones.
- Ochre with striations is recovered from A1.9
- Chunks of faceted ochre are present in B1.9, C1.9
- 2 Grooved stones [D1.9 (1), F1.9 (1)]
- A pottery sherd with ochre-staining is probably intrusive (F2.9)

ZONE 2

The mostly compacted gravelly lumps continue to show an ashy component. The colour of the deposit inclines towards a darker brown and is softer than in preceding levels. Microliths are less abundant. Several cores are present. Haematite occurs in sizable chunks. Large fragments of OES and beads are present in areas around the fireplaces. Post-depositional intrusions include termite activities evidenced in discontinuous clay patches in A2.9 and C3.9. A rodent nest is evident in D3.9.

- The fauna includes several large bone elements and fish, and a carpal bone of a black rhino *(Diceros bicornis*) is recovered from C3.9.

- D3.5 contains more cultural material being a peripheral area to the fireplace in D4/D5.
- 2 Grooved stones [D3.9 (1), F3.9 (1)]
- A small nutting stone with two depressions is associated with ashy patches and carbonized seeds found in the contiguous squares of Zone 1.

ZONE 3

Squares A5.9, B5.9 and C5.9 abutting the wall, have low volumes of deposit since sandstone ledges extend into the floor. A relatively high volume of deposit remains in D5.9, whereas F5.9 has no exposed rock floor. The deposit remains very ashy. Roof spalls and rubble are common. All classes of cultural material continue to be representative. Bead production and bone tools feature prominently. Anvils and hammer stones around fireplaces are smaller in size than those from Zone 1.

- A lower grindstone and a rubbing stone occur in A5.9 against the shelter wall
- C4.9/Quadrants C/D and C5.9/Quadrants A /B contain a fireplace on the basal rock floor.
- The central part of the fireplace in C5.9 Quadrant A contains accumulations of charcoal and carbonized seeds.
- A grooved stone in C5.9 is again accompanied by bead-production activities
- D4.9 contains 62% of all formal tools in the sequence for this particular square, with particularly high numbers of awls and borers
- A fireplace in F5.9 contains numerous carbonized seeds and charcoal, especially in Quadrant C.
- A small anvil, lithics, a pyramidal core and numerous OES beads and fragments cluster in F5.9 among lenses of red ash

Layer 10

ZONE 1

This level is virtually a stone matrix with patches of dark soil. The volumes of all classes of lithics show a marked exponential increase. Haematite and quartz crystals are abundant and of a large size. There are several anvils and hammer stones. Microliths and debitage cluster around one of the quartzite anvils in D1.10/Quadrant A. A rodent nest in A2.10/Quadrant D extends into A3.10, and a rodent birthing hollow is removed from C2.10/Quadrant C.

- A1.10 contains 2 borers and 2 awls, and another 2 borers are present in A2.10
- Numerous backed microliths cluster in A1.10 and A2.10
- The faunal elements of a single fish and baboon molar are present in A2.10
- A2.10 also contains many OES fragments and beads in Quadrant B
- B1.10 has a faceted ochre chunk
- B1.10 contains an anvil and 13 stone punches
- A cluster of carbonized seeds in B2.10 Quadrants B and D is accompanied by OES beads
- In C2.10 Quadrant A is a hammer stone surrounded by flakes, borers and other microliths as well as several beads. The worked bone component contains an unfinished arrow section.
- C2.10 also contains 2 anvils
- The fish remains in C2.10 clearly form part of the cluster of fish elements from the preceding layer recovered from Zone 2, C3.9

- In D1.10/Quadrant A an anvil co-occurs with several hammer stones and a collection of microliths. Only tools and debitage on the immediate surface are collected as elements constituting a discrete activity area (see Table below). The relative frequencies of formal tool types also show high volumes of scrapers, borers and awls in D1.10.
- The highest volumes of chunks and chips yet are recovered from this level
- F1.10 contains large quartz crystals, a grooved stone, anvils and hammer stones in Quadrants A and B. It is evident from the stones in the section wall on the talus that this activity area extends to the space outside the grid. A very fine bladelet core is recovered.

Quartzite anvil with tools centred in D1.10

Chunk	Chip	Core	Flake	Scrapers		Segment	Borer	Bladelet	Backed bladelet	Backed utilized tool
4	4	6	2	14		6	1	4	9	1
				Backed	10					
				Double	1					
				Side	2					
				End & side & adzing	1					

ZONE 2

The coarse crumbly consistency of the grey-white deposit continues. Increasing numbers of roof spalls, stone waste and lithics accrued in this zone. Whereas the assemblage has a definitive blade component, significant numbers of small scrapers, bladelets and segments continue to be manufactured. Charcoal occurs in flecks within the compressed chunks of deposit. Low numbers of OES fragments and beads are present. Haematite is not common. Post-depositional disturbance in A3.10 D3.10 is evidenced by termite workings that resulted in patches with a hard, dense texture in the area contiguous to Zone 3. A rodent nesting hollow is present in A3.10.

- A small charcoal patch in B3.10 occurs next to an upright stone in Quadrant A. The white to orange ash lenses in Quadrant C contain carbonized seeds, large chunks of haematite and several OES fragments and beads. Quadrant D is stony with much lithic debitage. There was clearly a small fireplace in this area.
- A piece of soft yellow ochre is present in C3.10
- C3.10 also yields an unfinished section of a bone point and a relatively larger faunal sample.

ZONE 3

Fireplaces continue, accompanied by the ashy matrices typical of these features. The deposit colour changes from dark in the heart area, towards white and reddish orange on the outside. Termite activity is evident in D5.10.

- The faunal sample includes freshwater molluscs and fish

- 5 Grooved stones [A4.10 (1), D4.10 (1); C5.10 (2), D5.10 (1)].
  D4.10 has grooves on both sides.
- Recovered materials again suggest the location of a fireplace on the peripheral edge of the grid outside the excavated area. Several pieces of OES, beads and a grooved stone are recovered from A4.10. Very little material is recovered from A5.10 on account of the stone ledge, yet OES fragments and beads were still present.
- B4.10 has lenses of ash that are dark in Quadrant B with inclusions of charcoal, light orange in Quadrant C and red in Quadrant D. Several beads and blanks as well as bone tools are present.
- The soft brown soil in C4.10 has a dark grey, ashy patch in Quadrant A and light orange soil in Quadrants C and D that grades into dark charcoal-rich soil. C4.10 yields OES beads and blanks, large OES fragments and a fragment of a bone awl. There are a great many chunks and chips, quartz crystals and haematite. Microliths include cores, some scrapers, many bladelets and borers.
- Two grooved stone in C5.10, of which one has grooves on both surfaces, are accompanied by OES beads and blanks, also quartz crystal cores, a quartz borer and several scrapers.
- D4.10 has decorated OES, OES fragments and beads, mollusc shell fragments, fish bone, and bone awls. A cluster of microliths and debitage in Quadrant A included several small scrapers and scraper blanks. OES fragments and beads are abundant.
- A lithic ring fragment from F4.10/Quadrant A is retrieved near an upright stone with ochre-staining. Microliths are also abundant in this space.
- The central fireplace area in F5.10 comprises carbonized seeds and charcoal. The surrounding space shows bead production in the many OES beads, fragments and decorated OES.
- A large copper bead is recovered from F5.10.

3.4.2.2 General trends in the deposition and stratigraphy

I now provide a summary of general trends at OBP to facilitate a discussion on intersite spatial structuring and the use of UCA presented under 3.5:

- Incremental increases in volumes and the frequencies of lithic and non-lithic materials are evident from especially layer 4. This trend continues in underlying levels. These aspects are discussed in more detail in the following chapter 4 on lithics, and in chapter 6 in which non-lithic remains feature.

- At OBP a spatial configuration of fireplaces against the wall, and activity areas across the fireplaces and in the open space against the talus, is recurrent as suggested by data from the excavated sequence. In motivating the threefold division used in the discussion of the stratigraphy, I referred to the observed variations in the scheduling of activities. The patterning of activities is discussed in the chapters on lithic and non-lithic remains.

- The lithic component is augmented by a range of stone support objects used in tool

manufacture (anvils, punches and hammer stones), and in food and pigment processing (lower grinders, smoothing, rubbing and nutting stones and palettes). The larger objective stone pieces show more pronounced clustering in the open production area. The use of smaller-size anvils in the space against the wall probably relates to the type of activity undertaken in private areas, in particular the production of beads. The presence of more bulky objects and high lithic volumes in the open space can account for differential deposit volumes recovered across various activity zones.

- Post-depositional chemical transformations resulting from water action were discussed under 3.2. These processes greatly altered the deposit in the middle zone and also impacted on retrieval of ecofacts and artefacts, such as fauna and smaller items. The effects of water runoff across the roof, and water dripping from the ceiling (Karkanas *et al*. 2000:916), account for corresponding higher erosion levels in this section.
- A gradual loss of loss of soil in deeper levels obviously resulted from post-depositional alterations. When lost organic matter is continuously replaced in most temperate soils a steady-state condition of cycling is established. When decomposition and accumulation rates are no longer in equilibrium only the most resistant humus remains (Stein 1992:200). Since the shelter was apparently semi-abandoned for hundreds of years, negligible quantities of new organic material were introduced and much of the sediment was removed by erosion. The poor soil formation and high stone densities from tool production and roof spalls contributed to loss of soils. Differential effects of post-depositional processes are demonstrated in the recovery rate of soil volumes across the site (different bucket counts are addressed in chapter 4 with the lithics).

- Squares against the talus contain significant amounts of roof falls and angular sandstone chunks randomly incorporated into the archaeological deposit. Since this area is immediately underneath the roof overhang, the debris probably derived to some extent from heavy water runoff transporting exfoliated rock over the ledge, as discussed at the beginning of this chapter. Spalls are also present in Zones 2 and 3, but in considerable lesser quantities. Spall fragments are more abundant in deeper levels.

- An adherence to highly standardised site organization patterns (Parkington & Mills 1991:359) and the reuse of fireplaces (Yellen 1977:188; Mitchell 2002:105; Schiegl *et al.*

2004:185) resulted in palimpsests of fireplace contents at OBP. The organic content of sediments from human occupation and also ash deposits from fires contribute markedly to the fine matrix of shelter sediments (Woodward & Goldberg 2001:339). At OBP the position of the fireplaces against the shelter wall accompanied by bedding materials and waste from private household activities introduced significant amounts of organics into the deposit (see 3.6.2). Combustion of bedding material probably contributed significantly to ash accumulations. Fires kindled on purpose or accidentally near or onto bedding patches were likely to destroy most of the material introduced for sleeping areas, and only a few instances of intact bedding are preserved at OBP. The dry ash environment promotes the preservation of organics. The sheltered space against is, in the main, not exposed to water erosion or other potentially harmfully depositional processes. The very large volumes of seeds recovered in this area suggest that fireplaces were locations where plant foods were prepared and consumed. Decomposed animal and vegetal tissue from food and implement processing contributed to the volumes of deposit. All of the former processes and activities resulted in the formation of larger volumes of soil and with fewer stone inclusions in Zone 3.

- Spall fragments were less abundant in the sheltered wall space. Squares against the talus contain significant amounts of roof falls and angular sandstone chunks randomly incorporated into the archaeological deposit. Since this area is immediately underneath the roof overhang, the debris probably derived to some extent from heavy water runoff transporting exfoliated rock over the ledge, as discussed at the beginning of this chapter. Spall fragments become more abundant in deeper levels, and across the site.

3.4.2.3 Distributional and site integrity

These aspects also featured to some extent in the section 3.3 on site formation processes and post-depositional disturbances. I pointed out that frequencies of post-depositional residues, such as mycohyphae and rootlets established from a residue analysis of lithics, suggest a comparatively undisturbed deposit (Williams 2006:3). The arbitrary spits dictated by the deposit do not allow for a fine-grained reconstruction of the stratigraphy. However, coherence is supplied by clustering of activities across contiguous squares and successive excavated layers. Several lithic data sets (chunks, chips, cores, grooved stones, etc.) and organics (OES fragments, beads, blanks, bone tools), show discrete patterns in their spatial distribution and demonstrate the relative integrity of living floors. Since the small size of chips prevents

reworking, clustering of small chips suggests the focus of the activity that produced them (Henry *et al.* 2004:22). Clustering of production equipment, such as anvils and hammer stones, in apparent contextual relationships with accumulations of lithic debitage suggest good site integrity at OBP. Some of these occurrences are addressed in the discussion of intersite spatial patterning (3.6) and demonstrated by the UCA diagrams (Appendix F).

3.5 THE DATES

Charcoal, carbonized seeds and OES fragments were submitted to obtain dates. The results on OES yielded anomalous inverted dates. For example, a date of date of 3230 ± 50 BP calibrated to 1507(1436)1410 BC for Layer 3 (Pta-7790), which is too old for a level where other data (ceramics and exotics) suggest relatively recent occupation. Dates from the seed samples are also unsatisfactory. A couple of anomalous radiocarbon dates and vertical displacements of ceramics probably derive from post-depositional bioturbation processes. A table with dates obtained for occupations at OBP is provided in Appendix L.

The data from the excavations are now integrated to make inferences on spatial organization, and broad patterns of activities and behaviour, before lithic and non-lithic materials are detailed in chapters 4 and 6 respectively.

3.6 INTRASITE SPATIAL PATTERNING: DEFINING ACTIVITY AREAS BY SPATIAL ANALYSIS

The contextual spatial relationships of artefacts, manuports, ecofacts and features can be used to define structuring of space — and likewise the integrity and primary contexts of the data — across living areas (Henry *et al.* 2004:19-20). Spatial studies help to understand how activities were structured at a specific locality and whether activities were spatially segregated. Yellen (1977:91) says that '[o]ne consequence of this clustering of activities in individual nuclear areas is the presence of discrete, but very similar clusters of material remains associated with each of them' and '[b]ecause of this activity clustering, some parts of a camp are essentially empty ...'. Models, such as unconstrained clustering analysis (UCA) (Whallon 1984:242), making use of quantitative analysis to define patterning and spatial distributions of classes of materials, are applied to infer structuring of space at a particular locality.

The term *site structure* as used for open camps refers to site size, the presence and arrangement of activity areas, structures and features, including huts, hearths and storage facilities, but not the patterning of artefacts (Kent 1991:35). At shelter and cave sites fireplaces and sleeping hollows are often the only structural features. In using the term to describe activities at OBP I refer to the use of space as determined by hearth-generated materials, and also the distribution of all classes of materials across the commonly constrained space (see also Galanidou 1997; Balme & Beck 2002; Henry *et al.* 2004).

Common reference to activity areas can also be a methodological problem because remains from diverse activities more often accumulate in one place (Rigaud & Simek 1991:217). Technical and also social, variables impact on processes resulting in the deposition of materials over an occupation area (Whallon 1984:243). The excavated levels at OBP represent palimpsests of many overlapping occupations within the confined space (Yellen 1977:188; Barham 1992:46; Galanidou 1997:15-6, 37). UCA is therefore an eminently suitable model to apply to the OBP data, since the method defines broad boundaries and general trends in behaviour and site use and not discrete activities relating to specific events.

The San are known for their remarkable diversity, and differences in spatial organization and settlement patterns can be found even within a single linguistic group (Guenther 1996a:69). Substantial differences in the frequencies of recovered material and structural features at OBP demonstrate organization of space along specific needs and behaviour. It is argued that the continued use of structures, and especially fireplaces, is in the first instance determined by cultural constraints and secondly, practical demands imposed by the spatial configuration of a locality (Galanidou 1997:20). The position of fireplaces, in particular, relies on the physical shape of a locality, as has been demonstrated for sites in the western Cape (Parkington & Mills 1991:360, fig. 3), and Goergap on the Waterberg Plateau (Van der Ryst 1996, 1998a). Long and relatively narrow shelters that developed through erosional cycles of the Waterberg sandstone and conglomerates along ancient watercourses are typical of the region as discussed in chapter 2.

We know from ethnographic studies that people often organize their tasks spatially when they occupy a place, but the data also suggest that discrete, activity-specific areas within sites may be rare in the archaeological record (Yellen 1976:67, 1977:81; Connell *et al.* 1991:73-5; Rigaud

& Simek 1991:216-7; Barham 1992:45-7; Wadley 1992:53). Such discrete occurrences cannot be taken as evidence for complete segregation of activities, but do indicate that some took place in particular areas more often than in others (O'Connell *et al.* 1991:74). Criteria are important to evaluate the presence or absence of clustering. An assemblage composition approach, such as UCA that relies on density values, is therefore extremely valuable in detailing spatial patterning across a site (Whallon 1984; Gregg *et al*. 1991; Blankholm 1996; Wadley 2000a, 2000b).

Care should, however, be taken not to oversimplify artefact distributions because different cultural as well as non-cultural post-depositional processes influence site formation (Rigaud & Simek 1991; Stevenson 1991; Stein 1992; Blankholm 1996; Sandweis 1996; Galanidou 1997; Shott 1998). Before reliable inferences about spatial analyses can be made, it is important to identify and assess the many site-formation and non-behavioural processes that may have impacted on a specific assemblage (Galanidou 1997:15). I accordingly discussed site-formation processes active at OBP (3.3) before a discussion of spatial structuring at the site is attempted. Activities producing features are different from those associated with general discards (Reitz & Wing 1999:119). The distribution of debris and superimposed fireplaces at OBP mirrors highly standardised site organization patterns at other hunter-gatherer localities (Parkington & Mills 1991:359, 60:fig. 3; Galanidou 1997:24, fig. 4.1; Henry *et al.* 2004:fig. 8). The fact that many fireplaces, ash lenses and charcoal patches are intact suggests that the OBP deposit was not subjected to extensive bioturbation or anthropogenic disturbance through successive habitation events (Balme & Beck 2002:159-6; Henry *et al.* 2004:21).

The exploration of spatial patterning connects the static archaeological record with behaviour systems that produced them. Widlok (1999b:162) says that 'spatial arrangements guide social practice'. Human concepts are guided by beliefs and symbolic concepts with recurrent patterns in human thought in different cultures, many of which are expressed in such opposites as man/woman; left/right; public/private, etc. (Renfrew & Bahn 2004). UCA can also inform on gendered interpretations of deposition patterns (Gregg *et al*. 1991; Keeley 1991; Kent 1991; Stevenson 1991; Wadley 1997, 1998; Tilley 1999). To distinguish between gendered activities and assign spatial use that can stand scrutiny, a large sample with data from similar projects has to be accessed (e.g. Bartram *et al.* 1991; Kent 1991, 1998; Wadley 1997, 1998). Gender attributions to material culture are contentious and often oversimplified (Wadley 1997:9; Kent

1998:9-21; Mitchell *et al.* 2006:90). It was not my objective to address gendered space at OBP in detail, but the contextual data are often so clear on binary gendered space, and the activities that produced the patterning, that such considerations do feature in the following section. I also discuss gender in chapter 8, which aims to reconstruct some of the activities undertaken at the shelter.

The excavated area is divided into three zones merely to facilitate the discussion, and also because the central zone straddles both the private and shared space with an overflow of activities created by the arbitrarily imposed grid. Studies on recent hunter-gatherers demonstrate that irrespectively of the specific arrangement, only two main formal types of space are structured (Yellen 1976:61-8, figs 2.1-2.3, 1977:89-90). The ring model commonly adhered to at longer term camps also have amorphous areas of special activities on the periphery (Yellen 1976, 130-1; 1977:95), for instance, hide working to be discussed in chapter 6. At more transient camps windbreaks often follow a linear pattern (Yellen 1977:89; Bartram *et al.* 1991:94, 119). A linear arrangement is also clear at what was probably a special purpose camp for fish processing (Mitchell *et al.* 2006:89). The communal area belongs to no particular individual, whereas the peripheral area is demarcated with structures where each family organize their private space around fireplaces. Yellen (1977:89) says that only the individual perceives a threefold spatial division composed of his/her private family space; secondly, fireplace space belonging to other hearth groups and thirdly, a shared space. The shared space is the focal point for the entire group and includes a central area, as well as the space around it. The location of a particular activity is determined by the particular composition of the group undertaking the activity. Yellen (1977:90-3) says that different kinds of activities commonly carried out around a family hearth, can also take place outside the hut circle or fireplace in the special activity space, for instance, when taking advantage of shade, but that such activities are usually of short duration. The usual range of activities undertaken by the Hadza shows similar overlaps, but in contexts without any association to a particular household or a sleeping group when the activities are scheduled in the shared space (O'Connell *et al.* 1991:66-7).

Since the talus at shelters commonly forms the periphery of the shared open space, refuse zones broadly correspond with the talus (Parkington & Mills 1991:359, fig. 3; Galanidou 1997:39, 135-6). The section contiguous to a talus is normally used for the production of lithics

and other activities generating large amounts of waste. The talus should, therefore, contain evidence of early stages in the lithic production process. At OBP the excavated squares fronting on to the talus did produce high relative proportions of lithics from knapping. Tool and waste classes with high frequencies include cores, primary pieces and debitage. The lithics occur in contextual associations with large stone anvils and production tools, including punches and grinders. At OBP the talus is unexcavated, but undoubtedly used for dumping of excess and unwanted materials. The talus should, therefore, contain large quantities of materials relating to such early stages in the reduction sequence.

Post-depositional processes are addressed under 3.3. However, I again point out that contact between the deposit against the wall, and the section abutting the talus, is unconformable towards the deeper levels. This can be ascribed to water-action removing solubles, which resulted in a lag deposit (Henry *et al.* 2004:21) (see also section 3.3 on site formation). The removal of fine sediments developed a coarse-grained deposit containing very large quantities of stone. During the close of the excavations this area began to yield more tools with MSA affinities, as confirmed by the subsequent analysis (see chapter 4 on the lithics). Although some of the MSA tools are antiques, with evidence for reworking, there is a decided MSA element that may indicate some mixing.

The shared area includes the empty central space where group activities, such as first distributions of meat or dancing, leave virtually no recoverable data (Yellen 1976:67-8, fig. 2.3, 1977:90-1). The central space largely corresponds with the open area at campsites, but on a much restricted scale. It is discussed in less detail as the distribution pattern is relatively bland, containing low-density values over the greater part of the sequence. The pattern is analogous to ethnographically observed structuring of this space. Site formation processes (3.3) applicable to OBP also show more marked impact in the central part of the site, resulting in some loss of data.

In as much as the series of fireplaces results from multiple events, they are the main fixed points to be explored for hearth-related production and maintenance activities, as well as refuse production, and are therefore discussed in more detail under 3.6.2.

3.6.1 Setting out the methodology of unconstrained clustering analysis (UCA) as used at OBP

UCA is an approach developed by Whallon (1984) to explore spatial distributions of different classes of materials by defining areas with distinct clustering. UCA generalizes data to find concentrations of different kinds of items on living/occupation floors or palaeo-surfaces. It is a grid-based analysis where smoothed densities are calculated to minimize the effect of local noise caused by extremely high or low values (Whallon 1984; Gregg *et al*. 1991; Blankholm 1996; Wadley 1996b, 2000a, 2000b; Galanidou 1997). Clustering is indicated on the grid by contours, isolines or outlines. In UCA, absolute artefact counts are converted to a vector (at OBP percentages of the total densities); thereafter converted to proportional densities by summing the elements of the vector and dividing each of the elements by the sum for that vector. The computed smoothed densities are then plotted onto the grid and homogeneous groups are combined (Whallon 1984:244).

Smoothing is sensitive to the grid outline, in particular where narrow or non-contiguous areas are included (Galanidou 1997:37). At OBP a narrow test excavation, as well as the unexcavated witness section, impacted on the calculations. To compensate, the values for the test trench were adjusted to an average. Whallon (1984:246) in referring to Yellen's (1976, 1977) observations on activity patterning (which determined that absolute frequencies were a function of length of occupation, the number of people engaged in an activity, repeats of the activity, and other variables), argues that the use of relative frequencies reflects the *nature* (my emphasis) of these activities more directly.

The general approach of UCA is based on a flexible framework for considering spatial variations, which can be subjected to individual adjustments or modifications, including the scale of smoothing (Whallon 1984:244; Galanidou 1997:13-4). For the OBP data I modified Whallon's original 1984 model to present outlines, and not isolines. Linear interpolation presents greater smoothing of data (Whallon 1984:245). I define groups by arbitrary intervals of 5, which translate into low (0-5%), medium (6-10%), high (11-15%), and very high densities (<16%). The outcome is a smoothing of data, but with a graphic representation of spatial patterning that is inherent in the data. This format of data presentation (Appendix F) allows the use of overlays to compare distribution patterns (overlay transparencies are provided in a separate envelope in volume 2). Ethnoarchaeological studies confirm that configurations of

items characterize particular activities (Whallon 1984:246). Hearths are central for structuring activities that generate dense concentrations of archaeological materials. The prominency of fireplaces in the organization of space at the shelter requires that these features are first discussed before the UCA data are presented.

3.6.2 Fireplaces and sleeping arrangements

The fire, not the house, is the home ... (Heinz 1966:33)

3.6.2.1 The primary fireplaces

The interpretation of spatial structuring centres on an understanding of the formation of fireplaces structures, from primary deposition, to subsequent transforms. Ash, charcoal and fire-reddened soils are often the only remaining evidence for a fireplace (Deacon & Deacon 1999:2; Henry *et al.* 2004:22). Ash colour depends on proximity to a fire. Fireplace areas are further marked by peripheral ash smears. These conform to observed cleaning out of fireplaces in a sweeping arch away from the fire area towards the hut opening, producing a large ash scatter, as well as a line of detritus, adjacent to most primary fireplaces (Silberbauer 1981:230; Bartram *et al.* 1991:97; Wadley 2000b:98; Wright 2004/5:36; Mitchell *et al.* 2006:89). Expedient removals of refuse also produce zones of debris outside the drop zone (Binford 1978,1983; Carr 1991; Keeley 1991; Nicholson & Cane 1991; Stevenson 1991).

Smaller artefacts are more likely to remain *in situ* than larger objects after clearing and sweeping of fireplaces (Keeley 1991:258; Stevenson 1991:273-6; Balme & Beck 2000:159). Size-sorting through refuse clearance, which leaves behind smaller-size objects, is known as the 'McKellar principle' (Stevenson 1991:274). Yellen (1977:103) also observed at Ju/'hoansi encampments that smaller objects in the vicinity of hearths were more susceptible to downward migration. Cleared materials from household space are periodically deposited in secondary refuse areas (Marshall 1976a:85; Yellen 1977:143; Silberbauer 1981:285; O'Connell *et al.* 1991:66). These refuse middens, usually near a camp periphery, contain dense hearth-generated waste, and also sweepings removed from inside windbreaks. Small pits adjacent to fireplaces for roasting foods, such as *Citrullus* spp., can also extend the ash scatter around a hearth (Bartram *et al.* 1991:91, 96-7:fig. 2).

Fireplaces are cross-culturally the loci of a hearth group or private household (O'Connell *et al.*

1991:66). In southern African contexts a fireplace controls access to the private space. At open Hai‖om camps the hearth space, central fire and entrance facing the outside, provide a spatial prompt requiring specific social behaviour (Widlok 1999a:393-4, 1999b:160-1). Marshall (1976a:84) says of the Ju/'hoansi that '[t]he fire is the nuclear family's home, its gathering place, its rightful place to be ... A fire-home is always where the family is'. Most of the discrete and spatially segregated activities of hunting and gathering groups are scheduled around fireplaces (Parkington & Poggenpoel 1971; Yellen 1976; Wadley 1979; Parkington & Mills 1991; Valiente-Noailles 1993; Galanidou 1997; Henry *et al.* 2004). The inside/outside layout of private household/communal spaces is demarcated by fireplaces, bedding patches, and brushwood (Bartram *et al.* 1991:94:fig. 5; Parkington & Mills 1991:357). Widlok (1999b:159) maintains that these features, by creating an enclosed space, function along similar lines to walls.

At OBP fireplaces and sleeping areas broadly follow the back wall of the shelter in a linear pattern. Whereas the fireplaces are more defined in the lower, and earlier, part of the sequence (see diagram 4:level 10), there is clearly a sustained use of this space at OBP throughout the LSA sequence. The structural layout emphasizes the universal standardization of confined space. Depositions from more recent fire-making events, which are less dense, confirm changes in the frequency of visits to this locality. OBP has no special containment basis or structures for fireplaces. This is analogous to the Kua, whose fires were simply kindled on the ground (Bartram *et al.* 1991:97). The Ju/'hoansi fireplaces are merely depressions produced by raking coals, ash and hot sand during cooking (Yellen 1976:64, 1977:143).

Fireplaces, apart from serving as loci for food processing and consumption by nuclear family groups, are also central for production and maintenance activities of both men and women. Cooperative tasks by women and girls, such as beadmaking and the sewing of beads, take place around a household fireplace while the owner of the space, family members and visitors exchange news and gossip. Communal, waste-generating, activities by men are carried out in fireside contexts when they join to make or poison their arrows (Yellen 1976:68-9, 1977:91). Details on deposition around fireplaces are provided with the UCA discussion (see also Appendix F).

3.6.2.2 Other fireplaces

Many of the informal fires documented at open camps are special activity areas (usually in the shade) where nuts or vegetables are processed by adults and also children. After a successful hunt the Ju/'hoansi cook snacks at expediently lit fires throughout the day (Marshall 1976a:88-9; Yellen 1977:144-5, 202). There are also more sleeping fires than families as older children sleep apart from their parents' fire. Small fires in or near communal areas are kindled for lighting pipes or for special purposes, such as straightening wooden shafts of bows, arrows or digging sticks, and also when making quivers (Yellen 1977:142; Bartram *et al*.1991:97). At OBP fire-produced red soils, as well as discrete patches of charcoal, carbonized seeds and also haematite, commonly occur in close proximity to nutting/ore crushing slabs. Such contexts argue for the kindling of small fires for specific tasks, such as roasting pigments or nuts. At OBP the particular locations of these small fire patches with the central area and, therefore, on the fringes of activity areas, are analogous to open camps. The UCA for all groundstone shows clustering primarily in this area (see Appendix F).

3.6.2.3 Sleeping arrangements around fireplaces

The positioning of sleeping space around or near hearths in shelter or cave localities is universal (Clark & Walton 1962; Parkington & Poggenpoel 1971; Wadley 1979; Parkington & Mills 1991; Opperman 1996; Galanidou 1997; Henry *et al.* 2004; Mitchell *et al.* 2006). When preparing sleeping hollows, people simply scoop out earth near a fireplace (Dornan 1917:47, 1925:91-2; Marshall Thomas 1959:196; Arbousset & Daumas 1968:251-2; Yellen 1977:143-4). Marshall Thomas (1959:40-1, 196) noted how the Ju/'hoansi women lined the little hollows with soft grass bedding, and then placed two arching sticks at each of these to mark the place where the door of a house would be, for they 'need a sense of place ... for without their grass and marking-sticks the Kung feel homeless'. Yellen (1977:236) similarly describes their use of bare, upright branches stuck into the ground to mark the entrance of an elementary shelter space constructed after rains, or the use of vertical leafy branches in an unroofed semicircle.

Photographs taken by Dorothea Bleek in 1910/1911 at Eyerdoppan near Prieska show huts situated among brush screens (Hollmann 2005:xxx-xxxi). At transient camps, where there are no formal household structures, similar arrangements mark out e domestic space and the focal area of each family unit (Parkington & Mills 1991:355-7). Sites in the western Cape conform to an arrangement of fireplaces in front of bedding patches close to the wall (Parkington & Mills

1991:360, fig. 3). The rearmost part of shelters is commonly used for sleeping and for fireplaces because a wall reflects heat (Nicholson & Cane 1991:267).

At OBP sleeping hollows are suggested by discontinuous, infrequent patches of twigs found against the wall. During stabilization of the excavations in 2005 a consolidated mass of bedding materials was noted in the profile a butting on the witness section. The fireplace arrangements, as well as the bedding remains, show a clear linear grouping of individual households, which were possibly demarcated with a brush break for privacy. At Big Elephant Shelter in Namibia collapsed brushwood screens, found in association with fireplaces and sleeping hollows, marked the private space of each family unit (Clark & Walton 1962:1-4; Wadley 1979:19, 51; see also Galanidou 1997:26 fig 4.3, after Clark & Walton 1962). At this locality a thick mat of woody *Blepharis* spp. (of which a paste and also the roots relieve itching, see also chapter 6) served as a lining for grasses and leafy bedding (Wadley 1979:29; Galanidou 1997:141). Bedding from archaeological contexts is not always intact, because the fragile materials are easily destroyed during successive reoccupation of space around the hearths. Negative evidence for bedding is linked to cleanups of accumulated ash, debris and bedding, the kindling of fires adjacent to sleeping hollows, or the purposeful burning of old bedding on reuse of a locality. At open camps pollution reaches a level of discomfort after approximately three weeks (Silberbauer 1981:285), often requiring a shift of camp.

Spatial layout, and structuring of activities, can be inferred when boundaries are delineated in the deposition of prominent classes of cultural remains. I now present a summary of the UCA data. I also demonstrate the merits of using such a model to interpret data recovered from archaeological investigation. The discussion includes tentative interpretations of patterns observed at OBP. I again emphasize that the excavated levels represent a series of condensed and overlapping occupations within a constrained space (Yellen 1977:188; Barham 1992:46; Galanidou 1997:14-5, 37). The findings, therefore, reflect merely general trends in site-use and site-specific behaviour. Specific considerations were involved in my selection of the area to be excavated, but it remains an arbitrary decision. The interpretation of site usage reflects only a small part of activities and behaviour within a bounded area. It should also be noted that the southernmost blank cells against the wall in the deeper levels result from the intrusion of the shelter floor into the deposit as explained under 3.3 and do not indicate non-activity.

3.6.3 UCA data on spatial arrangements within the different zones

3.6.3.1 The assemblage: production materials, cores, debitage and products of primary flaking

- ***The aggregate pattern***

When the data from the various levels are combined, the UCA delineates pronounced clustering of classes of materials used in knapping and generated through production, to form in medium, high and very high-density clusters in squares directly on the talus (Appendix F:109). The aggregate of informal lithics also reflects a blanket distribution of low densities (0-5%) across the remainder of the grid. Cluster formations in the aggregate for chips and flakes are very different. Within a bland, homogeneous spread, flakes have only two cluster formations: one cluster forms across the fire space and another small cluster forms in the shared space, but not contiguous to the dripline. The other outlier in the homogenous distribution, as mentioned, is that the sum of chips forms one main inverted T-shaped cluster of 7 medium-density (6-10%) cells.

The combined data for flakes and chips link these two activities. It is, therefore, significant that the highest *range* (closer to 5%) for flakes/chips within low densities, forms around higher-density clusters. This is probably directly related to a distribution pattern of flakes and chips forming around a knapper and his anvil during lithic reduction (Pobiner 1999:90-2; Odell 2000:284, 297; Reeks 2003:Unisa experimental project).

- ***Patterning of sequential occupations***

Differential clustering is, however, immediately apparent when the broad sequential occupations for informal lithics are separated according to excavated layers. During the most recent occupations higher-density cluster formations of informal lithics (chunks/chips/cores/flake) (Appendix F:111-4) are found against the shelter wall and around fireplaces in the inner space extending towards the centre of the site. Variability in flake cluster formations (Appendix F:116) suggests that specific tasks were undertaken around individual fireplaces. The production of flake blanks to be reworked into scrapers can also account for this trend. The OBP lithic analysis yielded noticeable numbers of almost circular cortical quartz flake blanks resembling some of the scraper forms made on quartz pebbles.

The fact that bladelets cluster in such marked concentrations may reflect systematic production of numerous blanks, but also their versatility as inserts for composite tools for a range of

maintenance and toolkit production activities (Appendix F:117). Concentrations of bladelets suggest a flaking technique during which many blanks were detached from a core, or perhaps that bladelets were kept in a small bag or container (Deacon & Deacon 1999:118, Mitchell 2000:122). Blades show very irregular configurations (Appendix F:118). The main cluster formations are within the shared space, and mostly against the talus. I argue in chapter 4 that blades were probably expediently manufactured with specific tasks in mind. Blades, as can be expected, are more prominent lower down in the sequence.

Larger objects, such as primary cores and large fragments, are commonly distributed in areas away from hearths (Stevenson 1991:284). The distribution of cores during the recent occupations mirrors such a pattern (Appendix F:113). Squares removed from fireplaces display homogeneous distributions of most classes of production materials, or lower ranges within density-cluster formations, corresponding with relative distances removed from fireplaces. Such a bland, homogenous low-density distribution demonstrates that most production activities were also undertaken in other areas of the site, but in much lower intensities.

The above pattern is apparent up to level 5, which approximates 1500 years ago. The overall spatial structuring clearly reflects primary reduction stages in the sequence around and across from fireplaces. The five distinct clusters of cores (Appendix F:113) display several overlaps with chunks and chips, and also with primary blanks (flakes and bladelets). These are activities undertaken both by single-sex and mingled groups around specific hearths (Yellen 1976, 1977; Bartram *et al*.1991). Overlaps of different UCA data sets show a major focus on the northern line of fireplaces.

When core types are subjected to UCA, only pyramidal cores form a cluster in the private space (Appendix F:114). Radial cores also show some distribution variability. However, the relative low numbers of these core types make their distribution statistically insignificant. Dominant clustering of core types in the communal space is directly related to the high relative frequencies of cores, in particularly before 1500 BP. The sustained clustering of chips around fireplaces before 1500 BP confirms the structuring of hearth-related lithic production and maintenance activities throughout the sequence (Appendix F:112). The details on the lithics in chapter 4 emphasize an exponential increase from approximately level 4 in relative frequencies of most primary classes. This clearly relates to the well-established use of this

locality by larger groups well before 1500 BP when the focus of production was on the shared space.

3.6.3.2 The assemblage: the formal lithics

- ***The aggregate pattern***

When the UCA data of the formal component from the various levels are combined, the distributional pattern corresponds with cluster formation of informal lithics (Appendix F:110). A homogeneous spread of low densities across the grid is apparent, except for the talus where one major cluster of medium to very high densities for total formal lithics is again apparent. When formal tools are segregated according to types, the UCA is less homogeneous (Appendix F:110). Whereas the major clustering of formal tool types remains in Zone 1, there is greater variability in the spatial structuring of activities. This can be tied to the use of specific tool types to perhaps produce other classes of formal tool types and/or in the manufacture of subsistence equipment or maintenance tasks.

Three classes exhibit such differential structuring across space. Backed bladelets are spread in low densities over the larger part of the grid, except for blank central areas of non-use (Appendix F:110). One medium-density cell is tied to the northern fireplace, which is focal in most classes of materials during more recent activities. Their main use, is however, on the talus where cluster formations dominate. Borers and awls are similarly spread out, but with two main clusters (Appendix F:110). The first is a medium-density cell, which again forms across the northern fireplace. The remainder of piercing tools cluster in medium to high densities in the primary distributional area onto the talus space. Adzes and spokeshaves show distinct cluster formations in both the private and shared spaces (Appendix F:110). Only a few specimens of spokeshaves, adzes and burins were recovered, which suggests their use in object-related tasks. Segments display a homogeneous distributional pattern, but with two clusters in the communal space (Appendix F:109). According to the aggregate for scrapers the bulk of these tools was used in the communal space behind the dripline (Appendix F:110).

- *Patterning of broad sequential occupations*

When the sum of all formal tool types is separated into chronological phases, scatters of small cluster formations in the private space are overwhelmingly attached to the line of fireplaces during the more recent period. The dominantly hearth-linked distribution of the formal tool

component conforms to the general pattern. It is, moreover, significant that whereas informal lithics are spread across the excavated grid, the UCA for the formal component show blank cells, where no formal tools were manufactured or used. High-density cluster formation of formal tools in the open space before 1500 BP mirrors the general trend, and confirms sustained emphasis on this space. The much higher relative proportions of stone in the open space before 1500 BP tend to mask distributional diversity. While the UCA is extremely valuable in delineating patterns, the smoothing of data can blur finer patterning. The sequential formal tool component, which has more diversity in patterning and sharper resolutions within densities, can be used to demonstrate an evident activity-related structuring of space around fireplaces, which is not always clear from the UCA densities (see Appendices F:109, 123)

- *Scrapers*

The homogeneous low-density values in scraper distribution are interspersed with scattered concentrations and solid blocks of medium to high-density cells defining areas of intensive scraper production/use (Appendix F:120). Scraper clusters are in general attached to the inner area around fireplaces. It is notable that not only more of the scraper clusters extend towards the central space, but that some single-cell clusters indeed form in these squares. The high frequencies before 1500 BP (Layer 5) are accompanied by more cluster formation in the communal space. Blank cells for scrapers within the shared space during the more recent occupation underline a pattern of localized activities and structured space analogous to formal tool patterning. The fact that scraper clustering is not apparent in the private space in the two penultimate layers can be ascribed to the high volumes of lithics, which mask patterning.

As small scrapers represent the bulk of these tool types, a similar composition is apparent when medium and large scrapers are removed from the computation (Appendix F:121). Backed scrapers are not as uniformly spread and the UCA indicates highly divergent concentrations (Appendix F:122) Their numbers are too low in the upper levels to make distributional clustering significant. Backed scrapers are more common (see also chapter 4 on the lithics), earlier in the sequence. The use of scrapers across the site results in low densities and an apparent homogeneous distribution. However, higher values within the range of low densities for scrapers in the inner space, confirm the use of these tool types around fireplaces. Although medium and large scrapers are present throughout the sequence, the UCA demonstrates higher relative densities in the communal space. Large scrapers cluster in two

main distributions. A cluster of three cells is formed contiguous to the talus, and another with similarly rich high to very high densities in the central zone. This pattern echoes blade distributions where pronounced clusters of high densities most probably reflect special tasks.

- *Groundstone including grooved stones*

As the groundstone types contain relative small numbers, they are discussed as aggregates (Appendix F:125). The patterning is not uniform. Lithic rings cluster in the private space, with a more pronounced presence in the communal area. Usewear and residue analysis suggest secondary use of lithic rings. The rings are discussed in more detail in chapters 4 (lithics) and chapter 5 (pigments).

Punches, upper grinders, anvils and nutting stones occur in low densities over a large part of the grid, but some blank cells reflect a complete absence (Appendix F:125). The focus in the initial phases of reduction on the communal zone is mirrored by major clustering of passive support pieces and percussion implements within this space. Smaller-sized anvils were found around fireplaces, and likely featured in the production of beads and bone tools analogous to observed ethnographic practices (Marshall 1961:fig. 5, 1976a:305; Yellen 1977:97; Wadley 1987:251-2; Mason 1988:216, photo 94). Hammer stones/upper grinders show a somewhat diffused spread of low densities with only one hearth-connected cluster and two clusters in the open space (Appendix F:125). This pattern displays some overlap with punches. The main cluster formation for punches in medium to very high densities in the shared space can be linked to the production of lithics. The central area does not feature prominently in high-density cluster formations. However, various classes of lithics and debitage, anvils and miscellaneous groundstone work in medium to very high densities do show relative low levels of different types of activities. The one cluster for nutting stones also protrudes into this space and is linked to small fire patches where nuts and haematite were roasted (Appendix F:125). The relative frequencies for haematite for this area (approximately 28%) are also high. The composite UCA for grooved stones demonstrates distribution across the grid (Appendix F:125). Cluster formations are prominent against the back wall, in the central space and behind the talus.

The sequential distribution of grooved stones show marked relative changes over time (Appendix F:124). The UCA diagrams do overlap, only in differential configurations for each

consecutive layer. Distinct cluster formations for grooved stones suggest that their distribution is not random, but linked to specific activities. The clusters form within all three zones. During the more recent occupations grooved stones are pronounced across the inner and central space. It is notable that grooved stones mostly cluster in relative high values, and without the background noise of uniform low densities common to most classes of recovered material. The pattern underscores that some tasks were clearly undertaken in particular contexts. During the earlier sequence discrete clusters form in all the main areas. In the shared production space medium to very high densities can be linked to the production of bone sections for composite arrows, and also bone awls. A pronounced emphasis on hearth-related activities in the private space through time is underscored by a major block formation of grooved stones, consisting of seven cells, in deposits dating to approximately 2000 years ago. The deeper levels also yielded very high quantities of OES beads (Appendix F:126) and fragments (see chapter 6), and some worked bone from around fireplaces. Their co-ccurrence with so many grooved stones suggests intensified beadmaking and bone tool production (see chapter 6).

3.6.3.3 The assemblage: pigments and ceramics

The collective UCA for pigments displays uniform low densities over the main part of the grid (Appendix F:109). It displays only one major configuration, consisting of a bar with five grid cells in medium to high values, which clusters against the talus. When separated into broad sequential stages, the UCA for pigments mirrors the now familiar focus on the inner area during more recent use of the shelter (Appendix F:115). A few clusters also form in the central space during this time. It is significant that the highest densities of pigments (approximately 29%) in the main central cluster correspond with fire patches found in contextual proximity to a stone slab with circular depressions, an upper grinder and also the greatest values for miscellaneous groundstone objects (see chapter 5). Before approximately 1500 years ago, the main pigment clusters form immediately behind the dripline. This mirrors the tendency for most of the dominant configurations to cluster against the talus and within the communal space.

The composite UCA for ceramics shows one block of six cells with medium to high densities in the shared space (Appendix F:129). It is significant that the bulk of decorated Bambata ceramics (54%) is attached to fireplaces and the inner area (Appendix F:129). The functioning of Bambata as containers for ochre in utilitarian purposes and in ceremonial contexts is addressed in chapter 7.

The sequential UCA diagrams (Appendix F:128) present a random clustering of ceramics, but with an overall focus on the open space. The most recent use of ceramics is displayed in low densities across the living space, interpolated with clusters that extend from the central area onto the talus. The earlier (deeper) sequence reflects an even more segregated distribution, in which cluster formation for virtually all ceramics is apparent in the communal space. The high values within the clusters can, to some extent, be ascribed to the fact that large-sized vessels were commonly recovered from the communal space, and they would deliver relatively more sherds on breaking. When expressed in percentages, this zone contains 73% of all ceramics representing a mass of 85% (see chapter 7). A pattern of homogeneous low densities in the private space confirms that vessels were also used in household contexts. High densities for ceramics in the open space can suggest that vessels functioned extensively in activities of men or in communal events. The most likely interpretation for the many vessels/sherds within the shared space probably relates to the ritualized use of this locality by different groups according to documented practices when pots with offerings were placed before painted images (see chapter 6).

3.6.3.4 The assemblage: exotics

Whereas the relatively low numbers of imports make cluster formation not statistically significant, their distributions do have relevance. Metal beads cluster directly against the wall. Their distribution is mirrored by the two clusters of glass beads in the inner space. A third glass bead cluster of six cells (low, medium and high densities) extends from the centre towards the shared space and overlaps with the location of a cowrie. Slag clusters in the open, shared space. This component of the assemblage is discussed in chapter 6 with the non-lithics, and it suffices to point out that the bulk of the ornamental objects collected within the inner private arrangement (Appendix F:129).

3.6.3.5 The assemblage: the production of beads

Band alliances, which are universal in forager organization, are accompanied by a range of activities generating large quantities of debris. Beadmaking, during which women and girls share stories and company around fireplaces, is especially prominent. This is also a major activity undertaken during multi-group visits, as seen in ethnographic observances. The role of beads is discussed with non-lithics, so that only the spatial arrangement is detailed here. The dominant clusters form within the inner areas as can be expected with larger volumes of

beads being produced around the household fireplaces. The spatial distributions for grooved stones, borers and awls (Appendix F:125) strongly match distributions of OES beads and debitage (Appendix F:126-7) Since most tools are multi-functional these tools certainly featured in other production and also maintenance tasks.

3.6.3.6 The faunal assemblage

The faunal assemblage displays essentially a homogeneous distributional pattern of low bone densities across the living space. The cleanup of fireplaces in a sweeping arch, discard onto peripheral areas, patterning according to tossing principles (Binford 1978,1983; Bartram *et al*.1991), and special purpose fires can all account for a uniform spread. Faunal elements are moreover, dispersed through sharing. Higher range values, within an apparent homogeneous spread of low densities, occur in the space directly across fireplaces (Appendix F:130). At open camps primary bone discards take place within or near butchery and consumption areas (Bartram *et al*.1991:103). Clusters of medium densities form mainly around fireplaces. Faunal distribution in general displays an interesting configuration in tending to cluster at some distance removed from fires and towards the central, and also talus, areas. This pattern can relate to the use of bone in tool production. It is, however, more likely that extreme fragmentation of fauna from around fireplaces and therefore lower rates of recovery, accounts for the spatial variations (see also chapter 6). The fact that the upper levels have in general higher faunal values across the inner space, conforms to the general pattern of intensified use of the private area during the last occupations. Discrete formations of highest-value densities are also apparent around fireplaces earlier in the sequence, but are more pronounced in the communal space, and again mirrors the general structuring of space.

Cracking of bones on stone anvils to get at marrow (Bartram *et al*.1991:103), contributes to random spread of bone flakes away from hearth areas. The spatial distributions of fauna (Appendix F:130) besides conform to the patterning found for grooved stones (Appendix F:124-5). Long-bone splinters and stone flakes, used in the manufacture of bone awls and arrow sections, were recovered from discrete ash and charcoal patches, and in close proximity to anvils and hammer stones. The distribution patterns at these materials at OBP are analogous to patterns observed for the manufacture of bone tools in archaeological contexts in the western Cape (Smith & Poggenpoel 1988:104-15). Data for bone tools are not provided as the analysis is still pending.

3.6.3.7 Macro plant remains

Whereas plant materials do occur in the communal areas at OBP, a primary deposition around fireplaces mirrors food processing practices at open camps (Yellen 1977:145). Gathered plant foods are prepared and consumed at individual fireplaces (Yellen 1976:64-5; Henry *et al.* 2004:22). Fist-sized nut cracking stones are left at camp sites to be reused. Nut-cracking stones are usually confined to hearth areas and found with vegetable remains mixed with other manufacturing debris (Yellen 1976:64-5,1977:143). At OBP the UCA diagram for plant remains especially highlights the position of fireplaces within the shelter (Appendix F:131). The data suggest that some of the carbonized seeds were also processed for non-food purposes (see chapters 6 and 8). The medium-density cluster formations of seed fruiting structures in the central areas, and on the talus, support inferences on snacking of plant foods (Marshall 1976a:88-9; Yellen 1977:144-5, 202), and processing for oil to be used with ochre and in hide-working).

3.7 EVALUATING UCA AT OBP: CONTRASTS, CONTINUITY AND CHANGE OVER TIME

3.7.1 Contrasts and continuities

Very high volumes of materials lower in the earlier sequence can mask finer resolutions within the distributional patterning of the UCA approach. However, in relying mainly on composition and densities, the model is largely free of the constraints hampering most quantitative spatial interpretations (Whallon 1984:275). In my final presentation of the UCA diagrams I removed numeric values in the UCA intervals to obtain greater visual clarity. Higher value ranges within the applied intervals (low 0-5%, medium 6-10%, high 11-15%, and very high >16%) are masked. The raw values were found to be useful for interpretative purposes. The UCA model *is* sensitive to relative values within a specific interval, and a use of colour gradations will show finer resolutions within proportionate densities. UCA, as envisaged under 3.5.1, effectively defined the differential structuring of the inner, private space as opposed to the more open shared locus. The composition of the assemblage cannot be used to show separate living floors, only the structuring of living space through successive visits. By smoothing and spreading the data across the space the procedure broadly delineated activity zones where similar types of materials cluster according to relative densities. Overlays of UCA highlight overlapping clusters of different tool types and close association with others (provided in envelope). A synthesis of different data sheets potentially signals specialized activities, for

example, production of beads.

This approach emphasized that the inner/open structuring of activities, which characterizes the social organization of virtually all hunter-gatherers, is also adhered to at OBP. The data demonstrate how space continued to be formally structured along observed conventional practices from open camps, but obviously within severely contracted boundaries as imposed by the terrain. The spatial pattern where bedding patches against the wall are fronted by a line of fireplaces, is in accordance with the almost universal organization of space at cave and shelter localities and re-use of existing structural features (see Site diagram 3). Whereas the aggregates of the tool types display a pronounced emphasis on the communal space, which in part is attributable to the exponential increases of materials introduced to the site, the data also demonstrate how some hearth-tethered activities continued to be scheduled for the inner private space.

UCA is valuable to differentiate between activity-related and time-related cluster formations at OBP. The highly variable distributional densities of the various classes of formal lithics (where altogether blank cells signal areas devoid of use), clearly demonstrate segregation of work space. The lithics and support objects, which feature in the production of tools, do not show such partitioned patterning. Communal use of heavy, bulky anvils and percussion tools is suggested by their relatively random spread in differential densities across the grid. The UCA data also highlight pronounced clustering and overlapping distribution of blanks produced in a primary reduction sequence, namely flakes, bladelets and blades, but also the striking distributional differences between types. Whereas a degree of this pattering, and in particular for flakes, is clearly linked to changes in site use over time, the very marked and discrete clustering of the different types of blanks suggest production and use for specific tasks within a structured space. The very high volumes of lithics in the shared space mask a sustained use of the private area for segregated activities. However, scatters of formal tools clearly remain attached to fireplaces throughout the sequence. This is even more pronounced during the more recent occupations when formal tools are overwhelmingly tethered to fireplaces. A pattern of hearth-related cluster formation, corresponding with visits by smaller family groups, is reflected by most types of items.

UCA defines general patterns in the inner/outer structuring of space. In addition, the model

assigns finer and more precise resolutions through proportional densities within clusters, and often also by the higher values within a particular interval. Formations from the inner space tend to display higher relative densities in cells alongside and across fireplaces, which conforms to toss and drop zone models (Binford 1978, 1983; Carr 1991; Keeley 1991; Nicholson & Cane 1991; Stevenson 1991). Clusters of exotics forming in the space directly against the wall may indicate that private goods were stored inside sleeping areas. Bladelets display a similar pattern, with marked clustering in wall space during the last occupation events. High-level densities can indicate storage in small bags. Smaller items on peripheries escaping cleanups and size-sorting processes may contribute to such a pattern (Stevenson 1991:275-6).

The UCA distribution patterns for activities in the central part of the OBP site suggest a similar utilization of marginal areas as displayed by intracamp patterning at open-air encampments (see also Yellen 1997:70-1 for diagrams, 85-97). At OBP debris from production and maintenance tasks overflow into this space, and are reflected in lower densities within cluster formations. Other relative high-density clusters can be linked to fire patches documented for this zone. The overall homogeneity of the central area, with relatively few rich cluster formations, derives not only from cultural and behavioural practices, but certainly reflects the impact of the natural site formation processes recognized for OBP and discussed under 3.3.

The particular structuring of space during multi-band occupations and structuring of living areas by small hearth groups, is not mutually exclusive. Throughout the more prolonged band alliance visits most of the activities around fireplaces are, as argued above, structured along broadly similar lines, but in different degrees of intensity. This applies to the multi-functional use of tool types, which can be linked to the nature of social groupings (Blankholm 1996; Silberbauer 1996; Andrefsky 1998). Objects featuring in the meeting of social obligations are often manufactured in communal contexts, and are correspondingly more valued (Yellen 1977:91; Wadley 1987:15). The changing densities and variety of debris around fireplaces, from the upper sequence to the deeper levels, reflect both hearth group and also multi-band activities.

The cleanup of fireplaces, other refuse disposals and dumping of knapping debris removed unknown proportions of the deposit. However, primary depositions and close juxtaposition

within all zones, as evident from the UCA diagrams of different tool types, reflect a large measure of spatial integrity. High densities in the rich clusters of cultural material correspond with the toss and drop zones documented in ethnographic contexts. The attributes inherent to the UCA approach ensure that constraints imposed by such high volumes do not severely inhibit distributional patterns in spatial behaviour.

3.7.2 Change through time

Whereas adjustments to change in economic and social relationships are mainly reflected in material remains, the structuring of space may also infer on responses. A major function of the UCA at OBP is highlighting marked changes in site focus over time. The UCA sequential diagrams demonstrate that the inner private area was more intensively used during more recent events. This pattern is analogous to the behaviour of small hearth groups. The data from sites in the western Cape suggest that small groups began to use shelters more intensively after contact with herders, and that such localities were often the last recourse of small surviving groups during hostilities (Parkington & Mills 1991:359). In the Waterberg shelters were reportedly used as places of refuge (Schlömann 1898:66), but also avoided during the late phases of contact (Dornan 1917:47). Such changes are in accordance with ethnographic observances that caves and shelters could be both a refuge, but also places to be avoided (Stow 1910:179, 227-30). Episodic utilization of OBP conforms to patterns of constant movement documented for the remnant scattered groups in the Waterberg region (R3129/59; Stech 1885; Schlömann 1896, 1898; Keane 1900, 1920; Hammond Tooke 1908; Marais 1928; Kirby 1940; Breutz 1989). Proportional densities in lithics and non-lithics reflect a decline in overall use of this locality until the shelter seems to have been abandoned by at least hunter-gatherers themselves, if not by the other groups in the region.

In the following chapters I use the recovered data to argue and demonstrate that the position of OBP within the landscape gave meaning to this locality, and that this locality was, accordingly, differentially used by various groups over time. The UCA, for example, clearly shows a spatial and temporal overlap in Bambata pottery and some of the high-density pigment clusters, which may be significant in the interpretation of these enigmatic ceramics, as discussed in chapter 7.

Pulses of intensification are evident at approximately 1800 BP, and again at 1500 years ago. High frequencies in the production of all types of tools and ornaments at approximately 2000 years ago suggest that this locality must have been focal within the hunter-gatherer landscape. High densities of specific types of materials clustering in the communal space, and around fireplaces, reflect groupings where tasks carried out probably included manufacturing gifts for exchange. The many thousands of OES beads and production debris are consistent with the scheduling of aggregations by large groups. Such high volumes of all materials clearly do not

fit the requirements of small nuclear groups. Merely the collection of the huge amounts of stone and pigments requires high energy inputs. Densities of cultural materials in earlier occupations are too high to be generated through episodic visits of small bands composed of core family members.

Flexibility and diversity are fundamental to hunter-gatherer organization and there is a large degree of variability in intrasite patterning, which depend on behavioural processes and decision-making (Bartram *et al.* 1991:84-99; Kent 1991:44-57, 1996:4; O'Connell *et al.* 1991:74; Barnard 1992:236, 240; Guenther 1994:25; Whittle 1996:35). Although the UCA approach was found eminently suitable for interpreting spatial patterning, the model and the data cannot be used to reproduce behaviour of the hunter-gatherers themselves. The changing configuration of groups during sequential visits translated into differential structuring of private spaces; the length of a stay was never constant; the environment and hunting luck provided different food packages and raw materials; and people are, moreover, idiosyncratic and opportunistic. The data that I recovered only show that OBP remained a favoured place for a very long time, and that activities were organized and waste dumped with such persistent patterning that a broad framework for the structuring of private and shared social space can be construed.

3.8 CONCLUDING REMARKS

The ways in which the inhabitant of the shelter structured their living space over time impacted on the deposited assemblage. I pointed out several post-depositional site formation processes that contributed to the specific nature of the deposited assemblage at OBP. The discussion illustrated some of the agents that were active in the formation of the archaeological deposit at OBP. Fowler *et al.* (2004:441) maintain that intrasite spatial arrangements, such as fireplaces, but also post-depositional processes that preserve or destroy evidence for cultural behaviour, account for the assemblage excavated by the archaeologist. In this chapter I discussed the complex nature of the excavated assemblage at OBP. However, it is my own analyses and interpretations which structure the outcome of the studied assemblage.

The excavations provided data on the local sequential occupation, which will be used a basis for a reconstruction of hunter-gatherer occupation of the Limpopo region. The recovered assemblage reflects changes and continuities within the structuring of space at OBP. Yellen (1977:95) says that 'a pattern *does* (his emphasis) underlie the spatial distribution of specific activities'. The UCA diagrams, on which much of the foregoing discussion is based (Appendix F), provide visual representations of the structuring of space. The finer details of the different classes of material generated through structuring of activities across the shelter space are further discussed when the recovered data of the excavations are reviewed in chapters 4 to 8.

The next chapter provides detail on the lithics. In the discussion I focus on the various tool types recovered and also sequential changes in frequencies and classes of tools.

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THE LITHICS

> Hunter-gatherers' material culture is typically deceptively simple. The inventories of artefacts are small but the design of most items combines low-energy manufacture, use of locally available materials, and versatility of use (Silberbauer 1996:24).

4.1 INTRODUCTION

In the previous chapter the site survey, excavations, stratigraphy and prominent site features were discussed in some detail. Results of radiometric dating on charcoal, seeds and OES were used as an aid to establish when the various depositional phases occurred. An overview of the stratigraphy of the archaeological excavations also included, of necessity, a general description of some of the recovered artefacts. In the following section the lithic artefacts, which form the bulk of the excavated material, are described. Flannery (1997:239) emphasizes the importance of examining the archaeological record before making observations about the fundamental underpinnings of the lifestyle of prehistoric people.

The preliminary and the subsequent analyses of recovered archaeological material revealed a marked difference in the raw material component at this locality when compared with sites on the Waterberg Plateau. At OBP fine-grained rocks of mainly quartz, quartz crystal and opaline materials are the basic geological raw materials used for lithics. Note that in the context of this study I use CCS (cryptocrystalline materials) as an umbrella term for opalines. Good quality fine-grained sources for lithics are associated with the Limpopo River, and were extensively used in manufacturing the lithic assemblage. Whereas quartz and felsite are also elements of the OBP assemblages, they represent the dominant rock types for LSA post-classic Wilton assemblages on the plateau. In chapter 8 I discuss procurement of raw materials in relation to territorial ranges. The primary context of nodules of CCS and quartz materials derives from outcrops of the basal Bushveld Complex basement rocks. Sources were subsequently exposed, eroded and materials transported by the archaic braided river system of the Waterberg and distributed within the Limpopo confluence region.

The formal stone tool collections in the study region from this period are, as previously indicated, broadly defined as classic Wilton assemblages, whereas those studied from sites on the Plateau are predominantly late or post-classic Wilton assemblages. Although differences between the LSA and MSA are not as clear as formerly suggested, it still holds that Holocene LSA assemblages, including those from OBP, exhibit a wider range of similarities

to the material culture of ethnographically known San groups than collections of Pleistocene age (Mitchell 1997:360). Apart from formal stone tools, the OBP lithic assemblage contains a range of items used in processing foods and non-food substances, and that also featured in the production of other implements and maintenance tasks. Tool types include upper and lower grinders, nutting stones, anvils, stone hammers, grooved stones and miscellaneous groundstone objects, such as fragments of flat stone rings, spatulate tools and palettes.

The initial excavations highlighted differential spatial utilization of the OBP shelter space, which were evident the classes of materials and deposition patterns across the habitation area. The UCA model, as discussed in chapter 3, was applied to raw data to reconstruct spatial patterning and scheduling of activities. In addition, the method emphasized intensified trends in site use and change over time. A marked differential use of space over time was also clear from densities of tool types and configurations of distributional patterns established from inherent data by the application of the UCA model.

Note that tables with data on the lithic component are included in Appendices A to E, and F(UCA)

4.2 SUBSISTENCE ACTIVITIES

The classification of subsistence equipment in various categories allows for inferences about not only prehistoric economies, but also non-subsistence-related activities that may signify personal performance and status within the band. Artefact assemblages are also used to infer the function of the OBP site. Current hunter-gatherers position camps to minimize food procurement activities. Anticipated use of a particular locality during the annual seasonal cycle correlates with specific kind of subsistence activities carried out at a camp (Yellen 1977:74-5). The tool assemblage at a residential camp, for example, should reflect multi-functional, generalised characteristics (Andrefsky 1998:198-202). Transient and special purpose camps of the Kua and Ju/'hoansi generally contain low-density scatters of informal tools and debitage (Bartram *et al.* 1991; Kent 1991).

Much has been written about the multivariate nature of past and present societies with a number of books solely devoted to the diversity found in hunter-gatherer lifeways (Kelly 1995; Kent 1996). This cultural diversity is mirrored in archaeological assemblages, with each site

exhibiting its own unique and complex range of artefacts that were used in a multitude of activities. At OBP variability is expected in relative frequencies of tool types and in different categories of formal stone tools, as well and changes in site function over time. Climatic changes after the LGM with rapid warming at the start of the Holocene would have influenced access to raw materials, resulted in different behaviours and in cultural change or continuity within change over time. The substitution, for example, of the Oakhurst with the Wilton becomes apparent in assemblages south of the Limpopo after 8000 BP (Mitchell 1997:371). At OBP changes in economic and social relations and disruptions in traditional technology during the historic period are also envisaged.

Typologies, based upon the morphology of prominent lithic artefacts within an assemblage, order tools into groups. Tools represent dynamic components of material culture, and they are shaped through processes of production, use and post-depositional change, until recovered by the archaeologist in their final form (Andrefsky 1998:29). Stone tools are modified through breakage, use and sharpening. All of these contribute to their morphology and result in tools of different shapes and sizes. Both ethnographic and archaeological data have, moreover, demonstrated that individual stone tools may be versatile and multi-functional and/or used expediently (MacCalman & Grobbelaar 1965:18-23; Blankholm 1996:37; Silberbauer 1996:63; Andrefsky 1998:189-210; Cowan 2000:594).

4.2.1 The OBP assemblage

Although the focus of the current chapter is on lithics, such a compartmentation is not always practical and some reference to non-lithics is essential for the discussion. An inventory by Blankholm (1996) for the classification of subsistence equipment in various categories (e.g. equipment used primarily for hunting, fishing or gathering, for the processing or consumption of food or in the manufacture of the foregoing), is applied to the assemblage as a tool to make inferences about prehistoric economies. This model also includes a category for equipment used in non-subsistence-related activities and objects prepared with high labour investment suggesting personalised prestige gear. Yellen (1977:73-4) also categorizes raw materials carried back to camp according to their eventual use as food items or to be used in the manufacture of goods. Different ways of classification and analyses give different answers. In as much as any classification is subjective, and also arbitrary, since most tools are multi-functional to varying degrees, the use of a classificatory model provides a more

comprehensive understanding of this particular assemblage.

A summary is now provided of the different categories of tools within the OBP assemblage. The different categories are then discussed in more detail. In the discussion I focus on change through time, which reflects not only differential tool production patterns, but also changes in the general utilization of this particular site and in the structuring of space by different social groupings. Selections from tables and data on lithics are, when necessary, used in this section to illustrate the discussion, but are also presented in more detail in the appendices. I now use Blankholm's (1996) inventory to structure and provide a synthesis of the different classes of equipment found at OBP:

Equipment used directly or primarily for hunting, fishing or gathering			
	Wood	Bone	Stone
Composite parts of arrows, including projectile components	✓	✓	
Bows/wood with notched ends, snaring equipment	✓		
Backed bladelets: multipurpose as possible inserts			✓210
Unretouched bladelets: multipurpose as inserts			✓3830
Flakes: multipurpose cutting and skinning			✓11182
Blades: multipurpose cutting tools			✓743
Miscellaneous backed tools			✓16
Segments as likely inserts for projectiles			✓33
Digging sticks	✓		✓1

Equipment used for the processing, consumption and storage of food				
	Ceramics	Plant origin	Bone/shell	Stone
Pottery: 1043 sherds, 136 vessels	✓136			
Hammer stones/rubbing stones/pestles				✓58
Lower grindstone				✓1
Nutting stones				✓2
OES flasks			✓	
Tortoise bowls			✓1 fragment	
Bone and stone knives			✓	✓
Digging sticks		✓		
Fire sticks		✓		

Equipment used for the manufacture of tools for groups 1 and 2 above

		Bone/Shell	Stone
Cores			✓2875
Hammer stones/punches/rubbing stones			✓58
Blocks of stone as objective pieces such as anvils			✓49
Lower grinders			✓1
Grooved stones			✓147
Small scrapers			✓1890
Backed scrapers			✓206
Medium scrapers			✓221
Large scrapers			✓58
Flakes: multipurpose			✓11182
Bladelets: multipurpose			✓210
Blades: multipurpose			✓3830
Borers		✓	✓312
Awls		✓	✓184
Adzes			✓11
Burins			✓1
Spokeshaves			✓8
Bone spatulas		✓	
Fire sticks	✓		
Hide stretching pegs	✓		

Equipment used for non-subsistence related activities and objects prepared with high labour investment or symbolizing status

	Other	Bone/shell	Stone
Ochre processing and beadmaking			
crushing/hammer/rubbing stones			✓
lower grinder			✓
crushing stones with depressions			✓
anvils			✓
Palettes, mostly with ochre, and diverse groundstone			✓19
Ochre paste in horn container	✓		
Strychnos shells and possibly ceramic vessels as pigment holding vessels	✓		
Lithic rings			✓5
Beads: OES		✓	
Beads: shell		✓	
Beads: glass	✓11		
Beads: metal	✓3		
Cowrie: modified, with ochre		✓1	
Pendants: baboon canine		✓1	
Modified metacarpals with ochre		✓2	
Engraved arrow		✓1	

Raw material imported and debris from production activities

	Bone	Stone
Chunks		✓24981
Chips		✓28008
Pebbles		✓1303
Quartz crystal chunks		✓1681
Quartz crystal chips		✓1374
Unmodified quartz crystals		✓580
Pigments		✓9474
Faunal remains: bone and shell	✓	

4.3 THE LITHIC TYPOLOGY

A splinter of stone which is white,
A splinter of stone which is white,
A splinter of stone which is white ...' (Bleek & Lloyd 1911:22)

The above attempt to translate what is probably a rather narrow range of recovered artefacts into activities at OBP demonstrates the inherent problems with any archaeological assemblage. Biesele (1993:10), in reflecting on the way of life of current hunter-gatherers, says that most of their 'technology is carried in the mind as information and technique, in fact, rather than in the hands or on the back'. Blankholm (1996:31 in quoting Dumont 1987:88) argues that it is not always possible to confidently correlate tool types to 'either a single manner of use or worked material on a scale greater than that of the individual site'. However, in view of the recognition of pan-regional stone tool manufacturing technologies and a relatively standard range of formal tool types, analyses of LSA assemblages in southern Africa are generally based on standard classificatory schemes. The following discussion accordingly centres on general aspects of the assemblage, with a focus on morphological attributes, (Deacon 1984a; Wadley 1987, 1993).

The next table details the total lithics that were imported to OBP. The data include raw material components, pigments, primary flaked products, formal tools and groundstone.

OBP lithic inventory and different rock types (including pigments)

	CCS	Quartz	Quartz crystal	Felsite	Quart-zite	Haema-tite	Sand-stone	Soap-stone	Schist	Shale	Horn-fels	Total
Formal tools	256	347	115	53	2	2						775
Scrapers	1344	700	134	185	9	3						2375
Bladelets	869	1782	639	472	52	16						3830
Blades	44	156	2	379	126	36						743
Flakes<30	1441	3967	1439	2111	312	108			1			9379
Flakes>30	91	335	6	899	356	114	1		1			1803
MSA	1	5		47	10	1						64
Chunks	3457	14183	2261	4378	2960	8273			1			35513
Chips	3357	19600	1374	3779	1272	1203						30585
Pebbles	16	1196		7	73		11					1303
Cores	365	1890	370	191	28	30				1		2875
Grooved stones				1	17		122		6	1		147
Lithic rings						1	1	1		1	1	5
Palettes					2		2	1	1			6
Diverse groundstone				1	1	2	1	8				13
Anvil/ nutting				2	47							48
Lower grinder					1							1
Hammer/ rubbing		4		8	15		1					29
Punch		5		1	23				1			30
Total	11241	44170	6340	12514	5306	9789	139	10	11	3	1	89524
%	12.6	49.3	7.1	14.0	5.9	10.9	0.2	0.0	0.0	0.0	0.0	100.0
%	12.556	49.339	7.082	13.978	5.927	10.935	0.155	0.011	0.012	0.003	0.001	100.000

4.3.1 The informal tool inventory: manuports, raw materials and knapping debris

Ethnographic studies found no direct correlation between areas where the Ju/'hoansi collected raw materials and the camp site where they were processed (Yellen 1976:67, 1977:76). Most materials other than stone are easily transported, and manufactured articles often take a long time to complete. Partially finished goods are carried from one camp to another. Yellen (1977:77) says that one general rule does apply: 'the longer a camp is occupied, the greater

the probability that any particular activity will occur there'. Refuse from diverse activities, and also ash dumps, therefore tend to accumulate in higher densities at encampments which are used for extended periods. Whereas there is doubtless overlap of short-term events at OBP, dense production debris and relative high percentages of formal tools argue for extended visits, and that high levels of tool manufacture and maintenance tasks were features of these stays. The next table summarises types of rock materials imported to the site to be used in the production of lithics. Included in these figures are also quartz crystals, of which 580 were unmodified. Quartz and quartz crystals at 67.2% are the dominant raw materials relative to all other groups. An aggregate of 79% of fine-grained materials comprises quartz, quartz crystals and CCS, with the remainder taken up by felsite (13.7%) and quartzite (7.1%). The use of other materials is uniform, but statistically insignificant.

Whereas haematite does feature in tool manufacture, it is not entirely reflected in the chunk/chip categories. The bulk of haematite shows no evidence for knapping, and both chunks and chips were therefore incorporated under pigments. A more detailed discussion of haematite is provided in chapter 5, where I focus on pigments.

Frequencies of rock types for chunks and chips, cores and pebbles

	CCS	Quartz	Quartz crystal	Felsite	Quartzite	Haematite	Schist	Shale	Total
Chunks	3457	14183	2261	4378	2960	2	1		27242
%	12.7	52.1	8.3	16.1	10.9	0.0	0.0	0.0	100.0
Chips	3357	19600	1374	3779	1272				29382
%	11.4	66.7	4.7	12.9	4.3	0.0	0.0		100.0
Pebbles	16	1196		7	73		11		1303
%	1.2	91.8	0.0	0.5	5.6	0.0	0.8	0.0	100.0
Cores	365	1890	370	191	28	30		1	2875
%	12.7	65.7	12.9	6.6	1.0	1.0	0.0	0.0	100.0
Haematite						9474			9474
%	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0
Total imports	7195	36869	4005	8355	4333	9506	12	1	70276
%	10.2	52.5	5.7	11.9	6.2	13.5	0.0	0.0	100.0

The frequencies of materials in the informal categories as illustrated reflect the general trend of a decrease in numbers towards the more recent occupations. This applies to virtually all

classes of material culture, but excludes exotics from the contact phase, which as may be expected, inversely increase. Whereas some of the quartz pebbles — that comprises 92% of this class — could have been naturally introduced from conglomerates within the sandstone shelter formation, this category mirrors the general marked increases in the lower, earlier sequence and corresponds with differential use of space. Schist pebbles, which are quite common within the rollstone conglomerates that erode from the sandstone matrix, are present in low numbers in this category. Schists were certainly used to produce some artefacts and then mainly flakes and several grooved stones. Pebble cores at 30.1% also represent the most common core type. The concentration of 65% of all pebbles in the zone directly against the talus parallels the general trend for all stone. The data therefore confirm that most pebbles were anthropogenic imports.

Relative percentage frequencies through time: informal categories

	S	1	2	3	4	5	6	7	8	9	10	Total
Chunks	1.0	1.4	1.9	2.5	3.4	6.3	9.2	12.6	14.3	18.0	29.4	100.0
Chips	1.0	0.9	1.1	1.7	4.2	7.3	7.9	13.2	20.7	20.3	21.9	100.0
Quartz crystals	2.3	0.6	0.7	1.0	1.8	3.4	5.3	12.8	23.9	21.6	28.5	100.0
Pebbles	2.3	4.0	3.5	5.1	4.5	7.4	13.1	13.6	8.8	15.6	22.2	100.0
Haematite	2.3	3.5	3.5	3.0	5.4	9.5	8.4	10.0	11.6	15.8	27.3	100.0

There is much diversity in proportions of lithics in late Holocene assemblages. However, the informal component of 72.6% for chunks, chips, quartz crystal and pebbles at OBP is comparable with other sites such as Rose Cottage Cave in the Free State (Wadley 2000b:93-4). The large volumes of chunks and chips argue for intensive production activities, whereas some quantities of chips were likely produced through resharpening of tools (Wadley 2000b:94). The overall volume-density for the aggregate of the excavated material of informal tools per bucket, with a 10-litre capacity, is 61.32 tools against 2.24 per bucket for all formal tools including scrapers. The high numbers of chunks relative to cores and formal tools in the OBP assemblage are also very typical of LSA assemblages.

Frequencies of all classes of lithics excluding pigments and groundstone

	Chunks/ chips/ quartz crystals/ pebbles	Cores	Flakes	MSA flakes	Bladelets	Blades	Scrapers	Formal tools	Total
Total	57927	2875	11182	64	3830	743	2375	775	79771
%	72.6	3.6	14.0	0.1	4.8	0.9	3.0	1.0	100.0

The percentage of imported materials rises to 75.3% when pigments are included. The next table illustrates relative quantities and percentages of all stone recovered. It is presented with grouping of the primary products of flaking, namely flakes, bladelets and blades, includes all formal tools combined, and also the groundstone and grooved stone classes:

Frequencies of grouped classes of lithics

	All chunks/ chips/ pebbles/ pigments	Cores	Flakes/ bladelets/ blades	Formal tools/ scrapers	Groundstone/ grooved/ anvil/nutting/ hammer/punch	Total
Total	67401	2875	15819	3150	279	89524
%	75.3	3.2	17.7	3.5	0.3	100.0

Cores

Cores are stone manuports exhibiting three or more negative scars from the deliberate removal of usable flakes and blanks to be used in manufacturing other tool types (Deacon 1984a). In core rejuvenation the striking platform is tidied for further knapping, and this process produces core preparation/rejuvenation flakes. Cores generally show much morphological variability within any technological type, and among different types, and the size of raw materials influences the kind or reduction technology used (Andrefsky 1998:138, 226-8). Raw material size directly relates to the seven types established in the classification for cores at OBP. In view of the study objectives detailed technological analyses, such as reduction sequences and the taxonomy of cores based on methods of reduction, were not pursued (Conard *et al.* 2004:12-6). The following table shows the frequencies of core types. Most of the OBP cores are pebble and informal types, followed by core-reduced and then bladelet cores. The bulk of radial cores, excepting one, originated from deeper levels, and in particular layers 9(1) and l0(8). The two pyramidal cores — both CCS — also occur lower down in the sequence, namely layers 7 and 9 respectively. The symmetry of natural crystals, their flat surfaces and also cleavage

propensities (Miller 2006:47), make these minerals eminently suitable as cores. The relatively low 8.7% use of quartz crystal materials in the production of different core types, is doubtless skewed because many of the quartz crystals exhibit removal facets, but less than the three required for formal classification, and were accordingly grouped with chunks.

Frequencies of core types

	Irregular	Pebble	Quartz crystal cores	Bladelet	Radial	Pyramidal	Core reduced 1 platform	Core reduced 2 platforms	Total
Total	730	865	251	395	10	2	500	122	2875
%	25.4	30.1	8.7	13.7	0.3	0.1	17.4	4.2	100.0

Proportionate frequencies of rock types used for cores demonstrates that quartz and quartz crystal, when combined, are the primary materials for cores with a figure of 78.6%. Whereas felsite and haematite have low overall prominency, the irregular core category shows a different pattern in that 23.4% of cores are on felsite and 3.8% on haematite. For this core type the use of CCS and quartz are alike at 35% each. Again raw material volume most likely accounts for this trend.

Bladelet cores are mainly on quartz and quartz crystal at 74.2% and 4.6% respectively, with 18.2% on CCS. The relative proportions of bladelets (including backed blades) produced on quartz and quartz crystal cores correspond with 62.5% on these materials, whereas some 24% of bladelets were made on CCS cores.

Core-reduced pieces are considered worked-out bladelet cores (Deacon 1976:57). If core-reduced pieces and the two pyramidal cores are included with bladelet cores, it makes up 35.4% of all core types that could have been used for the production of bladelets. Whereas many of the quartz crystal cores — and in particular smaller crystals — were presumably used for bladelet manufacture, this rock type also featured in producing scrapers, borers, awls, segments and flakes. Combined figures for bladelet cores, core-reduced pieces, and doubtless some quartz crystal cores, give a much higher overall use of quartz and quartz crystal as cores for the production of bladelets.

Comparison of percentage frequencies of rock type for cores							
Core type	CCS	Quartz	Quartz crystal	Felsite	Quartzite	Haematite	Total
Irregular	35.2	34.5	0.3	23.4	2.6	3.8	100.0
Pebble	0.5	97.9	0.0	1.0	0.3	0.2	100.0
Bladelet	18.2	74.2	4.6	1.5	1.5	0.0	100.0
Quartz crystal core	0.0	0.0	100.0	0.0	0.0	0.0	100.0
Radial	30.0	30.0	0.0	40.0	0.0	0.0	100.0
Pyramidal	100.0	0.0	0.0	0.0	0.0	0.0	100.0
Core reduced 1 platform	3.4	79.8	16.8	0.0	0.0	0.0	100.0
Core reduced 2 platforms	8.2	78.7	12.3	0.8	0.0	0.0	100.0
Total %	12.7	65.7	12.9	6.6	1.0	1.0	100.0

The frequencies for cores parallels the general trend for all categories of markedly higher production in deeper levels earlier in the sequence, as is evident from the following:

Frequencies of total cores throughout sequence												
	S	1	2	3	4	5	6	7	8	9	10	Total
	22	56	63	78	84	217	390	549	370	491	555	2875
%	0.8	1.9	2.2	2.7	2.9	7.5	13.6	19.1	12.9	17.1	19.3	100.0

Analysis of patterning of materials imported for the lithic assemblage shows distribution across the living floor of the shelter, but with an evident focus on the space that abuts the talus, as is illustrated in the next table. In chapter 3 the threefold-division of the site into zones according to the arbitrarily imposed grid is explained. The formal division of space at OBP into two areas is based on ethnography, but more specifically on data for spatial structuring recovered from the excavations, and based on modelling by the UCA. These sets of data confirm an inner private space (against the wall) and an outer shared space (against the talus). Clustering of the bulk of quartz crystals (88.1%) and pebbles (77.6%), in the shared space confirms their import as raw materials for cores to produce flakes, bladelets and blades. The clustering of 83.3% of all cores within this space affirms a focus on primary production.

A relatively high presence of chips at 32.8% in the private space can be of behavioural significance. Tool manufacture and maintenance commonly take place around a fireplace where people place themselves in a semicircle (Marshall Thomas 1959:55-80; Marshall 1976a:84-6; Yellen 1977:87; Valiente-Noailles 1993:113-4). At OBP the fireplaces form a linear pattern against the wall with presumed seating space directly across. Reworking of primary blanks into tools and also resharpening during maintenance generate waste. The higher incidence of chips in blocks numbered 4 in the grid makes such groupings entirely feasible. The generally greater quantities of all raw material imports and waste in these squares relative to those abutting the shelter wall, support such an arrangement.

Whereas haematite features in the production of some tools, the data suggest that haematite was collected mainly for pigments. The 29.1% for haematite and ochre in the fireplace area is relatively prominent for this zone and can relate to the processing of pigments. Roasting not only intensifies the red colour, but also facilitates crushing. Similar processes have been observed in ethnographic contexts (Bleek & Lloyd 1911:377-9; How 1962:35; Arbousset & Daumas 1968:248). Discrete scatters of charcoal chunks and haematite pieces in the other two zones may relate to similar activities. At Ju/'hoansi and Kua camps analogous patches of charcoal with dispersed debris mark special activity areas (and there usually in the shade) where small fires were kindled to process nuts or vegetables, or snacks after a successful hunt (Marshall 1976a:88-9; Yellen 1977:144-5, 202; Bartram 1991:108).

Total percentage frequencies of imported materials across the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
Chunk	51.2	14.2	9.2	17.4	8.0	100.0
Chip	44.1	12.8	10.3	25.4	7.4	100.0
Quartz crystal	68.0	16.1	4.0	6.9	5.0	100.0
Pebble	48.7	16.3	12.6	14.2	8.2	100.0
Core	60.9	14.4	8.0	10.3	6.4	100.0
Haematite	48.5	12.7	9.8	15.5	13.4	100.0

Note: The formal division comprises only two areas: there is an outer, communal space formed by zones 1, 2 and 3; and an inner, formal space created by zones 4 and 5. Activities are of course not absolutely segregated, and there are considerable overflows into both formal spaces.

 open shared space

 private inner space

The talus, as outer boundary of discard, presumably contains much of the manufacturing debris. This is supported by lithics in the unexcavated section wall that runs parallel to the datum line. In chapter 3, when discussing the discard of manufacturing debris, I pointed out that the limited extent of most excavations inhibits the investigation of discard areas (Bartram *et al.* 1991:139; Nicholson & Cane 1991:305-18). The above figures of the recovered assemblage at OBP reflect only a sampled portion of the site. Within a superimposed grid prehistoric discard patterns additionally results in retrieval by the archaeologist of vastly reduced assemblage of often mainly debitage and abandoned tools. These limitations apply particularly to perimeter squares where significant proportions of manufacturing debris would have been deliberately disposed of in, or overflowed onto, the talus outside the living space.

4.3.2 Primary lithics

Flakes, bladelets and blades are the main products of any reduction process. The following data illustrate their relative frequencies, and for comparative purposes, the formal tool types are next indicated.

Relative frequencies of primary products of flaking

	Flakes < & > 30 mm	MSA flakes	Bladelets	Blades	Total
Total	11182	64	3830	743	15819
%	70.7	0.4	24.2	4.7	100.0

Relative frequencies of primary products of flaking and formal tools

	Flakes < & > 30 mm	MSA flakes	Bladelets	Blades	Scrapers	Formal tools	Total
Total	11182	64	3830	743	2375	775	18969
%	58.9	0.3	20.2	3.9	12.5	4.1	100.0

The next table shows the raw material component of the primary products of flaking. The various types of removals are then separately discussed.

Comparative uses of rock types for primary products of flaking

Total	Flakes <30 mm	Cortical flakes <30 mm	Flakes >30 mm	Cortical flakes >30 mm	MSA	Bladelets	Cortical bladelets	Blades	Cortical blades	Total
CCS	1116	325	70	21	1	770	99	39	5	2446
%	45.6	13.3	2.9	0.9	0.0	31.5	4.0	1.6	0.2	100.0
Quartz	1256	2711	166	169	5	910	872	76	80	6245
%	20.1	43.4	2.7	2.7	0.1	14.6	14.0	1.2	1.3	100.0
Quartz crystal		1439		6			639		2	2086
%	0.0	69.0	0.0	0.3	0.0	0.0	30.6	0.0	0.1	100.0
Felsite	1905	206	795	104	47	437	35	355	24	3908
%	48.7	5.3	20.3	2.7	1.2	11.2	0.9	9.1	0.6	100.0
Quartzite	280	32	293	63	10	52		120	6	856
%	32.7	3.7	34.2	7.4	1.2	6.1	0.0	14.0	0.7	100.0
Haematite	100	8	102	12	1	16		34	2	275
%	36.4	2.9	37.1	4.4	0.4	5.8	0.0	12.4	0.7	100.0
Schist	1			1						2
%	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	100.0
Sandstone			1							1
%	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Total	4658	4721	1427	376	64	2185	1645	624	119	15819
%	29.4	29.8	9.0	2.4	0.4	13.8	10.4	3.9	0.8	100.0

4.3.2.1 Flakes

Detached pieces or flakes, which are discarded without being used or modified into tools, are usually classed as debitage (Andrefsky 1998:17). Flakes were undoubtedly used for a variety of tasks on wood, meat and bone as suggested by artefact function studies and supported by ethnographic accounts (Andrefsky 1998:196; Williamson 2000). A man from the stone-using Kaokoveld Tjimba selected only four flakes among more than 20 quartz flakes of suitable size, shape and cutting edges, which he expediently manufactured at the kill site of a springbok. Ultimately only two were used, and while picking up one he said that 'with this I will skin from a springbok to a gemsbok' (MacCalman & Grobbelaar 1965:23, Plates 9-12:36-7). My primary classification and analysis included a detailed analysis of flake types at OBP. (The OBP data on the primary classification of all classes are available, but too extensive to present in a dissertation). Flakes constitute approximately 71% of the primary products of flaking. Whereas

sidestruck flakes are common, endstruck flakes make up the bulk of flakes, and core preparation/rejuvenation flakes are also integral to the OBP assemblage. Variability in flake morphology results from raw material differences, functional requirements and uselife (Andrefsky 1998:154). Small flakes comprise 83.4%, large flakes 16% and MSA material 0.6% of all flakes at OBP. The relative size of raw materials evidently influenced the end product as suggested by the 49.9% of flakes >30 mm made on felsite, as these materials are generally available in larger chunks. Felsite was also selected for flakes <30 mm, but the proportions differ with a much higher prevalence of fine-grained riverborne nodules, which are abundant in the region, but with size restraints. The production of larger flakes probably derives from functional requirements. However, the data show no clear patterning of deliberate selection of rock types for specific tasks.

At OBP haematite was apparently not extensively used for lithic production. Where haematite was selected as a raw material, it was commonly for the production of larger flakes, and in proportionally low numbers of flakes <30 mm, blades, bladelets and some formal tools. The trend is best illustrated from flake and blade categories. Whereas they do contain the highest proportions of flaked haematite, frequencies are only 2% and 4.9% relative to other raw materials. That haematite was primarily collected for use as pigments, is suggested by relative figures for chunks, where this material comprises 23.3% of all chunks against 12.3% for felsite. However, their relative proportions are reversed in, for example, the frequencies of flakes, with 27.2% on felsite and 2% on haematite. The differential use of rock types for the two size classes of flakes is illustrated below.

Relative percentage frequencies of rock types used for flakes

	CCS	Quartz	Quartz crystal	Felsite	Quartzite	Haematite	Sand-stone	Schist	Total
Flakes<30	15.0	42.0	15.0	23.0	3.0	1.0	0.0	0.0	100.0
Flakes>30	5.0	18.6	0.3	49.9	19.7	6.3	0.1	0.1	100.0
MSA >30	2.0	7.8	0.0	73.4	15.6	1.6	0.0	0.0	100.0
All flakes	14.0	38.3	12.8	27.2	6.0	2.0	0.0	0.0	100.0

A cortex is produced by chemical or mechanical weathering of the rock surface (Andrefsky 1998:101). At OBP raw materials exhibit mainly mechanical weathering. The bulk of rock types consists of nodules, pebbles and rollstones, which acquired a smooth surface through transportation by water in the braided river system of the Waterberg and through erosion from conglomerates (see also chapter 2 for a description of the geology). As cortical primary flakes generally indicate earlier reduction stages, they are seen as products of *in situ* knapping activities at a particular locality where the cores are systematically reduced to produce usable products. This is however not always a reliable indication of reduction stages in view of the form in which rock types occur. Waterborne pebbles — which were extensively used at OBP — produce a higher frequence of cortical debitage (Andrefsky 1998:101-4, 112-4). Data from the OBP lithics suggest both primary knapping and reworking of blanks.

The OBP collection shows similar percentages for non-cortical (49.7%) and cortical (50.3%) flakes <30 mm. The figures can be misleading due to high proportions of quartz and quartz crystal cortical flakes at 87.9%, which directly result from the pebble and crystal shapes of the objective pieces. It also needs to be explained that quartz crystals were certainly used for flakes <30 mm, but that their relative proportions are masked by quartz as it is difficult to assign a quartz crystal origin to flakes when there is no remnant dorsal cortex. Also, the faceted, elongated shape of a crystal is eminently more suitable to produce bladelet blanks. High cortical values are linked to the form in which the materials occur. This is confirmed by the data on raw material usage in Appendix D. For example, 66.9% of all flakes on quartz retained some dorsal cortex compared with only 22.6% of flakes on CCS.

The relative percentages of cortex retained in flakes <30 mm also fluctuate. Comparable high percentages are evident for quartz, but in somewhat different proportions at 46.5%. Cortical felsite and quartzite flakes also have higher values when compared to the smaller flake category. The following table reflects differential use of rock types for the two flake categories and the relative proportions of cortex in each.

Relative percentage frequencies of non-cortical and cortical flakes

	CCS	Quartz	Quartz crystal	Felsite	Quartzite	Haematite	Sand-stone	Schist	Total
Non-cortical <30 mm	24.0	27.0	0.0	40.9	6.0	2.1	0.0	0.0	100.0
Cortical <30 mm	6.9	57.4	30.5	4.4	0.7	0.2	0.0	0.0	100.0
Non-cortical >30 mm	4.9	11.6	0.0	55.7	20.5	7.1	0.1	0.0	100.0
Cortical >30 mm	5.6	44.9	1.6	27.7	16.8	3.2	0.0	0.3	100.0

Fragments register behaviour as much as complete tools (Shott 2000:735). The relative proportions of complete and broken flakes <30 mm are 65.5% and 34.5% respectively. The production of the many flake blanks <30 mm was likely not only for expedient use, but also to fashion other formal tools, and in particular scrapers. During a reduction process detached pieces generally get progressively smaller at successive stages of removals (Andrefsky 1998:159). At OBP the core-reduced pieces, comprising 21.6% of core types, progressively delivered smaller-sized flakes.

The proportions of flakes >30 mm are more uniform at 52.6% against 47.4% broken. A comparable trend of complete versus broken specimens is apparent in blades, where broken blades make up 51.8%. This may suggest that larger cobbles or chunks of material were valued (due to constraints imposed by relative availability and energy costs of transportation) and reserved for large-sized tools, including blades and flake-knives. These tool types were likely not multi-functional to the same extent as smaller tools, but knapped when required with a specific activity in mind.

The relative frequencies of flakes increase exponentially. This trend for incremental amounts is evident for all classes of lithics. MSA tools and flakes are sometimes collected and incorporated in LSA collections, and also occasionally reworked (Walker 1998a:75). Tools derived from such contexts are commonly referred to as antiques (Wadley 2000a:20, 2000b:94), as the concepts recycling or curation refers to different contexts (Wadley 1987:43-4; Odell 2001:68-9). The Tjimba sometimes resharpen old implements found in the veld (MacCalman & Grobbelaar 1965:24-5). Some recycling of low numbers of MSA tools was also found at Goergap on the Waterberg Plateau (Van der Ryst 1996, 1998a). The presence of a

tool in an assemblage records use (Shott 2000:735), or collection for whatever reason. In the OBP assemblage MSA artefacts comprise 0.6% of all flakes. The following data illustrates that collecting of MSA materials was more prominent during the earlier sequence.

Relative frequencies of flakes including MSA implements												
	S	1	2	3	4	5	6	7	8	9	10	Total
Flakes < & > 30mm	82	156	188	332	412	1004	1292	1700	1541	1724	2751	11182
%	0.7	1.4	1.7	3.0	3.7	9.0	11.6	15.2	13.8	15.4	24.6	100.0
MSA	0	0	0	0	0	0	0	3	5	18	38	64
%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	7.8	28.1	59.4	100.0

4.3.2.2 Bladelets

Unretouched bladelets are not considered to be debitage. During various periods worldwide bladelets were probably used in hunting and manufacturing contexts as indicated by microwear analysis (Blankholm 1996:32). In the Cape region it is not uncommon to find bladelets in clusters, suggesting storage in a container, or perhaps a flaking technique where many blanks produced fell around the core (Deacon & Deacon 1999:118). Relative large numbers of bladelet blanks, which were systematically produced, confirm that they were an important component of most microlithic assemblages, being eminently suitable as inserts for composite tools or hafting, easily manufactured, replaced and carried (Mitchell 2002:120- 2). At OBP the activity patch in D1.10, consisting of an anvil surrounded by debitage and microliths, not only delivered bladelet cores, but some 16 backed and utilized blades (see also Appendix N). A relatively large proportion of OBP cores could have featured in bladelet production. As flakes dominate, the bladelets represent only 24.2% of primary flaked products and of these 38.5% are broken. The figure does not change significantly when formal tools are added to the permutation. Whereas relative frequencies of bladelets also do not differ much when backed bladelets are included, the proportions of raw materials used for backed bladelets vary, as discussed under the formal tool section.

Quartz and quartz crystal are the main rock types used for bladelets at 63.2% with the next common CCS at 22.7%. With backed bladelets the proportions change so that 48% of backed bladelets are on CCS, and 49.6% on quartz and quartz crystal. The other rock types used for unretouched bladelets do not really feature in backed specimens as shown in the following

table.

Mostly quartz pebbles and quartz crystals were used in producing bladelets. The 43% value for cortical bladelets in the collection, as with flakes, results from the form of raw materials. Of bladelets on quartz materials 59.1% retains cortex, CCS bladelets retain only 11.4%, and similarly with felsite where only 7.4% of specimens are cortical. Whereas CCS also occurs in nodular form, cobbles are generally of a larger size with relatively less cortex. Some bladelets exhibit a naturally backed edge where cortex is retained.

Comparison of rock types used in the manufacture of bladelets

	CCS	Quartz	Quartz crystal	Felsite	Quartzite	Haematite	Total
Unretouched	869	1782	639	472	52	16	3830
%	22.7	46.5	16.7	12.3	1.4	0.4	100.0
Backed bladelets	101	69	35	5	0	0	210
%	48.0	32.9	16.7	2.4	0.0	0.0	100.0
Total all bladelets	970	1851	674	477	52	16	4040
%	24.0	45.8	16.7	11.8	1.3	0.4	100.0

Relative percentage frequencies of non-cortical vs cortical raw materials used for bladelets

	CCS	Quartz	Quartz crystal	Felsite	Quartzite	Haematite	Sandstone	Schist	Total
Non-cortical	35.2	41.6	0.0	20.0	2.4	0.7	0.0	0.0	100.0
Cortical	6.0	53.0	38.8	2.1	0.0	0.0	0.0	0.0	100.0

The frequencies of bladelets through the sequence correspond with the pronounced incremental trend towards the manufacture of larger numbers of lithics during the earlier part of the sequence at OBP.

Relative percentage frequencies of bladelets

	S	1	2	3	4	5	6	7	8	9	10	Total
Without backing	0.2	0.4	0.9	1.1	2.2	8.5	13.1	15.5	12.8	19.1	26.2	100.0

Backed	0.0	0.5	1.0	2.4	2.9	13.8	4.8	17.1	17.6	19.0	21.0	100.0
All bladelets	0.2	0.4	0.9	1.2	2.2	8.8	12.7	15.6	13.0	19.1	25.9	100.0

4.3.2.3 Blades

Blades make up 4.7% of primary knapping products. This figure is consistent with other LSA assemblages. Blades were manufactured during both the MSA and LSA, but are generally more prominent in MSA collections being frequently produced as blanks on which tools were fashioned, as for example, during the Howiesons Poort (Deacon & Deacon 1999:97, 101). Whereas such blanks may have been produced for the manufacture of other formal tools at OBP, this is not clear from the recovered assemblage. If size is a determinant, then the spokeshaves and the large burin may be on blade blanks. Felsite is not only the dominant material for the former, but at 51%, also a primary material used for blades, with quartz the next common at 21% and then quartzite at 17%. This corresponds with rock types for the larger-sized flakes >30 mm. Haematite was used for one spokeshave, and is also relatively common in blades, similar to flakes >30 mm. Whereas blades and flakes >30 mm were also made on schist and sandstone, the very low numbers of blades from these raw materials make their contribution insignificant. A relative high incidence of 51.8% for broken blades indicates that they were damaged either during use or during the reduction process. Flakes >30 mm show a similar trend for complete versus broken specimens.

Raw material component of blades

	CCS	Cortical CCS	Quartz	Cortical quartz	Quartz crystal	Felsite	Cortical felsite	Quart-zite	Cortical quartzite	Hae-matite	Cortical haema-tite	Total
Total	39	5	76	80	2	355	24	120	6	34	2	743
%	5.2	0.7	10.2	10.8	0.3	47.8	3.2	16.2	0.8	4.6	0.3	100.0

Relative percentage frequencies of blades

	S	1	2	3	4	5	6	7	8	9	10	Total
Total	1	3	0	2	6	23	32	35	52	254	335	743
%	0.1	0.4	0.0	0.3	0.8	3.1	4.3	4.7	7.0	34.2	45.1	100.0

4.3.3 The formal tool inventory

Microlithic assemblages, collectively known as Wilton, have been found south of the Limpopo only after 8000 BP, until recent research established earlier dates for Wilton occupations in this region (Mitchell 1997:371; Van Doornum 2005:158). Fine-grained rocks were used to produce a larger formal tool component than during preceding stages. Wilton assemblages are dominated by small scrapers and a range of backed microliths, such as segments, backed bladelets, borers and adzes (Mitchell 1996:41, 1997:371; Wadley 2000b:100). The OBP assemblage is typical of a classic Wilton assemblage. The ratio of the formal component is 4.1% against all imported materials excluding pigments, but 3.5% when the former is included. This is comparable to most LSA assemblages from this period where the formal tool component rarely exceeds 4% or 5%, with most less than 1% (Deacon & Deacon 1999:113). Formal tools represent 16.6% of all flaked products. Variability in the proportions of backed tools is apparent at sites within a region and also sites from other geographical areas. Late Holocene collections, especially, exhibit marked diversity (Wadley 2000b:100-1; Van Doornum 2005:105). In the next table the frequencies of tool types are shown, after which each class is discussed in more detail.

Formal tool proportions

	Scrapers	Backed scrapers	Backed bladelets	Segments	Borers	Awls	Adzes	Spokeshaves	Burin	Other	Total
Total	2169	206	210	33	312	184	11	8	1	16	3150
%	68.9	6.5	6.7	1.0	9.9	5.8	0.3	0.3	0.03	0.5	100.0

4.3.3.1 Scrapers

Scrapers form a dominant tool type in most southern African LSA assemblages (Deacon 1976:58; Walker 1995a:54-87; Deacon & Deacon 1999:114; Wadley 2000b:98; Van Doornum 2005:105). Scrapers are integral to lithic assemblages worldwide, and are present in assemblages from virtually all prehistoric periods. Their function is, in the main, ascribed to hide working based on ethnography (Webley 1990:28-35; Andrefsky 1998:193-4; Deacon & Deacon 1999:111, 149). In southern Africa endscrapers in particular are associated with scraping and processing skins (Stow 1910:73; Silberbauer 1981:224-6). Stones were indeed used to scrape skins in the northern Cape, just as stone knives were used to skin game (Bleek & Lloyd 1911:3-15, 227).

Leather working, which includes the sewing of skins for clothing, footwear, containers and carrying bags, is generally performed by men, hides being products of the hunt (Marshall 1976a:86-7, 102, 413). The preparation of skins is a principal, and also very social, activity of men, and is accompanied by talks about the hunt and related topics (Valiente-Noailles 1993:59). Stow (1910:73) describes different functional types of scrapers, and mentions that a notched circular scraper functioned as a spokeshave in woodworking. Another roughly circular, but thicker and flattish scraper was held between the forefinger and thumb when processing skins.

Lithic studies suggest that scraper form results from function and not style, and functional analyses of assemblages, experiments, and microwear analysis, support multi-functional usage (Andrefsky 1998:194). Both archaeological and ethnographic data confirm that artefact morphology does not always conform to a particular function. Contemporary users of lithic implements 'do not treat a stone tool as a type, but rather as a piece of stone that can be used to get the job done' (Andrefsky 1998:195). Lithic studies suggest caution in using morphology to infer function. Various combinations of tools were likely to have been used during a production sequence, of for particular projects. Morphology of scrapers also changes through use, and the very small size of some scrapers can result from attrition through use or resharpening (Andrefsky 1998:37; Shott 2000:726-7). In addition, a generally small size for scrapers is associated with the nodular form of preferential rock types. These trends at OBP conform with other Holocene assemblages, such as Rose Cottage Cave (Wadley 2000a:22).

We assume that some scrapers were hafted. Very small scrapers, especially, would have been easier to manipulate when inserted into a haft. Some scrapers from archaeological contexts in the southern and eastern Cape still carry mastic traces suggesting their setting into handles (Deacon 1976:56-8; Deacon & Deacon 1980:31-7,1999:110-5, 149). Instances of hand-held larger scrapers have been observed and small specimens, fixed with mastic in hafts of wood, bone and horn, were recovered from various regions (Clark 1959:232-4). Residue analyses on archaeological specimens from other sites confirm hafting practices, and some of the tools from OBP likewise retain adhesive traces (Williamson 2000, 2006; Lombard *et al.* 2004:159-66; Wadley *et al.* 2004).

At OBP scrapers make up 75.4% of all formal tools. Small scrapers represent 88.3% of all

scrapers, including those with backing. CCS was used for 60.5% of small scrapers, with quartz and quartz crystal at 35.1% the next most common material. The proportions of CCS used for backed scrapers are even higher at 67.5%. These trends yet again demonstrate preferential use of specific materials for tool types at OBP. Selective use of rock types was evidently a functional consideration, because opalines were clearly preferred for scrapers whereas quartz materials dominate all other lithic classes. The different proportions of rock types used for medium and large scrapers again likely relate to the natural form in which raw materials occur, and therefore relative dimensions finished products, as was demonstrated above for flakes (4.3.2.1) and blades (4.3.2.3).

Relative frequencies and percentage frequencies of different scraper types

	Small	Backed	Medium	Large	Total
Total	1890	206	221	58	2375
%	79.6	8.7	9.3	2.4	100.0

Formal tool inventory: scrapers

	CCS	Quartz	Quartz crystal	Felsite	Quartzite	Haematite	Total
All small	1268	606	129	90	2	1	2096
%	60.5	28.9	6.2	4.3	0.1	0.0	100.0
Small	1129	558	110	90	2	1	1890
%	59.7	29.5	5.8	4.8	0.1	0.1	100.0
Small backed	139	48	19				206
%	67.5	23.3	9.2	0.0	0.0	0.0	100.0
Medium	66	83	5	66		1	221
%	29.9	37.6	2.3	29.9	0.0	0.5	100.0
Large	10	11		29	7	1	58
%	17.2	19.0	0.0	50.0	12.1	1.7	100.0
Total scrapers	1344	700	134	185	9	3	2375
%	56.6	29.5	5.6	7.8	0.4	0.1	100.0

Use processes of tools, and minor modifications including sharpening or shaping an edge, may change the overall morphology of a specimen (Andrefsky 1998:33). To what extent these processes affected morphological variability, which is evident in scrapers, is not clear. However,

there is clearly intentional emphasis on edge elements that likely concerns specific functional applications. At OBP end- and sidescrapers dominate as demonstrated below. These two types have similar proportions, but only endscrapers exhibit adze-like wear. Sidescrapers are more common in classic Wilton assemblages (Esterhuysen *et al.* 1994:76-7). Side retouch or adze-working, which manifests in lateral step flaking (Wadley 2000b:98), is mostly associated with small scrapers from Wilton assemblages. The specific application of adze-like edges is speculative, but possibly relates to the working of hides or wood. Endscrapers in particular were observed to be multi-functional, These scraper forms were used on bone and hide in various stages or processing and particularly wood, and several kinds of actions, such as scraping, graving, boring and slicing (Andrefsky 1998:194).

Specimens of different scraper types were accordingly included in the OBP lithic sample submitted for residue analysis, with the objective to establish likely functional differences. It may be significant that whereas all the OBP scrapers accumulated plant, resin and ochre substances, only a sidescraper displayed animal residues in the form of bone collagen. Sidescrapers and side-and-endscrapers contained relatively more starchy deposits. Plant tissue and fibres were more prominent on endscrapers with adzing.

Frequencies and percentage frequencies of different scraper types

	End	End with adzing	Side	End & side	Double-sided	End & double-sided	Backed	Total
Total	721	104	818	183	39	25	206	2096
%	34.4	5.0	39.0	8.7	1.9	1.2	9.8	100.0

Similar to the overall trend for optimum production in pre-contact levels at OBP, the largest numbers of scrapers (and the greatest relative representation of different types), derive from this period. There is no clear pattern or change through time in the different scraper types. The upper layers merely have an impoverished representation of scrapers. These trends also apply to double-edged and backed scrapers, being distinctive elements of the OBP assemblage. Double-edged tools, also called double segments, are included under scrapers. However, they may well have been used as projectile inserts (Walker 1995b:211; Mitchell 2002:164). Backed scrapers were made and used in social contexts. Changes in the geographical and temporal distribution of stylistic elements of tool types, such as scrapers, may serve as indicators of

changing social boundaries (Barham 1992:48-9; Mazel 1992:133-4; Wadley 1992:53; Barham 1993:51). Backed scrapers are biconvexly retouched, or blunted on one edge, and were accordingly grouped with scraper types in the formal analyses. They differ from segments in having a curved, retouched edge, whereas the straight chord edge in segments is not retouched. The OBP backed scrapers are technologically comparable to those from Wilton collections in adjacent Zimbabwe and Botswana. Whereas small numbers occur in the south and northeast of Botswana, this tool type is absent in the far east. As early as the 1950s an apparent closer link between southern Botswana and the southern African sites was hence proposed (Malan 1950:140-2; Walker 1998a:76).

The OBP residue analysis demonstrated ochre to be present on all scraper types. However, it is significant that some of the highest relative frequencies (50%) of ochre were found on backed scrapers. Singular items fashioned with much care may be signifiers of identities and meanings in negotiating social and intergroup relations (Sackett 1982:59-112; Sørensen 2004:168-175). Whether this applied to the elaboration of technological and stylistic attributes found in backed and double-edges scrapers from OBP, may be impossible to establish. Differentiation on the individual level is mostly underplayed in an egalitarian society, but not uncommon. This is illustrated, for example, in the marking of arrows. Since the owner of the arrow used in killing an animal distributes the meat, individual property affects the meeting of social obligations within a group (Bleek & Lloyd 1911:361, 363; Marshall 1976a:295-303, 1976b:358-9; Wiessner 1983:262, 265; Deacon & Deacon 1999:158).

Still, for individual style to develop in emblematic style is rare in material culture (Walker 1995b:191-2), but also see Wiessner (1983:69). Emblemic (or intentional) style in arrows allows not only identification of groups, but suggests that they hold similar values and practices. Both isolation and interaction create variation (Guenther 1999:132). Tools with a restricted distribution more likely relate to regional differences in symbolic display, but may also signify ritual exchange between groups. In Botswana such local technological differences are matched by changes in regional contents and style of rock art from these regions (Walker 1998a:76). Ideological flexibility, as exhibited by regional substitution of potent animals in rock art (Lewis-Williams & Dowson 1989:17; Eastwood & Cnoops 1999:107-19), is parallelled in songs and tales on beliefs and folklore with similar underlying themes, but different animal characters, ethological details and ways of performance (Biesele 1993:66-70; Guenther 1999:126-45).

Such variability, idiosyncrasy and individualism, echo the underlying social values and relations of a foraging ethos of equality, reciprocity and sharing (Guenther 1999:128,142).

The presence of backed scrapers, albeit in low numbers, in the more recent layers at OBP demonstrates a continuation of apparent regional or local stylistic trends, which are distinctive features of post-classic Wilton collections (Wadley 2000b:101-2). Small-sized scrapers are the only tool type featuring prominently in post-contact layers at OBP. This may be attributed to the continued use of this locality by small family groups who undertook only basic subsistence activities. The frequencies for borers and awls, but to a lesser extent than in earlier levels, confirm some sustained production during the more recent period.

Relative frequencies and percentage frequencies of various scraper types

Type	S	1	2	3	4	5	6	7	8	9	10	Total
Small	29	34	58	74	125	248	255	441	218	206	202	1890
%	1.5	1.8	3.1	3.9	6.6	13.1	13.5	23.3	11.5	10.9	10.7	100.0
Backed	0	1	4	2	28	11	6	60	33	33	28	206
%	0.0	0.5	1.9	1.0	13.6	5.3	2.9	29.1	16.0	16.0	13.6	100.0
Medium	0	0	3	6	11	6	31	62	19	53	30	221
%	0.0	0.0	1.4	2.7	5.0	2.7	14.0	28.1	8.6	24.0	13.6	100.0
Large	0	0	0	0	0	2	4	6	12	14	20	58
%	0.0	0.0	0.0	0.0	0.0	3.4	6.9	10.3	20.7	24.1	34.5	100.0
Total	29	35	65	82	164	267	296	569	282	306	280	2375
%	1.2	1.5	2.7	3.5	6.9	11.2	12.5	24.0	11.9	12.9	11.8	100.0

4.3.3.2 Backed bladelets

Backed bladelets are universally a versatile tool type. The functioning of specific tools may vary in time and between sites (Blankholm 1996:32) The small size of bladelets suggests use as inserts onto a haft as composite tools to be functional (Deacon & Deacon 1999:28, 113). At OBP backed bladelets form 6.7% of the formal tool assemblage. The discussion of unretouched bladelets as some of the primary products of flaking (24.2%) also included references to backed bladelets (4.3.2.2). I illustrated that proportions do not change much when backed bladelets are incorporated with unretouched bladelets. This category then represents 25.2% of flaked products. It changes to 21.3% if a permutation of all flaked products, including formal

tools, is applied. An absence of backed bladelets at some of the excavated shelters in the Soutpansberg is attributed to differential activities (Van Doornum 2005:126). Whereas most of the OBP tools submitted for residue analysis exhibited mostly remains from plant processing, a backed bladelet (similar to the sidescraper discussed under 4.3.1.1 as the only tools with animal residues) may have been used to process raw meat (Williamson 2006:2). The backed bladelets examined in this analysis show an ochre frequency of 25%.

Relative frequencies of rock types used for backed bladelets

	CCS	Quartz	Quartz crystal	Felsite	Total
Total	101	69	35	5	210
%	48.1	32.9	16.7	2.4	100.0

On the whole this group conforms to the general trend at OBP for increasing densities through time. From approximately layer 6 there is a pulse that shows a quite steep drop-off in numbers not reflected in the unretouched bladelets. Backed and plain bladelets also feature in the more recent levels, but not to the same extent as scrapers, borers and awls.

Relative frequencies of backed bladelets

	S	1	2	3	4	5	6	7	8	9	10	Total
Total	0	1	2	5	6	29	10	36	37	40	44	210
%	0.0	0.5	1.0	2.4	2.9	13.8	4.8	17.1	17.6	19.0	21.0	100.0

4.3.3.3 Segments

Segments probably featured in hunting, being used as stone inserts for arrows. Whereas the double-sided backed tools were included with scrapers in the discussion above, they could have functioned in a similar manner as arrow projectile points. Some segment specimens made by the /Xam from the Breekwater prison on glass and stone were fixed with mastic onto a haft. These segments also have the sharp chord and blunted arch found on archaeological specimens (Deacon 1992:5; Deacon & Deacon 1999:150, 159). According to the Bleek records, quartz points were used for arrowheads (Bleek & Lloyd 1911: 227; Bank 2006:356). I pointed out the variable character of Holocene Wilton collections. Proportions of segments within any given assemblage show great diversity (Deacon & Deacon 1999:115; Wadley 2000b:101). Whereas the presence of segments constitutes a specific component of Wilton assemblages

as defined by Goodwin and Van Riet Lowe in 1929, they may be absent, infrequent or relatively abundant (Wadley 2000b:101). Segments generally occur in reduced frequencies during the last few thousand years (Deacon & Deacon 1999:113, 122-3, 150). Their co-occurrence with ceramics at some sites affirms continuance in post-classic assemblages (Wadley 2000b:101).

Only one segment was recovered from late post-contact levels in the upper sequence at OBP. Segments form 1.1% of the formal tool composition. Quartz is the dominant raw material used in their manufacture. I again emphasize that the relative proportions between quartz and quartz crystal are no doubt skewed, as it is not always possible to distinguish between these materials when no defining features, such as facets or cortex, have been retained. CCS was also relatively prominent in the production of segments as is evident from the following:

Relative frequencies of rock types used for segments

	CCS	Quartz	Quartz crystal	Total
Total	10	22	1	33
%	30.3	66.7	3.0	100.0

The production of segments at OBP mirrors the customary incremental trend of larger production earlier in the sequences. Relative frequencies for segments are greatly variable, but can relate to low overall numbers. The distribution of segments across the grid follows the spatial patterning noted elsewhere. The zone against the talus contains 54.6% of all segments, whereas the section against the back wall has a total of 24.3%. The distribution of segments within the private loci corresponds with other tool types. The largest concentrations are present in what probably constituted seating space across fireplaces. Two main clusters are apparent in Zone 1 and Zone 3 respectively, but within different time frames.

Relative frequencies of segments

	S	1	2	3	4	5	6	7	8	9	10	Total
Total	1				6	5	4	9		5	3	33
%	3.0	0.0	0.0	0.0	18.2	15.2	12.1	27.3	0.0	15.2	9.1	100.0

4.3.3.4 Borers and awls

These tool types, with retouch on the distal point, are common in virtually all LSA collections. They were presumably used for a variety of tasks. Common applications include their use as piercers to make holes in tanned skins before being sewn with sinew into articles of clothing or carrying bags. Borers and awls were probably also used in the production of OES beads and in decorating OES water flasks. The relative frequencies of borers at 9.9% and awls at 5.8% in the formal tool component are comparable with contemporaneous collections. Whereas many of the quartz crystals with a natural sharp distal point could have effectively functioned as piercers, only those that conform to the parameters of formal analysis were classified as such. Quartz and quartz crystal feature prominently at 68.2% for borers and 58.1% for awls. CCS materials make up 26% and 28.3% respectively for these tool types. Felsite shows a higher use for larger-sized awls. Several awls were also made on quartzite and haematite. Note that these raw materials were not used for borers. Numerous awls are on bone, so that the relative contribution of stone borers and awls is difficult to assess. The many bone awls recovered at OBP doubtless indicate clear functional uses between the different types of stone and bone piercing tools.

Relative frequencies and percentages of rock types used for borers and awls

	CCS	Quartz	Quartz crystal	Felsite	Quartzite	Haematite	Total
Borer	81	157	56	18			312
%	26.0	50.3	17.9	5.8	0.0	0.0	100.0
Awl	52	88	19	21	2	2	184
%	28.3	47.8	10.3	11.4	1.1	1.1	100.0

Frequencies for borers and awls follow general trends in production, but in different proportions when compared with other tool types. Borers and awls feature consistently in the more recent occupation, albeit in low numbers. This may relate to the use of the shelter by small groups who continued to manufacture OES beads and hide karosses, other clothing and carrying bags. Some of these activities could have been undertaken for exchange with neighbouring farming communities, or to produce tribute items as documented on the Waterberg Plateau (Schlömann 1898:66-70; Van der Ryst 1998a, 2003).

Relative frequencies of borers and awls												
	S	1	2	3	4	5	6	7	8	9	10	Total
Total	1	5	0	3	2	39	88	101	95	92	70	496
%	0.2	1.0	0.0	0.6	0.4	7.9	17.7	20.4	19.2	18.5	14.1	100.0

4.3.3.5 Adzes, spokeshaves and burins

Functional applications of these tool types at OBP were probably woodworking and sharpening implements, such as digging sticks (Stow 1910:73; Deacon & Deacon 1999:119, 126). Adzes generally display a steeper retouch than is found in scrapers. Spokeshaves are also known as notched, hollow or strangulated scrapers, and possibly functioned alike to adzes (Deacon 1984b:269-70). Both adzes and spokeshaves are more customary in assemblages from the last 2000 years (Deacon & Deacon 1999:119). A characteristic concave edge may have facilitated wood shaving. Spokeshaves are uncommon outside KwaZulu-Natal and are more frequently found in late Holocene assemblages with pottery. Burins exhibit a restricted narrow and elongated cutting edge made by the removal of small flakes or spalls. These tool types are believed to have functioned in a chisel-like manner, or to engrave patterns on hard materials including bone, wood and stone (Noone 1934:81; Robinson & Cooke 1950:109; Andrefsky 1998:155). Crystals are eminently suitable for expedient use, and many at OBP and at sites in Zimbabwe show utilization suggesting their use as burins (Mason 1962:315, 320; Cooke 1963:93, 96). Markedly low numbers of these tool types were recovered at OBP. Higher relative frequencies in other LSA assemblages (Wadley 2000b:94) reflect the diversity found in Wilton assemblages.

Relative frequencies of rock types used for adzes, spokeshaves and a burin							
	CCS	Quartz	Quartz crystal	Felsite	Quartzite	Haematite	Total
Adzes	1			3	7		11
%	9.1	0.0	0.0	27.3	63.6	0.0	100.0
Spokeshaves	2		2	2	1	1	8
%	25.0	0.0	25.0	25.0	12.5	12.5	100.0
Burin				1			1
%	0.0	0.0	0.0	100.0	0.0	0.0	100.0

Relative frequencies of adzes, spokeshaves and burin												
	S	1	2	3	4	5	6	7	8	9	10	Total
Total							2	4	3	9	2	20
%	0.0	0.0	0.0	0.0	0.0	0.0	10.0	20.0	15.0	45.0	10.0	100.0

Miscellaneous backed pieces, which do not fit into the regular categories, were often broken sections with retouch, or amorphous tools. They form a small component of the assemblage, namely 0.5%.

4.3.3.6 Residue analysis

A lack of congruence between morphological characteristics used for typologies and functional use, is demonstrated through usewear and microscope studies. This can be ascribed to the primary requirement in tools of functional edges, which are effective for the activity in mind. Tool manufacture is, moreover, a dynamic process during which final tool forms can be altered (Andrefsky 1998:207; Cowan 2000:594; Odell 2001:46-47, 56-62). The OBP sample of microliths submitted for residue analysis was selected on excavation, retrieved with as little as possible handling and sealed in plastic. The tools were not cleaned. The results of the analysis suggest a broad range of functions for tools included in the sample, as is evident in the following table where the residue frequencies and relative percentages are summarised.

Residue frequencies and relative percentages on the sample of 63 microliths										
Plant	Tissue	%	Fibre	%	Starch grains	%	White starchy	%	Resin	%
	12	19.0	2	3.2	14	22.2	2	3.2	22	34.9
Animal	Blood film	%	Animal tissue	%	Fat	%	Bone	%		
	1	1.6	1	1.6	1	1.6	1	1.6		
Other	Ochre	%	Charcoal	%	Ash	%				
	21	33.3	4	6.3	1	1.6				
Utilization	Worn edges	%	Polish	%	Scratches	%	Utilization	%	Hafted	%
	32	50.8	6	9.5	1	1.6	23	36.5	4	6.3
Post-deposition	Mycohyphae	%	Rootlets	%	No use-residues	%	Used, no residues	%		
	7	11.1	3	4.8	12	19.0	16	25.4		

The results indicate that plant residues were pervasive on all tool types with a presence/absence basis of 83% (Williamson 2006:2). Of these, starch grains appear at relative frequencies of 22.2% and plant tissue at 19%, whereas plant fibre and white starchy deposit both feature at 3.2%. Resin and ochre are dominant. Resin has a 34.9% prevalence with ochre present on overall 33%. The spatial distributional patterns and combinations of resin and charcoal, and also macerated plant tissues (from crushing within a wooden haft) on tool surfaces, suggest hafting. Charcoal and ash show a surprising low incidence, given the generally ashy matrix, featuring on only five specimens at 6.3% and 1.6% respectively (Williamson 2006:2-3).

Utilization shows mainly in worn edges on approximately half of the sample, at 50.8% and utilization marks at 36.5%. There is polish on only six specimens (9.5%) and scratches on 1.6%. Hafting is indicated in relative frequencies of 6.3%. Post-deposition mycohyphae implies little disturbance and corresponding good overall archaeological integrity. Rootlets are present on 4.8% of specimens. Some tools have no use-residues (19%), whereas others were undoubtedly used (25.4%), without retaining apparent residual substances.

The eight endscrapers with adzing included in the sample, contain mainly plant substances. Hafting is suggested by mastic and ochre. Several endscrapers with rounded, worn edges do not have substances relating hafting. Plant tissue occurs in relative frequencies of 37.5%, starch grains at 25%, with another 25% of white starchy deposit, and 50% of resins. These scrapers also carry 50% ochre (similar to sidescrapers), charcoal and ash. Utilization is indicated by worn edges (50%), polish (25%) and utilization (12.5%), whereas hafting is suggested at 12.5%. Most mastic traces (OB1, OB2, OB20, OB21) present on the proximal sections, and on one specimen terminates in a semicircle on the medial section (OB1). This pattern is common to hafting procedures where the proximal hafting element (Andrefsky 1998:35:fig 2.17, 76:fig 4.8), slots into a handle, leaving the broader cutting edge exposed (cutting edges on OBP specimens commonly display such edge damage). A red ochre spot on the proximal distal side of a cortical endscraper (OB4) with macerated plant tissue is present in the correct position for hafting. The position of the resin line on a medium endscraper (OB3) is not well defined, but red ochre on the proximal ventral side can relate to hafting. The spatial distributions of macerated starch on this specimen are on both sides in a distal position,

suggesting that the residue is use-related.

A sidescraper (OB18) represents one of only two tools with animal residues which may have been used to scrape or process bone. However, there are also several large starch grains on this particular specimen, and also a mastic-like film, and orange resin along the long axis of the dorsal surface, and with spots of ochre on the ventral side. A few tiny opaline side-and-endscrapers (OB11 maximum dimensions 15 mm; OBP12:13mm), a sidescraper (OB13:15 mm) and another cortical sidescraper (OB14:12 mm) were submitted to determine the use of these small tools. The edges were found to be quite sharp, sometimes worn, with edge damage and utilization (OB13), and with some smeared plant tissue (OB12). All specimens show a sandy film that covers the larger part of the surfaces. The sand deposit is interesting, as the tools were recovered from the dark humic matrix in zone 1, so that it may indicate previous use in a sandy patch. The ochre distributional patterns on several of the side-and-endscrapers are too random to make any inferences as to hafting. One specimen (OB16) has thick ochre encrustation on the haft element.

The proportions of residues are very different on the 14 side- and end-and- sidescrapers. Here starch and resin are similar with 35.7% respectively, followed by ochre at 28.6%, plant tissue and plant fibre at 14.3% each, and bone 7.1%. This group surprisingly contains very little charcoal (7.1%), against a 37.5% and 12.5% of ash presence for endscrapers. Utilization presents in worn edges (14.3%), polish (21.4%), scratches (7.1%), utilization marks (21.4%) and evidence for hafting (7.1%). A total of 28.6% side- and endscrapers displayed no evidence for use. No residues were recognized on 7.1% of scrapers that were showing utilization.

The 12 backed scrapers have a more restricted range of residues, which includes plant tissue (25%), and some starch grains (5.9%), but principally resins (41.7%). Ochre displays a quite high (50%) incidence. The residue analysis clearly demonstrates extensive utilization of these tool types. Evidence for utilization includes worn edges (91.7%), polish (8.3%) and direct application (41.7%). There is also some evidence for hafting (8.3%). One specimen (OB23) shows possible resin deposits along the backed edge of the ventral surface. The ochre traces occur on the cutting edge (OB25; OB28; OB29; OB31), but also on backed edges (OB26). A small specimen (OB33:17 mm), exhibits a black resinous film and the same sandy deposit as previously remarked upon. Hafting is a real possibility with one example (OB34:17 mm), where

resin and also ochre present on the proximal edge on both sides.

The 17 segments and backed bladelets were subsumed under backed tools for the analysis (Williamson 2006). Resins dominate (23.5%), whereas plant tissue and also starch grains feature at 5.9% for each group. Blood film, animal tissue and fat are equivalent at 5.9% each. Ochre shows on 23.5%. Utilization is high, and displayed by worn edges (58.8%), and general use (64.7%). No residues were apparent on the quartz backed bladelets, but utilization was present on the edge, tip and ridge, with flake scars on the tip (OB35), a worn tip and utilized edge (OB38), or sharp edges (OB37; OB39). The utilized pointed bladelet on quartz (OB42) presents a worn ridge and tip, but no residues. An opaline bladelet (OB43) with ochre on the ventral base also contains tissue, smeared fat deposits and blood on the distal tip, but also animal tissue on both the proximal and distal sections. An opaline segment (OB40) displays slightly worn edges, a worn tip and resin on the opposing tip. A segment on quartz (OB41) presents utilization on the chord, and ochre on the opposing tips on both sides. Likely resin spots are indicated for an obliquely backed segment on quartz (OB46) with a utilized edge. Most of the quartz segments exhibit utilization, but not residues. An opaline segment (OB48) has resin and ochre on opposing tips, and spotty resins on the curved edge. A double-sided backed opaline tool (OB44) displays possible resins on the proximal edge on both sides, and ochre in the same position on the dorsal side.

A number of tools with emphasis on the distal point were also submitted. It is somewhat surprising that the borers and awls have plant tissue (25%), starch grains (41.7%) and resins (33.3%) as primary remains. The ochre incidence is 25%. Utilization shows in worn edges (41.7%) and general usewear (33.3%). The perforating tools present no evidence for hafting. One opaline borer (OB52) retains a film of smeared plant tissue and worn edges on the pointed tip, while another (OB53) has ochre and resin on the tip, but plant tissue and starch on the proximal end. Most of the borers/awls have worn proximal edges and tips, as anticipated for piercing tools, and also resin film and plant residues, with infrequent ochre. Only one quartz awl (OB57) with resin on the proximal end of the ventral side, has several patches of ochre on the dorsal surface.

The prominency of different types of plant residues on all scraper types suggests a range of tasks relating to the manufacture and processing of items of plant origin. The range of plant

substances underscores the multi-functional use of most tool types. Only backed tools, including the segments and one sidescraper, exhibit animal residues. While it may be a product of sampling, it is significant that segments were used in activities that relate to hunting/processing of meat in view of some of their inferred functions. Many of the segments have utilization/damage on one tip, utilized edges and also a resin film over most of the flat surface. The fact that so many tools show utilization, but do not retain residues, may to some extent result from post-depositional processes. Mastic traces and the spatial position of ochre remains on some of the samples, and being quite prominent on scrapers, are positive signs for hafting. The natural adhesive properties of ochre react to binders or heat application. Ochre is accordingly effective as a hafting ingredient as demonstrated in replication studies (Wadley 2005b:1-15). More detail on the use of pigments is provided when the role of pigment as a loading agent is reviewed in chapter 5.

The joint occurrence of resins, mastic and ochre may suggest that a combination of substances was used in the preparation of hafting adhesives. While unintentional exposure or ochre-stained hands may transfer ochre onto tools (Wadley 2005b:1), some ochre deposits on the OBP sample certainly appear use-related (Williamson 2006). It is notable that most tools display sandy deposits, which may relate to the proximity of the sandy river bank immediately below the shelter. The sand film sometimes covers residues, and in other examples underlies the residues. The following data provide more detail on the distribution patterns for the different tool types.

Summary of residues as relative percentages with regard to tool type

	Endscrapers with adzing	Side & end- & sidescrapers	Backed scrapers	Backed tools & backed bladelets	Tools with distal point emphasis
Number of tools	**8**	**14**	**12**	**17**	**12**
% of total sample	**12.7**	**22.2**	**19.0**	**27.0**	**19.0**
Plant					
Tissue	37.5	14.3	25.0	5.9	25.0
Fibre		14.3			
Starch grains	25.0	35.7	8.3	5.9	41.7
White starchy	25.0				
Resin	50.0	35.7	41.7	23.5	33.3
Animal					
Blood film				5.9	
Animal tissue				5.9	
Fat				5.9	
Bone		7.1			
Other					
Ochre	50.0	28.6	50.0	23.5	25.0
Charcoal	37.5	7.1			
Ash	12.5				
Utilization					
Worn edges	50.0	14.3	91.7	58.8	41.7
Polish	25.0	21.4	8.3		
Scratches		7.1			
Utilization	12.5	21.4	41.7	64.7	33.3
Hafted	12.5	7.1	8.3		
Post-depositional					
Mycohyphae	25.0	14.3	8.3		16.7
Rootlets	12.5				16.7
No use-residues	12.5	28.6		11.8	41.7
Used, no residues	12.5	7.1	25.0	47.1	25.0

4.3.3.7 Groundstone objects

Implements in this category are primarily made through abrasion, polish or impact mechanisms, or used for similar functions (Adams 2002:1). Most items at OBP were probably multi-functional featuring in both grinding and flaking. Morphology and archaeological context may be used for classification into types and possible activities, but specific uses are resolved only through use-wear and residue studies. We use artificial constructs in categorizing the life histories of groundstone according to design and use attributes. Such categories not only help to explain technological practices, but also allow inferences on gender, group affiliations, the use of natural resources, production, and other issues that relate to the people who made and used these items (De Beaune 1993:163; Adams 2002:2).

The inventory of groundstone at OBP is an activity-based typology (Adams 2002:15), which groups the artefacts into manufacturing and processing categories. Manufacturing tools for shaping other artefacts are mainly grooved stones, polishing/rubbing stones, hammer stones and punches used in retouch. Anvils featured as passive support pieces during production. Stone manuports, used in processing animal and vegetal food products and substances, such as pigments, are not abundant at OBP. Examples include nutting/pigment crushing stones with circular depressions and one lower grinder (see also Appendix N for illustrations). Grindstones and large anvils are often left on site for future use (Mitchell *et al.* 2006:87). Palettes at OBP are classed with processing pieces as they probably featured as mixing and holding vessels for pigments. It is problematic to assign specific activities to the lithic rings as these enigmatic pieces may have been both functional, but also used in ritual contexts (Lombard 2001, 2003).

The data below detail the various groundstone pieces, blocks and cobbles of stone used in manufacturing and processing, and as percussion implements. It also demonstrates the choice of rock types. Raw material variables for these items correlate with size and granularity or texture of different rock types, which are important criteria in the selection process as they relate directly to the specific activities in mind (Deacon & Deacon 1999:113; Adams 2002:19).

OBP groundstone and other unknapped stone pieces										
	Sand-stone	Soap-stone	Quartz	Felsite	Quartzite	Haematite	Shale	Schist	Horn-fels	Total
Grooved stone	122			1	17		1	6		147
Lithic ring	1	1				1	1		1	5
Palette	2	1			2			1		6
Miscellaneous	1	8		1	1	2				13
Anvil/nutting/ crushing stone				2	46					48
Lower grinder					1					1
Hammer stone	1		4	8	16					29
Punch			5	1	23			1		30
Total	127	10	9	13	106	3	2	8	1	279
%	45.5	3.6	3.2	4.7	38.0	1.1	0.7	2.9	0.4	100.0

4.3.3.8 Grooved stones

Grooved stones are ubiquitous at most LSA sites (Schönland 1907:20; Cooke 1963:99; Walker 1995b:278; Deacon & Deacon 1999:157-8). They are also not uncommon at pastoral and farmer sites (Maggs 1971:53; Unisa field notes on Diamant). The grooves serve to confine cylindrical objects — usually of organic materials — during the abrading process, and similar abraders were used in other parts of the world (Adams 2002:82-91). That these implements were extremely versatile, is evident from ethnographic and historic observances. Differential uses include the production of cylindrical bone tools, straightening of arrow shafts, to shape strung OES roughouts, shell and bone beads, and also in the careful application of arrow poison to cylindrical arrows (Stow 1910:66-7; Dornan 1925:96; Schapera 1925:207, 1930:131; Silberbauer 1965:50; Humphreys & Thackeray 1983:194; Deacon 1992:5; Lewis-Williams 2000:103). An arrow straightener, with a central groove, represents one of the rare stone tool types now made by Ju/'hoansi men. It is often left at camp to limit the carrying weight of hunting bags (Marshall 1976a:144, 415). Similar examples from archaeological contexts include a specimen recovered from an open site in the Soutpansberg. Of pendant shape, it is quite large, with a mass of 357 grammes, ends in a point on the long axis of 140 mm with a perforated (now broken) proximal section, that can related to suspension on a thong (Le Roux 1964:18-9).

Grooved stones, routinely found at Waterberg sites, are particularly common at OBP (Mason 1962:320, 322; Schoonraad & Beaumont 1968:321; Van der Ryst 1998a:36). The ones at OBP have several grooves — and in some specimens are two-sided. Their shape, diameter and depth vary from fairly broad and shallow to well worn (see Fig. 4.1 at the end of this chapter, and also Appendix N). Some grooves run parallel, while others are on the diagonal and randomly placed. The cross-section may be V- or U-shaped, and are similar to grooved stones from Botswana (Walker 1995b:278) and Zimbabwe (Cooke 1963:99). The differences in grooves suggest different functional applications, since the morphology of the end product likely dictated the shape of the groove. Grooves of different size were required to produce tools with varying shaft diameters, such as the composite parts of arrows, awls, or the fine slender bone needles at OBP. Grooved stones are also applied in smoothing OES bead roughouts. Whereas V-shaped grooves were likely used to put points on the ends of tools, including awls or needles (Adams 2002:82), no such use has been documented in southern African contexts. The specific groove texture of the rock type of choice ensues in either abrasion, smoothing or polish of the shaft. Abrasive agents, such as sand, can be added (Adams 2002:84). The frequency of sandstone at 83% for the OBP specimens, indicates that a coarser large-grained texture was required for abrasion. The mechanical actions, which resulted in striations on the finished products, are clearly visible on some specimens.

Relative frequencies and percentages of rock types selected for grooved stones

	Sandstone	Felsite	Shale	Schist	Quartzite	Total
Total	122	1	1	6	17	147
%	83.0	0.7	0.7	4.1	11.6	100.0

The relative frequencies of grooved stones display a different pattern from other lithics in their pronounced clustering between layers 4 to 7. This corresponds with the first indications of other groups moving into the area. It is tempting to ascribe this trend to opportunistic production of trade and barter items to be exchanged with the newcomers during the first phases of symbiotic alliances.

Frequencies of total grooved stones												
	S	1	2	3	4	5	6	7	8	9	10	Total
Total		4	6	6	15	28	36	31	10	5	6	147
%	0.0	2.7	4.1	4.1	10.2	19.0	24.5	21.1	6.8	3.4	4.1	100.0

The majority of grooved stones at 53% clearly clusters in Zone 1 (64.6% if the central area is included), whereas 35.4% in the private focus area illustrates a pronounced emphasis on production and maintenance activities of beads, awls and hunting weapons around the fire.

Total grooved stones in various squares of the grid						
	Square 1	Square 2	Square 3	Square 4	Square 5	Total
Total	65	13	17	27	25	147
%	44.2	8.8	11.6	18.4	17.0	100.0

4.3.3.9 Lithic rings

Flat stone disks with perforations, and manufactured with great care, are present in many LSA collections. However, no unequivocal use has been ascribed to them (Schönland 1907:21, Plate III; Van Riet Lowe 1929:162-4; Mason 1969:308; Humphreys & Thackeray 1983:86; Ouzman 1997a:75; Lombard 2001:1-10; 2003:6-13). These stone rings vary in differential use of rock types, diameter, thickness and hole configuration. We know from ethnographic literature that the more bulky bored stones featured in both functional and ritual contexts (Bleek 1933b:390; Wadley 1996a:277, 1997b:107-133; Ouzman 1997a:71-106). The clear association between women and bored stones in rock paintings and engravings suggests that bored stones were gendered (Ouzman 1997a:94). Bored stones in burials are associated with both men and women (Ouzman 1997a:88; Wadley 1997b:119).

Hunting and gathering groups reportedly made bangles on soft rocks, including steatite or serpentine (Dunn 1931:36). At OBP different rock types were selected for the ring fragments, namely sandstone, soapstone, shale, and haematite. Four of the OBP rings were submitted for usewear and residue analysis (Lombard 2001; 2003:6-13). (See also chapter 5.3.1 for a discussion of ochre residues on the OBP rings). The analysis confirms extended curation, traces of resin and woody residues, plant tissue and fibres, starchy remnants, charcoal, some animal collagen and fat, as well as concentrations of ochre. Usewear suggests functional

applications, including possible suspension on a rope or thong, while edges and residues display post-breakage secondary use in scraping and possibly hide processing activities (Lombard 2001, 2003).

The lithic ring fragments from the LSA site of Goergap on the Waterberg Plateau excavated during a previous research project (Van der Ryst 1996, 1998a) were also subjected to residue and use-wear analysis. Similar findings as at OBP include secondary use in scraping activities on animal and plant substances and a pervasive presence for ochre. Domestic and ritual applications for lithic rings were proposed based on the results obtained from the two sites, underpinned by ethnographical data (Lombard 2001, 2003). Whereas use-patterns suggest that the lithic rings from OBP and Goergap were multi-purpose tools, extended curation is shown by the layering of residues. Ochre, animal and plant remains are prevalent on all the fragments. The study included a complete specimen from the Unisa museum collection, on which comparable residues were established, but less evidence for domestic use. A larger sample should be investigated in order to determine the symbolic and secular nature of complete rings relative to fragments (Lombard 2001:89).

4.3.3.10 Miscellaneous groundstone

The OBP inventory contains 19 non-flaked lithics with grounded surfaces, of which palettes are more prominent. Six palettes were recovered, of which several display ochre-staining. Principal identification characteristics for palettes are flat surfaces, which may retain traces of pigments and polish (De Beaune 1993:166; Adams 2002:146-7). Grave goods in the Cape region sometimes included slate palettes (Wadley 1997b:115). Palettes at OBP are more common earlier in the sequence. However, their distribution is random, as is the case with all diverse groundstone objects. Types of rock used for palettes are sandstone and quartz at 33.3% each, and soapstone and schist both at 16.7%. The remainder of diverse groundstone are pieces to which no definite functions have been assigned. Soapstone is the dominant rock type for the miscellaneous pieces at 61.5%, with a relative even use of other rock types for the remainder.

Relative frequencies of miscellaneous groundstone work

	S	1	2	3	4	5	6	7	8	9	10	Total
Total				3	5	1	4	1	3	1	1	19
%	0.0	0.0	0.0	15.8	26.3	5.3	21.1	5.3	15.8	5.3	5.3	100.0

Clustering of these objects in Zone 1, with the next common occurrence in the area around and across the fireplaces, is analogous to the general pattern of spatial organization at OBP.

Total miscellaneous groundstone work according to various zones in the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
Total	7	6	2	3	1	19
%	36.8	31.6	10.5	15.8	5.3	100.0

open shared space

private inner space

4.3.3.11 Anvils/nutting stones, lower grinders

Stone slabs in a rough form, with use traces or impact marks from percussion, are passive support pieces serving as work surfaces for tool manufacture, food preparation and processing of pigments (De Beaune 1993:163; Adams 2002:157-9). At open camps anvils and stone hammers used to crack nuts are regularly found in nuclear areas containing high-density concentrations of bone, which have no relationship with these implements, but are '... physical markers of quite different activities, linked only by the identical social contexts in which they took place' (Yellen 1977:97). Percussion implements, such as hammer stones and punches, feature in more active roles. Water-rounded pebbles with damage sustained from intensively repetitive percussion form part of the lithic toolkits of very early hominins at Makapansgat, and experiments conducted on similar quartzite stones confirm their probable use as pounders and nutting stones (Maguire 1965:117-30).

A study of hard and soft stones used in nutting and pounding suggested that constant use produced sub-spherical or complete round pounders with percussion damage, and also that pebbles of durable rock types were transported and traded extensively among indigenous farming communities (Boshier 1965:131-6). At OBP objects with pecked surfaces include anvils, nutting stones and lower grinders. These implements were probably employed in multiple tasks and combined functions at OBP, including tool manufacture, food processing and the crushing of pigments. It is not always possible to distinguish between lithic anvils and nutting anvils (Adams 2002:157). At OBP prolonged used for the crushing of nuts like marula, and/or pigment processing, resulted in more defined hollows (see Appendix N). Other roughly

shaped blocks with relative flat horizontal surfaces tend to have shallow irregular depressions with pecked or battered impact scars signalling tool manufacture.

Whereas only one lower grinder was *in situ*, several lower and upper grinders are present on the modern surface, but were not included in the analysis. Lower grinders may have been used for grinding pigments, and certainly featured in the processing of substances for food and medicines. At OBP a discrete activity area is indicated by the spatial pattern of lithics where the lower grinder from layer F2.6 is accompanied by a broken hammer stone and three rubbing stones of which one is broken. The abutting squares on this level contained two grooved stones and a hammer stone in D2.6, another grooved stone in C2.6, and an anvil and hammer stone in A2.6. The relative frequencies of chunks, chips, quartz crystal and pebbles in this layer are quite high, but not markedly so. As incremental production activities are particularly noticeable as from layer 5, it is perhaps not surprising that so many production implements began to make an appearance. Due to their bulk these pieces are positioned between different levels and the following layer 7 does show quite considerable increases in the frequencies of most lithic. The relative frequencies of primary products and formal tools are also high in this layer, and especially, for borers and awls.

At OBP these implements also show a marked spatial constraint, clustering in Zone 1, which corresponds with the bulk of production activities. The private areas around fireplaces have very few anvil stones and then mostly much smaller, which may relate to the use of a soft hammer for the retouch of flake blanks into tools (see Appendix N). Flakes of roughly circular form, suggesting scraper roughouts, were also quite common in such areas. Dimples commonly develop on anvil stones used for cracking mongongo nuts, and anvils are sometimes also used as a base for the drilling and fashioning of OES beads (Yellen 1977:141).

Total anvils/nutting stones/lower grinders according to zones in the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
Total	27	13	6	2	2	50
%	54.0	26.0	12.0	4.0	4.0	100.0

 open shared space

 private inner space

Relative frequencies of anvils/nutting stones, lower grinders												
	S	1	2	3	4	5	6	7	8	9	10	Total
Total				1		3	6	15	7	10	8	50
%	0.0	0.0	0.0	2.0	0.0	6.0	12.0	30.0	14.0	20.0	16.0	100.0

Most of the anvils are on quartzite at 95.8% and the remainder on felsite. Quartzite was also used for the lower grinding slab. In the Kalahari a flat stone (often quartzite) is set under a wooden mortar to provide a hard crushing surface and prevent splitting of the base by the force of the pestle impact (Schapera 1925:144; Silberbauer 1981:229).

4.3.3.12 Hammer stones, punches and rubbing stones

Identifying criteria for hammer stones and punches include a regular spherical or oval morphology with impact scarring on surfaces or extremities. Smoothing tools have smooth, use-polished surfaces flattened by use (De Beaune 1993:167). Impact fractures and scars on archaeological specimens resulted from deliberate, forceful contact between two surfaces, such as crushing and pounding with heavier stones, or through use of the rounded surface of small hammer stones in a pecking stroke to detach flakes (Adams 2002:41). The greater application of load with a stone hammer generally produces more impact on the objective piece than is the case with a softer and lighter bone percussion, and stone hammers are also used on a punch for indirect percussion (Andrefsky 1998:11-2). OBP produced 59 of these implements. Several of these tools exhibit crushed edges, and a small central depression, which suggest use as a portable anvil. The smaller oval stones, with battered extremities, are interpreted as punches. One large specimen with a conically-shaped form was recovered in Zone 1 from the general area of the *in situ* large anvil accompanied by microliths. Hammer stones are also applied as pestles for processing substances such as berries and ochre (Schapera 1925:144; Marshall 1976a:415). Discolourations on several smooth, ovoid stones at OBP were probably acquired through ochre-crushing.

The distribution of these tool types reflects main areas of use, namely 81% in Zone 1 with a much lower incidence of 17.2% in Zone 3. In the latter space most were recovered from areas across fireplaces, where there is more space to undertake activities. The frequencies of anvil/nutting stones in Zone 1 mirror that of hammer stones and punches. This is in contrast with Zone 3 where larger stone blocks are virtually absent.

Total hammer stones/punches/rubbing stones in various squares of the grid						
	Square 1	Square 2	Square 3	Square 4	Square 5	Total
Total	34	13	1	8	2	58
%	58.6	22.4	1.7	13.8	3.4	100.0

The rock types for hammer/rubbing stones are mainly quartzite at 55.2%, with felsite next at 27.6%, while the others are on quartz. Quartzite is again the common material for the punches at 76.7%, followed by quartz at 16.7%, with the remainder on felsite.

These tool types feature throughout the sequence, albeit in varying frequencies. Their numbers in Layers 6 and 7 correspond with the high proportions of objective lower stone blocks indicated above, whereas level 10 shows a very high incidence of active percussion and hammer tools, which are not to the same extent mirrored by anvils.

Relative frequencies of hammer/rubbing stones/punches												
	S	1	2	3	4	5	6	7	8	9	10	Total
Total	1	1			1	4	10	11	8	5	17	58
%	1.7	1.7	0.0	0.0	1.7	6.9	17.2	19.0	13.8	8.6	29.3	100.0

4.4 CONCLUDING REMARKS

Studies among current hunter-gatherers demonstrated that broad categories of activities produced notable quantities of refuse. Main activities are the production and maintenance of hunting implements, curing of hides and fashioning clothes and carrying bags, tool maintenance, food processing and fashioning decorative pieces (Bartram *et al.* 1991:69). In any excavated deposit a much-reduced range of artefacts an/or debitage informs on tool-use. The archaeologist, therefore, can only make indirect inferences about the scope of activities. From limitations imposed by the archaeological record we seldom know of '*all* the ways in which a tool, weapon or other artefact was used' (Silberbauer 1996:63). The circumscribed spaces of rock shelters generally contain and preserve more data on the choices exercised and possessions used in the structuring of activities. At OBP the lithic analysis confirms that artefact distribution was not uniform across the excavated grid, similarly to other studies on spatial distribution within shelters and in relation to hearths (Nicholson & Cane 1991:305).

The characteristic structuring of domestic space at OBP accounts for a decrease in artefact densities towards the rear part of the shelter. The bulk of materials imported for knapping, heavier cores, debitage and large stone blocks used as anvils, as well as percussion pieces, occurred in the peripheral part of the shelter. There the talus likely functioned as a major discard locale. The production of primary flaked products, and also their secondary retouch into formal tools, formed the major focus of the open space. These inferences are substantiated by comprehensive numbers of formal tools found in contexts suggesting large-scale manufacturing activities. Apart from obvious scheduled activities, which are reflected in broad differences between spatial structuring as discussed in previous chapters, some fine-grained patterning of task-related tools was recovered from the open space. This is best illustrated by the above recovery of an anvil, accompanied by lithic waste and formal tools, in the actual spot where knapping and tool manufacture took place.

Hearths are major areas of consumption and activities (Blankholm 1996:85). The fire circle is the focus of socialising, talking and where small projects of manufacture and maintenance are undertaken. A particular use of space around fireplaces is a manifestation of egalitarian organization. However, this space is also structured along observed practices as people arrange themselves according to gender and kin (Marshall 1976a:84-6, 249; Yellen 1977:87; Valiente-Noailles 1993:113-4). At OBP the data confirm that subsistence-related activities and

manufacturing of decorative items, such as OES beads and objects invested with care, were scheduled around the fireplaces and immediate spaces.

The lithic assemblage contains typical classic Wilton tool types and comparable frequencies in the various classes of implements. A 4% formal component relative to imported materials is analogous to other late Holocene assemblages. The relative frequencies of lithics are the highest in deeper, older levels, and decrease exponentially in the upper, more recent sequence. The late occupation is marked by changes in the use of this locality as evidenced by the changing frequencies of lithics. These layers contain a similar range of artefacts, but in lower frequencies, and introduced exotics discussed in chapters 6 and 7.

Backed and double-edge scrapers in representative quantities are conspicuous in the OBP assemblage. These scraper types are analogous to examples in LSA assemblages from Botswana, Zimbabwe and Namibia, but also regions as far as the Cape (Malan 1950:140-2; Walker 1998a:76; Deacon & Deacon 1999:115; Mitchell 2002:186). The specific function of backed scrapers is still unclear. Whereas the residue analysis confirms a high prevalence of ochre and evidence for hafting, it cannot satisfactorily explain the predilection for such a singular scraper class. A technological approach for the analysis of groundstone is supplemented with functional inferences based on ethnography. Of note here are the large proportion of grooved stones suggesting production of significant quantities of bone tools and OES beads, which form the subject of chapter 6 where the non-lithic remains are discussed.

Whereas various rock types were used for the lithic component, quartz and quartz crystal are clearly dominant at 66% of raw materials, and an aggregate of 56.5% for all imports including flaked and ground pieces. Quartz crystals and quartz are prominent in most LSA assemblages (Barham 1992:47; Wadley 1992:53-4). However, their specific functional and ritual values and associations will probably never be fully known. Stone tools also featured in narratives on the Mantis (Bleek & Lloyd 1911:3, 11, 15). Shiny materials, but in particular quartz crystals, are widely associated with altered states of consciousness, shamanic paraphernalia, rock art and even rain control, and are also present in grave contexts (Wadley 1997b:127-8; Whitley *et al.* 1999:221-47; Lewis-Williams 2000:110; Lewis-Williams & Pearce 2004:9-26, 63-5, 101,143-4; Miller 2006:44-7). The physical property of quartz, which causes it to glow when struck or abraded, is known as triboluminescence, and is considered a visible sign of supernatural

power (Whitley *et al.* 1999:236). In Australia rock crystal offerings are sometimes found inserted in fissures around rock art panels (Whitley *et al.* 1999:221-47). The functional and perceived ritual qualities ascribed to quartz are demonstrated by the use of crushed quartz as a flux in the smelting of iron by a former hunter-gatherer then resident in an area between the Mogalakwena and Lephalala, as 'otherwise he said it [the iron] will not flow like water' (Marais 1920:5).

The relatively large component of haematite from OBP is so remarkable that the data on pigments from Mason's preliminary excavations were included for a study on the role of ochre in the origins of symbolic culture (Watts 1998, 2002). Pigments in ethnographic and archaeological contexts are discussed in more detail in the next chapter, which also focuses on the prevalence of pigments at OBP.

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Fig. 4.1 Examples of lithics from OBP
Backed scrapers: Row 1-2
CCS, excepting row 1.3, 1.6, 1.7 & row 2.1, 2.3 which are in quartz (all examples are from A1.8)
Cores: Row 3-9
All quartz crystal: row 3.1-3.4 (B1.7); row 4.1 (A1.8) and row 4.2-4.3 (B1.7); row 5 (A1.6)
All felsite: row 6.1 (B1.7)-6.2 (D1.10)
All quartz:: row 6.3 (B1.7); 6.4 (D1.10); row 7-9 (all B1.7)

Fig. 4.2 Examples of microliths from OBP
Segments: Row 1
Row 1: 1.1 CCS (A4.5); 1.2 quartz crystal (B1.7); 1.3 quartz (B1.7); 1.4-1.5 CCS (A2.6); 1.6 quartz crystal (A2.6)
Small scrapers: Row 2-10
Row 2: *Sidescrapers*: 2.1 CCS (A1.8); 2.2 felsite (A1.8); 2.3 cortical quartz (A1.8); 2.4 quartz crystal (A1.8); 2.5 quartz (A1.8)
Row 3: *Circular scraper* 3.1 quartz (A1.9); *End-and-side with adzing* 3.2 CCS (A4.5); *Cortical endscraper* 3.3 quartz (B1.7); *End-and-side* 3.4 CCS (B1.7)
Row 4: *Endscrapers*: 4.1 quartz (A1.8); 4.2 quartzite (A1.8); 4.3 CCS (A1.8); 4.4 CCS (A1.8); 4.5 cortical CCS (B1.7)
Row 5: *Backed scrapers* from B1.7: 5.1 quartz crystal; 5.2 cortical CCS; 5.3 quartz; 5.4 quartz crystal; 5.5 CCS (A2.7)
Row 6: *Backed scrapers* from B1.7: 6.1 felsite; 6.2 CCS; 6.3 CCS; 6.4 CCS; 6.5 CCS; 6.6 CCS (A2.7)
Row 7: *Cortical endscrapers* from B1.7: 7.1 quartz; 7.2 CCS; 7.3 CCS; 7.4 quartz crystal
Row 8: *Side-and-endscrapers* from B1.7: 8.1 quartz; 8.2 CCS; 8.3 quartz crystal; 8.4 *two-sided* quartz crystal (F1.9)
Row 9: *Sidescrapers* from A2.7: 9.1-9.4 all CCS; 9.5 *two-sided* quartz crystal (F1.9)
Row 10: *Backed scrapers* from A2.7: 10.1-10.3 CCS; 10.4 quartz crystal; 10.5 *two-sided* quartz crystal (F1.9)

Fig. 4.3 Examples of microliths from OBP:
Borers: Rows 1 - 4
Row 1: 1.1 cortical quartz (A2.4) and 1.2 (B1.7); 1.3 quartz crystal (A4.7); 1.4 quartz (A1.7); 1.5 quartz crystal (A1.7); 1.6 quartz (A1.7)
Row 2-4 (all from A1.6): 2.1 cortical quartz; 2.2 CCS; 2.3-2.4 cortical quartz, 2.5-2.6 quartz crystal;
3.1 -3.3 cortical quartz; 3.4 quartz crystal; 3.5 quartz; 4.1-4.3 cortical quartz; 4.4-4.6 quartz crystal
Row 5: 5.1 *medium sidescraper* (A1.8); 5.2 *cortical medium endscraper* (A1.8); 5.3 *backed scraper* CCS (D1.10); 5.4 *core-reduced* quartz (D1.10)
Rows 6-9 show a selection of the microliths found with an anvil and punches from D1.10:
Row 6: 6.1 *bladelet core* quartz; 6.2 *sidescraper* CCS; 6.3 *sidescraper* quartz; 6.4 borer CCS; 6.5-6.6 flakes CCS; 6.7 *bladelet core* quartz crystal
Row 7: 7.1 *borer* cortical quartz; 7.2-7.7 *bladelets* quartz and quartz crystal
Row 8: *backed scrapers* 8.1-8.2 CCS; 8.3-8.5 quartz
Row 9:*segments* 9.1-9.2 CCS; 9.3-9.6 quartz crystal

Fig. 4.4 Examples of bladelets from OBP

Row 1: *pointed bladelets* from A3.8: 1.1 CCS; 1.2 quartz crystal; 1.3-1.7 quartz
Row 2: *pointed bladelets* from A1.5: 2.1-2.5 quartz and quartz crystal bladelets
Row 3: *parallel-sided bladelets* from A1.5: 3.1 quartzite; 3.2 quartz; 3.3-3-4 CCS
Row 4: *thick triangular bladelets* from A1.8: 4.1 CCS; 4.2-4.3 quartz; 4.4 *parallel-sided* quartz crystal (A1.5)
Row 5-6: *pointed bladelets* from A1.8: 5.1 quartz; 5.2-5.4 CCS; 5.5 quartz;
6.1 CCS; 6.2 quartz crystal; 6.3 CCS; 6.4 quartz crystal
Row 7-8: *backed bladelets* from B1.7: 7.1-7.2 quartz; 7.3-7.4 quartz crystal; 8.1 quartz; 8.2 CCS; 8.3-8.7 quartz crystal

Fig. 4.5 Examples of awls and borers (row 1-4) from OBP (**row 5-6)**
Row 1: 1.1 felsite (F1.8); 1.2 cortical quartz (A1.9)
Row 2: 2.1 cortical quartz (A1.7); 2.2 cortical quartz (A1.9); 2.3 cortical quartz (F1.8)
Row 3: 3.1 quartz (A3.8); 3.2 felsite (A1.7); 3.3 cortical quartz (F1.8)
Row 2: 4.1 cortical quartz (A3.10); 4.2 CCS (A1.6); 4.3 quartz (A4.7)
Row 5-6: from B1.7: all quartz and quartz crystal except CCS for 5.5

Fig. 4.6 Examples of the different types of bladelet cores from OBP
All examples are from A1.8, and on CCS except for example 3.1 and the two 2 examples in the penultimate and last rows, which are on quartz

Fig. 4.7 Examples of cores with cortex from OBP
Row 1: 1.1 cortical quartz (A1.9)
Row 2: 2.1 cortical quartz (A1.9); 2.2 cortical quartz (A1.6)
Row 3: 3.1 cortical quartz (A1.9); 3.2 cortical quartz (A1.6)
Row 4-6: 4.1 cortical quartz (A1.6); 5.1 cortical quartz (A1.6); 6.1 haematite (A1.6)

Fig. 4.8 **Examples of cores from OBP**
Row 1-2: *irregular cores:* 1.1 quartzite (A1.8); 2.1 felsite (A1.9)
Row 3: *pebble cores*: 3.1 felsite (A1.8); 3.2 cortical quartz (A1.8)
Row 4-5: *core-reduced* 4.1 quartz; 5.1 quartz

Fig. 4.9 **Examples of blades from OBP** (all from D1.10)
Row 1: 1.1 quartzite; 1.2 quartzite
Row 2: 2.1 felsite; 2.2 CCS
Row 3: 3.1-3.2 cortical quartz
Row 4: 4.1 CCS

Fig. 4.10 **Examples of lithics from OBP**
Row 1-2: *large sidescrapers*: 1.1 CCS (A1.9); 2.1 cortical quartz (A1.9);
Row 3 -4: *examples of grooved stones*: sandstone (F3.3)

Fig. 4.11 **Examples of large scrapers from OBP**
Row 1: *large end-and-side scraper*: 1.1 quartzite (C1.7)
Row 2: *large end-and-side scraper*: 2.1 felsite (A1.8); *cortical endscraper* 2.2 quartz (A1.8)
Row 3 : *core scraper*: 3.1 felsite (A2.10)
Row 4 : *circular scraper*: 4.1 felsite (A1.9)
Row 4 : *large end-and-side scraper* 5.1 felsite (A1.9)

Fig. 4.12 **Spokeshaves, adzes and burins:**
Row 1: *Spokeshave* 1.1 felsite (F3.10)
Row 2: *Burin* 2.1 quartzite (A4.7); 2.2 *Adze* felsite with some cortex (B1.8)
Row 3: *Spokeshaves* 3.1 felsite (D1.6); 3.2 ochre (D1.6)
Row 4: *Adze* 4.1 felsite (F1.7);*Spokeshave* 4.2 haematite (F1.10)
Row 5: *Spokeshave* 5.1 cortical CCS

Fig. 4.13 **MSA tools and antiques from OBP**
Row 1: 1.1 CCS (A1.10); 1.2 felsite (A1.10)
Row 2: 2.1 felsite (A1.10); 2.2 quartz (A1.10)
Row 3: 3.1 quartz (A1.9); 3.3 felsite (C1.10)
Row 4: 4.1 felsite (C1.10); 4.2 CCS (C1.10)
Row 5: 5.1 CCS broken (F1.10)

EARTH PIGMENTS AT OLIEBOOMSPOORT

... the mark of a bride (Marshall 1976a:277)

5.1 INTRODUCTION

This chapter details the role of pigments, and in particular ochre and haematite, in the assemblage from OBP. The very preliminary investigations by Mason (1962) yielded impressive quantities of haematite. The extensive use of ochre at OBP during the MSA is frequently remarked upon (Volman 1984:215; Mitchell 2002:99; Wadley 2005a:201). The ochre assemblage from the MSA levels at OBP accordingly featured prominently in a study on the role of ochre in the origin of symbolic culture (Watts 1998, 2002). The MSA pattern of particularly high pigment volumes is to a large extent matched in the OBP LSA occupation levels. Utilization of ochre during the LSA shows an exponential trend of increasing volumes in all classes of material, including pigments, and becomes particularly noticeable at approximately 2000 years ago. Haematite is an integral element of most hunter-gatherer assemblages. Pigments are ever present at sites in the Waterberg, but haematite nowhere occurs in such high frequencies as at OBP. A discussion of earth pigments with reference to archaeological and ethnographical data is accordingly included. Particular findings on the use of haematite and ochre at OBP are then discussed in more detail.

In Botswana a demand for this valued commodity by indigenous farming communities led to increased quarrying and even mining at ore sources exploited by hunter-gatherers, especially at Tsodilo Hills (Robbins 1990:329-30; Robbins *et al.* 1998:144-50). Increasing use of especially haematite ores by iron-using farming communities resulted in intensification of mining at many localities formerly quarried by hunter-gatherers for their own relatively small-scale use. Much larger quantities were required for smelting activities. In addition, ochre was used by virtually all indigenous farming communities in decorating their pots. This practice has endured: historical records recount that ochre, which was often stocked in shops or obtained from travelling salesmen, was widely traded (Lawton 1967:8). Colour symbolism, which was central to puberty and other ceremonial life events of African farmers (Hammond-Tooke 1981:136; Prins & Hall 1994:190-1), created a continuous demand for the different haematites. The control of rich ore resources and widespread barter with neighbouring indigenous farming communities yet again demonstrate the flexible approach of hunting and gathering groups in incorporating new economies into their own socio-economic strategies (Barnard 1992;

Guenther 1994; Whittle 1996; Widlok 1999b; Mitchell 2004). In this chapter I explore data on pigments from OBP for evidence of analogous practices.

5.2 THE COLOUR OF LIFE: ARCHAEOLOGICAL AND ANTHROPOLOGICAL PERSPECTIVES ON PIGMENTS

Utilized and unmodified nodules of haematite are ubiquitous in all excavated assemblages in the Waterberg. The term derives from the Greek *haimatitēs* (*lithos*), i.e. blood-like stone (Pearsal 1999:639), based on its appearance after having been crushed. Earth pigments, and primarily haematite or red ochre, are common in habitation areas, caches and burials. Cultural materials as well as human and animal bones in faunal assemblages are often found stained with ochre (Mitchell 2002:244; Stafford *et al.* 2003:71). Various geological processes, including sedimentation and metamorphism, produce haematite. Utilized pigments can be in the form of iron oxide that includes haematite (Fe_20_3, with a chemical composition of iron and oxygen) or an iron hydroxide, such as goethite (FeO(OH) (Wadley 2005a:201). Colours range from light pink to a very dark red, and a particular hue results from the specific composition of each deposit (Stafford *et al.* 2003:81). Although rich ore bodies were mined, the weathering of rocks produces huge quantities of nodules that could be readily collected. Specular haematites (commonly termed specularite) from some deposits have a bright, metallic lustre, which most probably adds to their appeal. Specular haematite and ochre were sources of pigments for especially body ornamentation. Pigments were also used widely in the production of rock paintings, in burials and other symbolic applications, which include menarcheal and wedding rituals and during healing practices (Widlok 1999b:90; Lewis-Williams & Pearce 2004:23, 59,101,105). It was also commonly used for utilitarian purposes, as will be demonstrated in the following section.

The use of red ochre is universal, and it is the most widely utilized earth pigment (Watts 2002:1). Pigments, but moreover the exceptional pieces of engraved and ground incised pieces of ochre from MSA contexts at Blombos Cave and Wonderwerk in the southern and northern Cape respectively, attest to the time depth of such practices (Henshilwood *et al.* 2002:1278-80; Mitchell 2002:99). Ochre-staining was also found on some of the shell beads recovered from MSA levels at Blombos (Henshilwood *et al.* 2004; Wadley 2005a). The use of natural earth pigments as a colouring medium relates to ritual elements, religious beliefs, and ideological perspectives or world views rooted in the supernatural. The colour resemblance of

crushed ochre to blood and the symbolic relationship between ochre and blood, i.e. to life and death, is often cited as the reason why ochre was selected for use in divers ethnographic rituals (Stafford *et al.* 2003:71-90). Shiny materials are moreover widely associated with altered states of consciousness, and when used as an ingredient for paint in an historic re-enactment of rock painting, ochre is said to be the only substance mixed with eland blood (How 1962:34-5; Lewis-Williams & Pearce 2004:101-2).

Hunter-gatherers and herders, but also indigenous farming communities and in particular the Sotho-Tswana, made extensive use of pigments for body ornamentation, on clothing, and as medicines, and both specularite and ochre featured in barter or trade (Campbell 1822(1):111, 119, 154, 188, 214; (II):194; Stow 1910:45-6, 318; Dornan 1925:89; Schapera 1930:67, 69; Notcutt 1935:123; Engelbrecht 1936:106; How 1962:34). Ochre continues to hold ritualistic connotations for a broad spectrum of people in southern Africa and also in other parts of the world. The symbolic qualities attached to pigments used for rock arts account for current practices by traditional healers, who remove paint for healing and other ceremonies from mostly red ochre paintings, as 'the paint had its own power' (Lewis-Williams & Dowson 1990:14). In areas where ochre is not available, such as the Kalahari, red substances obtained from the bark and wood of the teak tree are widely used and also traded with farming neighbours (Widlok 1999b:63, 72, 79-80, 94-5).

Historical accounts inform on the procurement and mining, but also the exchange and trade of specular haematite and ochre (Bleek & Lloyd 1911; Dunn 1931; How 1962; Burchell 1967). The archaeological data confirm collection, processing and trade of pigments (Rudner 1971; Beaumont & Boshier 1974; Thackeray *et al.* 1983; Beaumont & Morris 1990; Robbins 1990; Barham 1998, 2002; Robbins *et al.* 1998). Specular haematite was extensively mined by at least 40 000 BP at Lion Cavern, Swaziland (Mitchell 2002:99). Haematite is also present in MSA levels at Tsodilo Hills. Intensified quarrying of ore bodies from at least 20 localities and numerous other shallow pit excavations at Tsodilo suggest regularly mining ca AD 800 to 1000 (Robbins 1990:329-30; Robbins *et al.* 1998:144-5). Specularite is abundant in the MSA levels at OBP (Wadley 2005a). The extent of the haematite excavations at Nauga near the Orange River suggests that this locality was quarried extensively over a long period of time (Dunn 1978:44-6; Beaumont & Morris 1990:65-74; Mitchell 2002:256-7). Nauga was a rich and well-known ore source. Dunn (1931:110) was told that 'it was from here that the Bushmen and other

natives for hundreds of miles obtained their supplies of specular iron ore, which becomes red when burnt'. Investigations at Blinkklipkop near Postmasburg in the northern Cape (Thackeray *et al.* 1983; Beaumont & Morris 1990) established a date of AD 800 for the utilization of this particular rich source. The premise that specularite was highly valued and selected for its visual properties seems reasonably secure, even against widespread functional hypotheses (Watts 1998:311).

It is said that women collected the pigments (Rudner 1982:149). Although OES bead blanks at some of the excavated mining localities do argue for the presence of women (Thackeray *et al.* 1983; Beaumont & Morris 1990), both male and female band members were probably involved in the quarrying and collecting of pigments. Different localities were sourced, as '*[t]tő* is in the mountain, the *ttő* mine; the people say that the *ttő* mine is on the side of the mountain ...[t]hey also get *//hára* ... (Bleek & Lloyd 1911:379). The mines were powerful places associated with sorcerers. Ritualized behaviour was consequently required for protection before and during a quarrying trip, and 'therefore the people who intend to pound *ttő*, rub themselves when they (go to) collect *ttő*', and also hurled stones at invisible sorcerers to send them into hiding (Bleek & Lloyd 1911:379). Pigments were stored in OES containers, but also pottery vessels, and caches of iron ore, specularite and red ochre have been recovered from a number of localities (Rudner 1971:141; Sandelowsky 1971:153; Thackeray *et al.* 1983:17).

Haematite is easily processed by crushing or scraping the surface of chunks to produce powder. Ethnographic studies among Australian Aborigines suggest that scraping is more efficient than crushing, which may account for the presence of large numbers of projectile points at mines in America (Stafford *et al.* 2003:87-8). Stone grinders and lower grinding stones were used to process pigments, which were then mixed with binders or liquids on small stone palettes (Dunn 1930:110). Ochre has natural adhesive properties that react to binders or heat application (Wadley 2005b:1-2). Vegetal gum or animal fats were universally used to bind the pounded ochre (Adams 2002:209). The powdered ochre was mixed with plant sap, water, blood, or other substances and diluted if a more liquid medium was required. Ochre is remarkably durable even without the addition of a base carrier (Stafford *et al.* 2003:83).

Biesele (1993:196) discerned a trend in San narrative texts recorded in the Kalahari where, whenever ritual activities were implicit, 'the women are always sitting by their fires pounding

ochre for the ceremony'. In the past processing of pigments, again by women, was similarly ritualized (Bleek & Lloyd 1911:377-9; Arbousset & Daumas 1968:248). The Bleek and Lloyd documents as well as several other accounts suggest that women were involved in the production of pigments to be used for rock paintings and in shamanistic activities (Ouzman 1997a:102). In Marion How's (1962:35) account of painting by groups in Lesotho at the end of the 19th century, pigments were said to be prepared by a woman under a full moon who roasted the glittering haematite until red hot. She then pounded the substance into a powder. Heat treatment metamorphoses yellowish iron hydroxide into a red iron oxide (red ochre/haematite), intensifies the red colour, and facilitates crushing (Watts 1998:440; Stafford *et al.* 2003:83).

This prized commodity featured in long-distance exchange routes and bartering, and moved on a large scale (Bleek & Lloyd 1911:281, 379; Mitchell 1997:390). In one account the /Xam exchanged springbok skin bags for poisoned arrows, ochre (*ttó*) and specularite (*//hára)* (Bleek & Lloyd 1911:281-3, 377). The /Xam differentiated between ochre and specular haematite for use, and applied distinct terms when referring to the various substances. A particular red haematite was called *//kạ*, and not *ttó* (Bleek & Lloyd 1911:359). The association of red haematite with supernatural powers is evident in the believe that /Xam sorcerers could produce locusts (connected with rain) from this substance: 'For people who go to take out the locusts they make them of *to*: which is the stuff they make them of' (Hollmann 2005:217). The shimmering specularite was mixed with fat and then applied to the hair. Red ochre was mostly used as body decoration. 'And they pound *//hára*, they anoint their heads ... *//hára* sparkles; therefore, our heads shimmer, on account of it; while they feel that they sparkle, they shimmer. Therefore, the Bushmen are wont to say, when the old women are talking there: 'That man, he is a handsome young man, on account of his head, which is surpassingly beautiful with the *//hára's* blackness' (Bleek & Lloyd 1911:377-9). In Lesotho the glittering ochre was also known as *qhang qhang* (How 1962:34-5). In another /Xam account specularite as a powerful substance was used to draw a baboon (Hollmann 2005:8).

Red ochre and also red substances obtained from plants and trees were important in rites of passage, e.g. burials, menarcheal rituals, a first successful hunt for boys and in wedding ceremonies (Fourie 1925:28-9; Marshall Thomas 1959:158; Heinz 1966:119, 128; Marshall 1976a:276-7; Shostak 1976:400; Silberbauer 1981:152; Katz 1982:171; Wadley 1997b:123).

Elizabeth Marshall Thomas (1959) wrote on some of the ritual activities of the Ju/'hoansi. During a girl's seclusion in the wedding scherm '[t]he mother had brought a little fat (eland fat, if they had it, would be used) and a bit of powdered red stone, one of the red earths (*/gam !gai gwoie*) mixed with fat. She rubbed !Nai all over with the fat, and drew a line on her forehead and a circular design on her cheeks with the red powder mixed with fat' (Marshall Thomas 1959:359). In the ceremony of first menstruation '[t]he design on the face is the same ...' (Marshall Thomas 1959:360). G/wi girls painted ochre on men before a hunt to protect them from rain (Solomon 1989:53-4). Ochre for decorative purposes was frequently mixed with fats of plant origin (Dornan 1925:96). Ochre was also integral in rainmaking rituals. A narrative relating to /Xam beliefs on rain describes how a girl approaching water during a gentle rain had to throw sweet-smelling, and calming, buchu (*Aghatosma* spp.) into the water and then sprinkle red haematite onto the floating herbs to prevent thunder (Bleek 1933a:300). The preparations made by Ju/'hoansi women to harness *n/um* and healing power are remarkably similar to marriage and menarcheal rituals, and include application of a paste of ochre and fat (Katz 1982:170-1).

Women (and sometimes men) from virtually all hunting and gathering groups decorated themselves with ornaments before a dance, and used a paste of ochre, fat and powdered buchu on their bodies and hair (Schapera 1930:67, 202; Marais 1964:9, 13, 28; Arbousset & Daumas 1968:247). In an account of healing dances in the interior, which contains many elements consistent with trancing, missionary Arbousset and his assistant, Daumas (1968:247-8) called it the dance of blood. The dance was described as 'something of a religious rite' (Arbousset & Daumas 1968:248), being scheduled during cases of severe sickness. The strenuous activities exhausted the dancers to the extent that some would fall down with blood pouring from the nostrils. They also wrote (Arbousset & Daumas 1968:248) that the substance used for the brilliant hair powder, which was very much sought after, was collected from a ravine near the Caledon River. The copper ore (most probably specularite) was roasted in a fire and then crushed between stones to obtain a powder. Ochre mixed with fat was also applied to the head of a dead person before a burial (Arbousset & Daumas 1968:254).

Functional applications, which include widespread use as a raw material for stone tools, and in curing, preservation and colouring of hides, are increasingly acknowledged

(Barham 1992:48; Clottes 1995:51-2). The salts in iron oxides have a powerful astringent effect, tend to arrest haemorrhage and account for the antiseptic and deodorizing properties of ochre. Australian aboriginal groups not only apply ochre to the skin, but ingest the substance for its presumed healing properties, and in the Eastern countries ochre is used for drying ulcers, washing, purging and in eye remedies (Velo 1984:674). Earth pigments may have featured in tattooing for group identification and decoration in America (Stafford *et al.* 2003:84).

Campbell (1822(I):30) was told that San in the Cape interior prepared arrow poison from snake venom, which soon became hard, 'and is pounded with some of the red stone which they use, mixed with grease, to smear their bodies. The juice of the *Illiteris* bulb is then added, and with this composition they prepare their arrows'. Residue studies of excavated MSA stone tools from a number of sites suggest that traces of ochre may result from its addition to substances for fixing tools securely onto hafts. Recent replication experiments confirmed that ochre is functional as a loading agent for adhesives, and that application facilitates hafting (Wadley 2005b). The /Xam applied ochre, mixed with a type of adhesive or resin, onto arrows in marking ownership. Feather brushes used to channel game towards a trap (Marais 1964: 27, 29) were usually coloured with powdered ochre (Bleek & Lloyd 1911:359, 361, 363). OES beads, pendants, ornamental wear and clothing are commonly stained with ochre. Some San also applied pigments to their faces and bodies (red and yellow paints and white clay) as a type of war paint (Stow 1910:355; Arbousset & Daumas 1968:247).

5.3 PIGMENT USE AT OBP

5.3.1 Ochre and specularite

A local source is proposed when the bulk of the haematite in an assemblage displays no sign of modification (Watts 1998:311) This certainly applies to both the LSA and MSA assemblages from OBP. The Bushveld Complex provides ferric oxide or haematite of igneous origin in the form of haematite conglomerates in pebbles and rollstones, crystal matrices and sheets of specularite. Substantial low-grade as well as high-grade haematite deposits are commercially mined near Lephalale/Ellisras and also Thabazimbi (Brandl 1996). Chunks and pebbles of haematite, sometimes with an adherent quartz crystal matrix, are present in remarkable quantities in all levels of the excavated deposits at OBP. In 1869 Mauch undertook a geology exploration trip, during which he observed that quartz veins in the vicinity of the Mogalakwena River also contained haematite (Burke 1969:15, 26). He also investigated a prehistoric mine

halfway up a mountain known as Spitzkopje in the Soutpansberg, which yielded specular iron ore (Burke 1969:18). I also visited a red ochre quarry on the farm Riet in the Soutpansberg, which was extensively mined up to the recent past. Commercial mining of rich iron deposits around Lephalale/Ellisras doubtless destroyed most traces of prehistoric quarrying. An exceptionally rich source of iron oxides in a wide range of ochre hues (Peters 2000:53) near a prominent flat-topped hill close to the Lephalale River could not be investigated due to restrained access. This source occurs near the painted shelter associated with rain production and other ritual activities discussed in chapter 2 (Van der Ryst 1998a, 2003; Willcox 1963; Peters 2000). Similar rich deposits would have been exploited by hunting and gathering groups during annual cycles of movement across the landscape.

The bulk and mass of haematite recovered from MSA and LSA occupation levels at OBP argue for advance planning in the procurement and movement of this commodity. Watts (1998:311), in his study on collection and use of ochre during the MSA, noted that the OBP haematite assemblage contains some of the highest frequencies of haematite relative to lithics. His sample of 11 sites with MSA assemblages contained a total of 4083 pieces of potential pigments. OBP, with 304 pieces, accounts for one of three sites with high numerical contributions, but the mass (11 953.1 grams) of the OBP haematite accounts for half the sample (Watts 2002:4-5). In addition, the OBP sample included proportionately large quantities of specular haematite (Watts 2002:9-10). Local availability and abundance of specularite and other haematite are implied by the sheer volume introduced to OBP during the MSA and LSA.

The exceptional quantity of specularite in the ochre sample excavated by Mason (1962) and analysed by Watts (2002:9-10) proves the appeal of this shiny substance. The excavated haematite from the last 2000 years of LSA occupation at OBP yielded 9474 pieces with a mass of 43 974 g, and likewise included marked quantities of specular haematite. OBP seems to have been a special purpose site relating to either the procurement and/or use of brilliant materials and probably served as a collecting locale (Watts 1998:311). Whereas the collection of haematite remained remarkably consistent throughout all periods, there is a decline in the amounts deposited during more recent occupations. It is likely that appreciable quantities of haematite were utilized on the site, but that collection for exchange within bands, and during historic times, with indigenous farming communities, was also a consideration.

Many of the excavated ochre chunks display traces of utilization in striations, wear facets or polish. Several stone palettes were recovered and some specimens exhibit ochre encrustation. Dunn (1930:110) described the mixing of crushed pigments on small stone palettes. The OBP palettes were probably used in a similar manner. All classes of artefacts, including OES beads and decorated fragments, bone tools and lithics (see also chapters 4 and 6) have ochre encrustation or a film of ochre. Some ochre-staining obviously resulted from handling and pervasive presence of ochre in the deposit, whereas others have a distinct covering of ochre, which suggests purposeful application. Several upper and lower grinding stones stained with ochre confirm processing of the pigments (see also Appendix N for a hammer stained with ochre). The use of ochre in rock art is universal. In southern Africa haematite was the main ingredient of paints for the production of rock art (Rudner 1983:18-20, and the use of ochre in all rock art traditions is pervasive. At OBP both yellow, red and purplish pigments were applied in the production of the many handprints placed onto the shelter walls (Appendix M:fig. 1). A few examples of ochre are subsequently discussed in more detail.

Residue analysis on a sample of 63 stone tools confirmed the presence of ochre on 33% of tools. There are ochre remains on 50% of endscrapers with adzing, on 28.6% of side and end-and-sidescrapers, and on 50% of backed scrapers. Ochre residues were established on 23.5% of the other backed tools and the bladelets (Williamson 2006). An overall 25% of the sample displays ochre on the distal point. In most instances the ochre residue appears to be use-related. Incidental occurrences were not included in the total (Williamson 2006:2). The results of the residue analysis are discussed in more detail in chapter 4, which deals with the lithic component of the assemblage (see also chapter 4).

A paste of ochre and fat was commonly applied for cosmetic purposes, featured in burials and was used for many other purposes (Campbell 1822; Stow 1910:126, 318; Engelbrecht 1936:106; Dunn 1978:57; Thackeray *et al.* 1983). At OBP a cylindrical piece of ochre paste with a length of approximately 100 mm was recovered from Zone 1 (see Appendix N). The overall shape and surface ridges imprinted on the specimen suggest storage in either a bone tube or, more likely, an antelope horn sheath. The use of horn sheath containers is universal. Dornan (1917:44) says of the Tati San that '[n]early every man has one or more steinbok or duiker horns full of medicine or snuff strung round his neck'. The keratinised epidermal sheath is, unfortunately, rarely preserved in archaeological contexts (Reitz & Wing 1999:136). Hai‖om

women store ochre paste in the section of long bone, and old, worn pieces of leather (*!nauba*), are used as coverings for open ends. Ochre (*!gorob*) is generally mixed with fat (*ǂnuii*) (Lebzelter 1996:84). The Nama similarly used the central part of a horn, capped with pieces of hide, to store a fat and red powder paste. The paste was used on the face and body to prevent chapping. It is said that the paste was also used 'on other occasions', presumably during ritual activities (Vedder 1928a:126). The Himba keep powdered ochre and butterfat in separate containers (Jacobsohn 1999:103). The Korana made their fat-vessel on the section closest to the horn base, whereas the fat and ochre mixture was kept in somewhat smaller-sized horn cylinders (see Engelbrecht 1936:100-1, plate VII).

In other parts of the world ochre paste, or cakes, mixed with water or adhesives to hold a shape, may be reground for powdered pigment (Adams 2002:209-10). Red ochre used to be mixed with breast milk by some Native Americans and painted onto a baby's face after birth (Adams 2002:209-10). The inclusion of blood and fat was believed to enhance the potency of the paint medium. African farmers similarly attached great value to the magical qualities of red ochre and specularite (How 1962:34-35, 40-1; Lewis-Williams & Dowson 1990:14-5; Yates & Manhire 1991:9; Lewis-Williams 1995:146-7). Dornan (1925:188-9) witnessed the use of a crayon, previously made of ground ochre mixed with boiling fat, to fill in the charcoal outline of a painting. Liquid paint heated in a small stone crucible was then applied over the animal figure. Basset (2001:27-8) experimented with storage vessels. He found narrow horns better suited for storing and the subsequent pouring of ground ochre powder. When mixed with heated fat, the ochre could be stored in solidified form for easy transport. This treatment limited spillage and waste until paint was required, when the paste was reworked into painting consistency with a carrying agent (Basset 2001:28). The Herero treat hair with a fat and ochre mixture to prevent infestation with bothersome organisms (Vedder 1928b:182).

Two modified and abraded metacarpals coated with ochre were recovered in a space where there was also a cowrie shell and an unusually large OES bead stained with ochre (Appendix N). This cache from OBP could have been part of shamanistic accessories. The finds are parallelled at Kruger Cave where a similar modified metacarpal coated with glittering red ochre was excavated, and also a cowrie with specularite encrustation (Mason 1988:110, photo 64, 90, photo 50).

Fragments of the thick hard woody rind of *Strychnos* spp., stained with ochre, have also been recovered from the middle zone at OBP. The fruits are valued for their taste. They keep well, and are collected and transported over long distances as gifts and exchange items (Tanaka 1976; Lee 1979; Fox & Norwood Young 1982; Widlok 1999b, see also chapter 6). Decorated *Strychnos* fragments from the Matopos suggest their use as containers (Cooke 1963). It is accordingly inferred that ochre on *Strychnos* fragments at OBP derived from being used as containers during the processing of pigments around special-purpose fireplaces. Processing of haematite in contextual associations with this plant taxon, crushing stones, anvils and containers, is discussed in chapters 6 and 8.

Many of the Bambata and Icon ceramics at OBP are ochre-stained or retain traces of powdered ochre (see also chapter 7). The red ochre slip and ochre burnish on some of the Eiland sherds from OBP, which were applied before the vessels were fired, are clearly different from staining. Ochre residues on sherds from what are mostly jars in the OBP Bambata assemblage and also on Icon bowls from the site, suggest their use as containers to hold paint for activities where liquid ochre was required. Accumulation of residues on inner and outer surfaces of Bambata could have resulted from handling vessels with ochre-stained hands, storing or mixing ochre, and doubtless using an ochre-filled vessel during ritualized behaviour and in the production of rock art, especially for dipping hands into ochre to produce the many handprints (see also chapters 6, 7 and 8). Ochre residues on surfaces of Icon bowls are more difficult to explain, but mixing of slip for burnishing pottery vessels during the production process is a possibility.

The following tables show the distribution of pigments across the site. In chapter 3 the rationale for a zonal division of the excavation according to an apparent clustering of activities across the living space is explained. I repeat the basic division before discussing the patterning of pigments across the grid:

- The shelter space is divided into two main areas, which is based on data recovered through the excavations at OBP, but also on ethnographic analogies (Yellen 1976:61-68, figs 2.1-2.3, 1977:89-90).
- A three-zonal division for the two spaces is used only to facilitate the discussion of the excavations in chapter 3.

- Zone 1 and Zone 2 comprise the open, communal area fronting onto the talus: Zone 1 consists of squares 5 and 4 directly against the talus, and Zone 2 contains the central squares 3.
- Zone 3 comprises the inner, private space against the shelter wall. This zone consists of squares numbered 4 to 5 in the grid.

The archaeological findings at OBP suggest that the bulk of production activities was focussed on the open, shared space, which abuts the talus. This pattern is repeated throughout the sequence, but with some changes in density values through time that are ascribed to differential site usage by extended and nuclear groups (see chapters 3 and 8). The data for pigments clearly demonstrate that the bulk of the haematite and ochre was also concentrated in the shared space. The three squares in the grid that fall within this zone produced 71% of all pigments, as is evident from the next table:

Total pigments in various zones of the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
A	866	247	256	279	82	1730
B	829	254	169	299	206	1757
C	912	210	135	253	291	1801
D	924	351	225	413	351	2264
F	1058	142	139	223	339	1901
Total	4589	1204	924	1467	1269	9453
%	48.5	12.7	9.8	15.5	13.4	100.0

 open shared space

 private inner space

The next table illustrates that 74.4% of the total mass of deposited pigments accrued from the communal area. This clearly parallels the above pattern where the bulk of pigments was recovered from the open, shared space.

Total mass (g) of pigments in various zones of the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
A	5426	1283	649	1124	317	8799
B	4523	1315	654	1046	856	8394
C	3529	1050	616	920	1262	7377
D	4493	1745	1181	1658	1487	10564
F	4788	727	716	947	1634	8812
Total (g)	22759	6120	3816	5695	5556	43946
%	51.8	13.9	8.7	13.0	12.6	100.0

 open shared space

 private inner space

Although there is a relatively even distribution of pigments within the communal space, the D blocks (on the Y-axis of the alphabetically numbered datum line), do present somewhat higher numbers with a total of 24% throughout the sequence. These figures may not be statistically significant, but there seems to be a particular emphasis on the general area covered by squares C, D and F in the grid for the production of implements during the earlier occupancy of OBP, as is evidenced by the relative volumes of most classes of artefacts. Whereas the shared, open space continues to be the focal area for production activities throughout the sequence, high-density clustering within squares directly onto the talus during the earlier use of OBP is demonstrated by the UCA diagrams (see Appendix F). Although there is no direct link between pigments and ceramics, it is of interest that the distribution of ceramics is analogous to that for pigments. A total of 81.7% of all ceramics clustered in the shared, open space, which again demonstrate an emphasis on communal activities in the shared space. It is also notable that 37.6% of all ceramics was deposited in the D blocks.

Total pigments according to the Y-axis of the datum-line on the grid						
	A	B	C	D	F	Total
Square 1	866	829	912	924	1058	4589
Square 2	247	254	210	351	142	1204
Square 3	256	169	135	225	139	924
Square 4	279	299	253	413	223	1467
Square 5	82	206	291	351	339	1269
Total	1730	1757	1801	2264	1901	9453
%	18.3	18.6	19.1	24.0	20.1	100.0

The following table demonstrates that the bulk of pigments was recovered from deeper levels, and also that the trend corresponds with higher volumes of lithics and non-lithics reflecting intense production activities earlier in the sequence. This exponential trend is demonstrated by data in chapter 3 on the excavations, and also chapters 4 and 6 where the lithic and non-lithic components of the assemblage are discussed in more detail. The higher overall density of pigments in D and F as illustrated above, is in particular derived from the higher-density volumes present in the older levels in that specific area. The patterning can derive from the greater overhang of the shelter roof, which is more or less in this space, with a corresponding greater floor area for communal activities.

Frequencies of total pigments according to squares and layers

Square	S	1	2	3	4	5	6	7	8	9	10	Total
A	41	99	70	36	131	333	168	85	125	288	354	1730
%	2.4	5.7	4.0	2.1	7.6	19.2	9.7	4.9	7.2	16.6	20.5	100.0
B	48	81	59	69	110	130	158	321	274	264	243	1757
%	2.7	4.6	3.4	3.9	6.3	7.4	9.0	18.3	15.6	15.0	13.8	100.0
C	31	39	35	43	64	119	190	159	202	259	660	1801
%	1.7	2.2	1.9	2.4	3.6	6.6	10.6	8.8	11.2	14.4	36.6	100.0
D	49	79	124	63	105	166	101	157	337	354	729	2264
%	2.2	3.5	5.5	2.8	4.6	7.3	4.5	6.9	14.9	15.6	32.2	100.0
F	14	37	42	71	103	153	176	220	156	332	597	1901
%	0.7	1.9	2.2	3.7	5.4	8.0	9.3	11.6	8.2	17.5	31.4	100.0
Total	183	335	330	282	513	901	793	942	1094	1497	2583	9453
%	1.9	3.5	3.5	3.0	5.4	9.5	8.4	10.0	11.6	15.8	27.3	100.0

5.3.2 Ochre and lithic rings

Ochre and some specularite were present on the five broken lithic rings submitted for microscopic analysis, which was undertaken to determine the probable function of this enigmatic type of bored stones (Lombard 2001). The extensive southern African ethnography offers no explanation for lithic rings, whereas bored stones featured in both domestic and ritual activities (Wadley 1997b:115-22; Lewis-Williams & Pearce 2004:62). The lithic rings were recovered from levels 6, 7 and 10. The number of rings is statistically insignificant and the distribution does not show a particularly clear pattern. However, 60% clustered in the open space fronting onto the talus, and 40% in the more private loci against the shelter wall. What is more significant, is that the ring fragments were not recovered from levels dating to the more recent and transient occupation of the shelter, but only from a phase where the findings signal high levels of activities. The structuring of space during this period suggests the use of OBP by large groups, and the data from the excavations conform to the criteria for aggregation visits (Wadley1987). (See Appendix N for an illustration).

In the residue study a combination of low-power and high-power microscopy identified traces of usewear and organic residues on the lithic rings from OBP. Only one ring was made on

haematite and one on CCS, whereas sandstone was used as raw material for the other three rings. Except for one, all other specimens show post-breakage use (Lombard 2001:62). The rings were layered with different types of residues, albeit with no distinct patterning, which were probably acquired through curation and handling. Ochre and organic residues from plants were most common, but fat, collagen and animal tissue were also identified. Resin traces were not found in distributional patterns suggesting hafting (Lombard 2001:63). The smallest ring was particularly well made with a highly polished surface. Smoothened transverse scars and striations filled with ochre as well as plant fibres suggest that this specimen was probably worn on a rope of plant fibres (Lombard 2001:49).

The usewear and residue analysis suggests that the lithic rings were post-breakage used in processing plant and animal materials. However, ethnographic analogy, the prevalence of ochre and the use of haematite as a raw material, as well as the morphology, suggest that the rings also took on ritual functions (Lombard 2001:89-90). The prominency of ochre for secular and ritual purposes is, moreover, underscored by the presence of ochre on all of the 10 lithic rings used for the study on lithic rings, including four specimens from Goergap on the Waterberg Plateau (Lombard 2001).

5.3.3 Pigments during the contact phase: changing frequencies

I pointed out that the relatively high volumes of haematite recovered indicate rich sources within the immediate area, but also that the procurement and transport of the bulky and heavy haematite would have required intentional planning. It is feasible that the Waterberg hunter-gatherers scheduled journeys for the collection of pigments in a similar way that the Kua, Hai‖om and Ju/'hoansi plan expeditions to mongongo groves and other rich plant resources in the Kalahari (Marshall 1959; Valiente-Noailles 1993; Widlok 1999b). The archaeological data from OBP present a clear trend of less intensive utilization of the shelter during the more recent period. From the decreased frequencies established for all classes of material except ceramics, I suggest that episodic visits by small nuclear family groups account for this trend.

The following table illustrates the marked decrease in haematite from approximately level 4. These are the occupational deposits following on contact, which also contain the bulk of the ceramics and other exotics with dates of AD 408 and AD 529 for layers 3 and 4 respectively. Frequencies for all classes of material show this declining trend.

Relative frequencies of pigments												
	S	1	2	3	4	5	6	7	8	9	10	Total
Total	183	338	330	282	513	902	793	944	1109	1497	2583	9474
%	1.9	3.6	3.5	3.0	5.4	9.5	8.4	10.0	11.7	15.8	27.3	100.0
Mass (g)	660	928	1567	1276	2161	3782	3253	4798	5735	8648	11166	43974
%	1.5	2.1	3.6	2.9	4.9	8.6	7.4	10.9	13.0	19.7	25.4	100.0

Various interpretative explanations may be offered for these changes. Contact with farmers as evidenced by metal slag in pottery-bearing levels may relate to an increased demand for colouring materials or haematite ore for smelting. At Tsodilo the increasingly intensive exploitation of ore parallels the settlement of iron-using farmers in the area (Robbins *et al.* 1998:149). In the Kalahari some San groups controlled trade in ores, and in some cases even the mining of copper ore sources. Indigenous farming communities were required to obtain consent from the San before embarking on an expedition to mine metal ores (Gordon 1984:212-3). Copper-mining by Hai‖om around Otavi, from mines kept secret, delivered an estimated annual production of 50 to 60 tonnes (Guenther 1996a:69) The Hai‖om asserted absolute ownership over the mines and the location was kept secret. Copper ores and also salt cakes were exchanged with mainly Ovambo trading partners (Guenther 1996a:69). This is confirmed by archival documents on the mining of copper by Hai‖om (Widlok 1999b:119-20). The Hai‖om used to provide the raw materials in exchange for iron knives and axes. Transactions were generally indirect, but transpired in intensified interaction and exchange, and some adoption of blacksmithing traditions (Widlok 1999b:119). The pervasive presence of stone tools at most localities with evidence for extensive iron, but also copper, bronze, and rare tin mining, and secondary smelting activities at Rooiberg in the Waterberg District, suggests that the earlier hunter-gatherers were familiar with these rich mineral resources (Wagner 1926:899-900; Wagner & Gordon 1929:563-74; Natrass 1989:5-12; Van der Ryst 1998c:8:map 2.3, 100-2).

It is entirely feasible that the rich sources of iron ore in the Limpopo Lowlands would have been controlled by the autochthonous groups, at least during the initial symbiotic stages of interaction. In the northern Cape sources of specularite became the property of the Tswana chief [*kgosi*] who controlled access. Even his own people were permitted annual visits only after the harvest. A tax or payment was levied on strangers before allowing them to quarry

(Campbell 1822:(II)194). Burchell (1967:256) also commented on the extensive use of specularite for body and hair ornamentation by the Tswana, who called it *sebilo*, and on the trade or barter for this valuable commodity. At OBP decreases in the local consumption of haematite and rerouting of ore to African farmer villages may therefore account for a perceived decrease in quantities of haematite in levels relating to the late contact period. The extent of possible trade with indigenous farming communities cannot be determined. The control of ore resources by African farmers, or direct deliverance of the bulk of collected haematite at village settlements by hunter-gatherers, can explain markedly lower volumes of haematite at OBP. However, I also pointed out an overall diminishing trend in the utilization of the site as suggested by decreasing frequencies of all classes of material in the uppermost levels.

The possible role of indigenous farming communities in controlling important resources, such as iron ore in the Waterberg, is not explored as sources for haematite were not investigated. Changes in access to and the control of commodities especially required and valued by indigenous farming communities were unquestionably aspects of the later phases of interaction. The decreased utilization — for whatever reasons — probably resulted in corresponding changes in the collection of haematite within the Waterberg region. More research is required to assess the demographic changes that resulted from the movement of other ethnic groups into the Limpopo Basin. Current findings show that hunter-gatherers changed their scheduled routes and relocated to other yet unexplored places. The Waterberg hunters and gatherers did not completely abandon the area. Their presence on the landscape is confirmed by numerous historic accounts, which noted an enduring and extensive presence for hunter-gatherers within the Limpopo region (Baines 1872, 1877; Stech 1885; Schlömann 1896, 1898; Selous 1908; Dornan 1917, 1925; Marais 1920; Schwarz 1928; Kirby 1940; Chapman 1971). More extensive investigation of shelters within the broader Limpopo region should shed more light on strategies applied by hunting and gathering communities to cope with the presence of newcomers on the landscape. Residual groups were drawn into some of the economic activities introduced by indigenous farming communities, at least during the more recent past. This can be illustrated by an account of iron smelting, and the smithing skills of a hunter-gatherer residing near the Mogalakwena River. He demonstrated the smelting of iron, forged an iron hoe from the smelt, and also used a wire draw-plate (Marais 1920:3-5; Van der Ryst 1996, 1998b, 2003). Blacksmith work by the Hai‖om now forms part of their ethnic and social identity, and the products of their skills are highly valued by neighbouring farming

communities (Widlok 1999b:119-22). The Hai||om even have stories on how bellows were used for the first time to make body parts for the lion (Widlok 1999b:121).

5.4 CONCLUDING REMARKS

From the former discussion it is evident that pigments formed an integral part of the secular and ceremonial life of most prehistoric groups. A clear association of blood with both life and death is commonly used to explain the use of ochre in rituals (Stafford *et al.* 2003:85). Earth pigments, and in particular ochre, were universally used in ideological contexts from the earliest times up to the present, and also featured prominently in a diverse range of functional applications. It is, however, difficult to separate the symbolic and functional roles of ochre (Galanidou 1997:99). Pigments similarly form a significant element of the assemblage from OBP. The volumes of haematite recovered from the excavations suggest an incremental emphasis on the collection of pigments during the earlier occupation of the site. A marked decrease in the volumes of haematite during the last couple of hundred years corresponds with less intensive utilization of this locality as evidenced by low frequencies of lithics and organic artefacts.

The next chapter details the non-lithic remains from OBP. I discuss subsistence with reference to the faunal assemblage (Beukes 1997, 2001; Hutten 2006) and preserved plant fruiting structures (Sievers 2006) recovered from the area around fireplaces. In addition, utilization of a range of organics in the production of bone tools, and an exceptionally large sample of OES beads and decorated OES fragments, form the basis of the discussion in chapter 6. Artefacts from organic materials constituted a large component of the toolkit and household goods of hunter-gatherers, and a dry environment at OBP preserved and facilitated the recovery of several implements made on wood.

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THE NON-LITHICS: FAUNAL AND BOTANICAL REMAINS, EXOTICS AND ROCK ART SEQUENCE

> Archaeologists do not reconstruct the past, which is gone. Instead, we infer its nature from the material record that we directly observe in the present (Shott 1998:299).

6.1 INTRODUCTION

This chapter reviews the non-lithic remains from OBP, with particular reference to food waste, and archaeofaunal and botanical remains naturally constitute a basis for the reconstruction of past diets and nutrition. Of the Waterberg hunter-gatherers it was said that whereas fruit, berries and roots were collected, they preferred following the game in family groups through the lowlands of the bushveld (Schlömann 1898:66). Hunting is intimately connected to the reproductive, social and ritual life of hunter-gatherers (Wadley 1987:7; Biesele 1993:41-2). It carries an esteem commonly not afforded to their main, and much more reliable, subsistence base of gathering.

Food has many meanings and is of symbolic significance beyond economics (Reitz & Wing 1999:273-77). David Lewis-Williams (2002b:131) says that 'we note a blurring of a distinction between subsistence and religion. Can one be discussed without reference to the other? '. The composition of any assemblage is reliant on social practices, such as sharing and also beliefs and avoidances (Fourie 1965:25-7; Silberbauer 1965:47; Marshall 1976a:295-303; Tanaka 1976:112; Biesele 1993:80; Widlok 1999b:214-5; McNamee 2001:123-7; Sugawara 2001:80-97). Whereas organic substances would have been used extensively in the manufacture of tools, carrying containers, body and clothing ornaments, but especially foods, the high decomposition rate means that essentially an insignificant component is preserved in any assemblage.

The exotics of glass and metal beads, shells, and especially the varied (and interesting) pottery assemblage of five distinct ceramic expressions, were probably acquired from groups moving into the hunter-gatherer regions, including indigenous farming communities and perhaps herders, but also through long-distance gift exchange networks. Such intrusive elements may be applied to explore relationships with neighbouring communities and to reconstruct economic and social frameworks.

Interactive relationships with other societies at OBP extend to the rock art. Rock art is a product of intense religious experiences, and contains metaphors reflecting beliefs and ritualistic practices of the groups that produced these different art forms. The strong associations of San rock art with healing and the control of natural forces, make it a powerful medium for negotiating social relations and to secure mutually beneficial alliances with newcomers (Kopytoff 1987:16-7; Widlok 1999b:131).

Although the art will not be detailed, it is essential to the discussion of ceramics and social relations between autochthonous inhabitants and incoming groups. An investigation of the local rock art sequence can inform on the use and the appropriation of rock art shelters by African farmer (and possibly herder) populations, as well as the incipient marginalization of hunter-gatherers (Smith 1998; Hall & Smith 2000). I argued in chapter 3, where the locational setting of OBP is described, that the rock art was integral to experiences that give meaning to a place because it is 'part of a landscape and also that the landscape makes up part of the meaning of rock-art' (Lenssen-Erz 2004:132). I now expand on the data detailed in preceding chapters, which recognized the important role of this locality within the hunter-gatherer landscape, by discussing their use of an extensive range of non-lithic materials.

Note that the tables with data on the non-lithic component are included in Appendices F(UCA) and H to K

6.2 FAUNAL AND BOTANICAL REMAINS

Inherent differential preservation potentials and site formation processes make it virtually impossible to get even approximate spatial congruencies between stone and bone tools and waste products (Blankholm 1996:57). The recovery of doubtless a restricted range of what is mostly food waste severely restricts the reconstruction of subsistence economies. Consequently multiple strands of evidence have to be applied in the reconstruction of past diets and nutrition. Faunal remains constitute a particular important source of data on subsistence, behaviour and economies. Ethnoarchaeological and experimental data aid our understanding of processes affecting the formation of a faunal assemblage (Bartram *et al*. 1991:139; Wing & Reitz 1999:9-10, 23). Standard taphonomic factors, which impose constraints on and greatly alter the recovered assemblage, are removal of bone waste, post-occupational scavenging, the production of tools on bone, and also trampling (Yellen 1977:camp maps; Bartram *et al*. 1991:138-9; Kent 1993:339-41; Wing & Reitz 1999:110-41).

Natural and social variables impact on the formation of a particular faunal assemblage. Therefore not only ecological, taphonomic and economic factors, but also social behaviour as a determinant should be considered in an analysis (Odum 1971:11; Bartram *et al*. 1991:77-80; Yellen 1991b:154; Kent 1996:126, 1999:322-85). Meat is commonly consumed with kin sharing a hearth, which as a focal area should deliver discrete data on particular social practices. Whereas sharing increases the richness of recovered taxa, the practice is reflected mostly through small animal bones because large species are defleshed to reduce carrying weight (Yellen 1991b:154; Kent 1993:350-64, 369, 375, 1996:148-52, 1999:353, 366-7, 374-5; Mitchell *et al.* 2006:90; Parkington & Fisher 2006:71-80). Ethnographic data likewise demonstrate that sharing evens out differences in hunting skill, but it does not result in markedly more access to meat. These practices are accordingly infrequently reflected in MNI or NISP (Kent 1999:324-67; Reitz & Wing 1999:192-3; Widlok 1999b:180). Sharing is so fundamental to all societies that archaeozoologists are cautious about using MNI for quantification (Reitz & Wing 1999:272). Treatment and disposal of bone waste by the /Xam were based not only on cultural practices, but also revealed individual discard patterns (Bleek & Lloyd 1911:275, 279-83). Faunal remains give some indications of structured distribution and particular associations with lithic clusters. However, fireplaces and other discrete activity areas allow for inferences on behaviour. It is vital that all available contextual data are taken into consideration (Bartram *et al*. 1991:139; Carr 1991:221-56; Yvorra 2003:341).

In the past archaeobotanical analyses were less commonly undertaken due to constraints. These included the specialized training of archaeobotanists and a lack of comparative collections. I should point out at this stage of the discussion that the term archaeobotany refers to the art and science of recovering, identifying and interpreting plant remains from archaeological sites (Scott 2005:xiii). Palaeoethnobotany studies the interrelationships between humans and plants and is based on archaeologically recovered data (Scott 2005:xiii). This type of research is costly and labour intensive (Hather 1994:1-2; Hastorf 1999:56-7). The findings frequently disappoint because the fragile nature of botanical materials results in partial recovery, and even then, only macroscopic remains preserved largely through carbonization (Plug 1981:18, 21; Hather 1994:3; Hastorf 1999:55; Hansen 2001:401). However, plant preservation can be remarkable in dry caves, for example Melkhoutboom in the eastern Cape (Deacon 1976).Plant use is, accordingly, invariably likely to be inferred through circumstantial

evidence of digging sticks, bored stone weights, pestles and grindstones (Mitchell 1997:374). However, several of these implements are known to be multi-functional. For example, grindstones were used to process grass seeds, but also non-plant foods, such as locusts (Stow 1910:58); a food item also collected in the Waterberg (Baines 1877:65). At Sibudu Cave at ~60 ka grindstones were used to smash open bone — there is much crushed bone and the grindstones have residues of bone and other animal products (Wadley 2006 pers. comm.). Despite these drawbacks, archaeobotany has the potential to provide substantial input into broad archaeological issues and to inform on the prevailing vegetation for human use as aptly illustrated by the archaeobotanical research at Sibudu (Wadley 2004:167-73; Scott 2005b:1-4).

6.3 THE FAUNAL ASSEMBLAGE

The faunal sample was analysed according to standard internationally accepted methods (Beukes 2000:45-58). Frequency data are not provided for the listed OBP fauna as the details are not yet available. The identifiable and non-identifiable bone fragments number 46 955 with a mass of 44 792 grams. This does not take into account fauna from the test trench, where the first four layers delivered 2561 bone fragments (Scott & Lombard 2000). The unidentifiable 31 570 fragments constitute 67.2% of the total sample. Species level or animal size class could be determined from the 15 385 (32.8%) identifiable skeletal parts (NISP). The total number of 66 species excludes the fragments identified only to animal size categories and the tentative identification of some species (cf.) (Beukes 1997, 2001). Extreme bone fragmentation from butchery, marrow processing and tool manufacture is common in hunter-gatherer contexts. Both marrow extraction and the preparation of shaft elements for awls or bone points produce very similar effects on articular ends of cylindrical bones (Blankholm 1996:55- 6). Body parts, such as long bones (notably metapodials), are usually cracked for marrow during primary butchery, and limb bones of large and medium-large size are also preferred for the production of arrow segments and bone awls (Poggenpoel & Robertshaw 1981:32-3; Smith & Poggenpoel 1988:106; Bartram *et al.* 1991:103, 142; Kent 1993:335-8).

Territorial movement across different biomes and distinct hunting techniques probably account for the quite extensive range of solitary and herd species in the OBP assemblage. Megaherbivores include black rhino (*Diceros bicornis*), hippopotamus (*Hippopotamus amphibius*) (which is not surprisingly since these animals can still be found in the deep pools of the Mokolo), giraffe (*Giraffa cameleopardalis*) and plains zebra (*Equus quagga*). (See

Appendix J for a species list). Anticipated and planned hunting strategies (Blankholm 1996:38) dictate techniques used to procure prey. Giraffe and various large bovids in the OBP assemblage demonstrate specialized bow-and-arrow hunting, snare and pit trapping, and doubtless also meat robbing from carnivore kills, a practice that is still common (Marshall 1976a:127-8; Yellen 1977:148; Silberbauer 1981:49; Steyn 1984:121; Valiente-Noailles 1993:73; Hitchcock *et al.* 1996:218; Mitchell 2002:165; Wadley & Jacobs 2004:158). Narratives relating to the Waterberg mention the use of feathered sticks as decoys to guide game, and a lion killed in a poisoned trap (Marais 1964:2l, 27, 29). Snares, traps, pitfalls, and hunting with bows and clubs are reported for Botswana (Dornan 1917:45-6, 76, 79).

The Hietshware San across the Limpopo in Botswana used points permanently fixed to arrow shafts for large game (Dornan 1917:45). Contemporaneous accounts on the Waterberg hunter-gatherers (Schlömann 1898:66-70) confirm hunting of large animals, such as giraffe and eland. Contemporary hunters do not specialize in hunting any particular species, and also do not focus more exclusively on large or small animals (Kent 1993:349). They use opportunistic strategies so that whenever fresh spoor of big game is observed while out hunting, they will gladly continue to track it instead of smaller animals (Marshall 1960:331). It is, however, more likely for large animals to be hunted at band alliances because meat consumption and sharing are important in the social arrangements and intense ceremonial life that mark the public phase (Lee 1979:364-9; Kelly 1995:213-4; Guenther 1996a:80). The Hai‖om use the concept of *soxa* for meat of animals killed with bow and arrow. Sharing and consumption are subject to specific requirements and dietary prohibitions (Fourie 1928:24-6; Biesele 1993:91). Cooperative hunts as well as the use of the different hunting technologies are illustrated through rock art (Lewis-Williams & Dowson 1989).

Bovids, the major focus of hunting and trapping, dominate the OBP assemblage. Greater number of small to medium ungulates are not only accounted for by transport constraints, but also by butchering and capture technologies (Bartram *et al.* 1991:101; Yellen 1991a:1-26, 1991b:152-92; Blankholm 1996:48; Kent 1999:225). Most of the animals in the OBP assemblage appear to be adult at time of death. Antelope species range from Bov I to Bov IV. Large bovids are represented by browsers and grazers, such as buffalo (*Syncerus caffer)*, eland (*Tragelaphus oryx)*, both blue and black wildebeest (*Connochaetes taurinus* and *gnou*),

roan (*Hippotragus equinus*), waterbuck (*Kobus ellipsiprymnus*), kudu (*Tragelaphus strepsiceros*) and tsessebe (*Damaliscus lunatus*).

Some of the medium to smaller ungulates are impala (*Aepyceros melampus*), reedbuck *(Redunca arundinum)* and mountain reedbuck *(Redunca fulvorufula),* blesbok *(Damaliscus pygargus*), bushbuck (*Tragelaphus scriptus*), steenbok (*Raphicerus campestris*), klipspringer (*Oreotragus oreotragus*), grey duiker (*Sylvicapra grimmia*) and Sharpe's grysbok *(Raphicerus sharpei).* Although the recognized diversity of hunting technologies is unlikely to ever be reflected in tool remains, the use of distinctive techniques can be inferred from a faunal assemblage (Reitz & Wing 1999:262). Duiker and steenbok are of particular dietary importance and, being solitary, they are obtained through trapping with snares, and also in fortuitous encounters: immature animals are notably easy to kill (Yellen & Lee 1976:37; Silberbauer 1981:214-5; Estes 1991:40-62; Yellen 1991a:10-4, Kent 1996:126-30). Trapping equipment is primarily made from perishable plant materials and is archaeologically invisible. Placement positions and cordage strengths vary according to types of snares and traps set, and are subject to the habits of targeted species (Schultze 1907:667; Dornan 1917:46; Silberbauer 1965:60-1; Valiente-Noailles 1993:67-8; Holliday 1998:711, 717; Liebenberg 2001:59-60).

Trapped game and small to very small animals the size of hares are generally consumed in family contexts and, although not as prominent in sharing, they may be used to maintain the social sharing bond (Marshall 1960:334, 1976a:357; Silberbauer 1981:235; Kent 1999:352; Widlok 1999b:151). A reliance on small animals obtained through such means, differences in butchering or consumption practices, as well as transporting both small and large animals remains, can influence faunal recovery (Yellen 1991a:1-26,1991b:152-92; Kent 1999:324, 335-9). Several of the types of captured animals from OBP provided both food and pelts. Predators and scavengers are generally not eaten, whereas some fur-bearing animals are often avoided because of personal distaste, and others are readily consumed (Marshall Thomas 1959:167; Marshall 1976a:127, 413; Tanaka 1976:119; Hitchcock *et al.* 1996:164-8). Furs were used for clothing, particularly karosses and headdresses, but also in direct exchange (barter), and as tribute items in the Waterberg during the later stages of contact (Schlömann 1898:66; Schultze 1907:641; Stow 1910:73; Schapera 1930:158; Silberbauer 1981:217; Morton 1994:224-5; Smith & Lee 1997:55-7; Van der Ryst 1998a:62).

Some of the major food animals at OBP are warthogs (*Phacochoerus africanus*], bushpig (*Potamochoerus larvatus*), porcupine (*Hystrix africaeaustralis*) and springhare (*Pedetes capensis*). Other taxa include antbear (*Orycteropus afer*), greater cane rat (*Thryonomys swinderianus*) and vlei rat (*Otomys* sp.), spotted hyaena (*Crocuta crocuta*), aardwolf (*Proteles cristatus*), chacma baboon (*Papio ursinus*), badger (*Mellivora capensis*) and hedgehog (*Erinaceus frontalis*). There are significant numbers of dassie (*Procavia capensis*), in addition to other fur-bearing mammals, such as Jameson's red rock rabbit (*Pronolagus randensis*), caracal (*Felis caracal*), serval (*Felis serval*), black-backed jackal (*Canis mesomelas*), Cape fox (*Vulpes chama*), civet (*Civettictis civetta*), African wild cat (*Felis lybica*), slender and banded mongoose (*Galerella sanguinea*, *Mungos mungo*), tree squirrel (*Paraxerus cepapi)*, bushveld gerbil (*Tatera leucogaster*), and indeterminate small to medium carnivore species. Meat from squirrel and mongoose is considered to be very tasty (Steyn 1984:121). Some groups favoured mongoose skin satchels for carrying arrow poison (Stow 1910:73). The fat from jackal is much appreciated by the G/wi and //Gana (Sugawara 2001:66).

Tortoise fragments (*Geochelone pardalis*) are particularly numerous and include substantial numbers of juveniles. The fragile nature of some important food species commonly results in under-representation. At OBP, good local preservation conditions allowed the recovery of some elements of birds, reptiles, fishes and molluscan shells. The entire avifauna sample consists of ostrich (*Struthio camelus),* francolin (*Francolinus* sp.), hornbill (*Tockus* sp.) and some small to medium-large birds, including raptors. Birds are trapped by different methods near their nests and feeding grounds (Dornan 1917:46; Liebenberg 2001:59). Some of the reptile remains of small lizards and bullfrog can be intrusive, however the monitor lizard (*Varanus* sp.) is enjoyed as food (Dornan 1925:114-5; Marshall Thomas 1959:167; Widlok 1999b:214). Lizard-like images are common in the Waterberg paintings (the fat was used medicinally and also in iron smithing (Marais 1920:5, 1964:16).

Faunal elements may constitute the only evidence for fishing because the techniques and equipment make this activity difficult to detect (Rigaud & Simek 1991:259). Freshwater fishes can be obtained with nets, hand-held spears and bone harpoons, weirs, stone-built traps fitted with funnel-shaped baskets, basket traps placed in reeds along the river bank, or alternatively by a line of people holding baskets to trap shoals driven into shallows, and various plant substances are, besides, placed in pools or slow-flowing water to stun fish (Campbell

1822(1):52; Stow 1910:72, 92-3; Dornan 1925:106-9; Schapera 1930:137-8; Toerien 1955:13; Vinnicombe 1961:114-5; Fox & Norwood Young 1982:261; Hall 1990; Barnard 1992:81; Guenther 1996a:68; Ouzman 1997b:225-55; Van Wyk & Gericke 2000:237-8; Mitchell 2002:164-5, 170; Mitchell *et al.* 2006:81-94). At OBP fish bones in the deposit argue for the likely use of nets, traps, line-fishing or fish poison.

Domestic animal remains are rare and represent only adult specimens of *Bos taurus* and *Ovis/Capra* in more recent occupation levels. The fragmented remains, which are common in LSA assemblages, are only identifiable as sheep–size medium bovids, or ovicaprids. The low visibility of goat skeletal elements in archaeofaunal assemblages presumably signifies altogether low numbers of goats, at least during the early part of the last 2000 years (Plug 1996).

6. 3.1 Taphonomy

Preliminary butchering of large game may take place at the kill site whereas small animals are usually transported to camp where they are cut up (Bartram *et al.* 1991:142; Keeley 1991:259; Hitchcock *et al.* 1996:171; Kent 1999:334-5). In the Waterberg a temporary camp was said to be constructed at a giraffe or eland kill until all the meat was consumed (Schlömann 1898:66-70). Whereas men normally slaughter game, a hunter may on occasion ask his wife to butcher trapped, or hunted, prey, and women process the small animals they collect (Kent 1993:338-9, 1999:338).

Both biotic and abiotic post-depositional processes affect the recovery of fauna (Reitz & Wing 1999:110-3). At OBP percolating water (see also chapter 3) produced accretions on bone from the middle section of the site, blanketing morphology and taphonomy of faunal elements and inhibiting recovery, identification and detection of modifications. Disarticulation and secondary processing are mainly reflected by cut and chop marks on approximately 100 long bone specimens. Burning likewise transforms bone and affects preservation. Controlled studies show that unburnt bone does not survive readily, particularly in open contexts (Yellen 1991b:182-3). Greater heat and complete oxidation of black carbon cause shrinkage and leave only the brittle mineral component and calcined bone (Reitz & Wing 1999:133). A large part of the OBP sample was burnt at different heat intensities. From the generally fragmentary nature of the assemblage only a few bone elements were sufficiently well

preserved to allow sex determination. The buffalo element is from a male specimen, which is a notoriously aggressive quarry. Non-formal bone tools are mostly on flakes of long bones or ribs and expediently used before discard.

Microfauna and smaller burrowing creatures, such as mice, shrews and rats, were doubtless intrusive over time, as also documented during the excavations (see chapter 3). Possibly fresh intrusions into the deposit include frogs, rodents, porcupine remains, dung beetles, *Achatina* land snails, canids and small mammals (Beukes 2001).

Several isolated chunks of termitaria were recovered. The chunks are clearly not remains of termite activity within the deposit because the hard red chunks occurred within an ashy matrix. Although insects form an integral part of hunter-gatherer diet, utilization is seldom reflected in archaeological remains. Rare occurrences include the recovery of parts of cakes containing the hard exoskeletons of ants or termites from the western Cape (Parkington & Poggenpoel 1971:25). Termite collecting formed part of early hominin diets, as conclusively shown by a study of wear patterns on bone tools similar to pieces from recent contexts (Backwell & d'Errico 2001:1358-63; d'Errico *et al.* 2001:71-5).

Ethnographic data report the collection of locusts, caterpillars, antlion larvae, edible ants, and large-scale harvesting of termite alates on nuptial flights after rains (Baines 1877:65; Stow 1910:4-5; Marshall Thomas 1959:95; Silberbauer 1965:30, 1981:216-7; Marshall 1976a:128-9, 380; Hitchcock *et al.* 1996:167; Widlok 1999b:79, 88, 94; Mguni 2005:42). The crunchy, fatty termites are highly esteemed and termite mounds, like honey trees, are subject to individual ownership (Stow 1910:55, 58-9, 356; Marshall 1960:336, 1976a:129, 311; Dunn 1978:54; Silberbauer 1981:76, 223; Widlok 1999b:89, 94, 223-4). The eggs of ant larvae are sifted out on closely woven grass mats (Stow 1910:58-9; Bleek & Lloyd 1911:207-11; Fourie 1928:102; Schapera 1930:144). Not only does a respect word for flying termites mean luck (Biesele 1993:24), but luck is metaphorically summoned by pressing a termite against various parts of the face (Widlok 1999b:223-4). This food group features in narratives (Bleek & Lloyd 1911:85), rock art (Mguni 2005:34-44), and Canopus is the ant rice-star (Bleek & Lloyd 1911:339-41; Stow 1910:20; Bank 2006:191-2). In Dorothea Bleek's 1929 *Bushman Folklore* the moon (p. 306), and especially this star (p. 307), are entreated for this much relished food: 'O Star-body coming there, Let me dig out ants' food With this stick...' (Schapera 1930:173).

6.3.2 Modified and processed specimens

The following discussion focuses on a selection of faunal remains of singular interest in being either modified, noticeably abundant, or beliefs held by hunter-gatherers on features and behaviours of animals. Several baboon elements were noticeable, of which the remains of one individual may be intrusive (Beukes 1997, 2001). Squares against the talus yielded mainly baboon teeth, including a perforated pendant (see Appendix N) on an upper canine similar to other animal tooth pendants (Dornan 1917:46; Wadley 1987:70, 251; Mason 1988:73-5). The use of tooth pendants with holes drilled through the root section is common to many cultures worldwide and of much antiquity (Reitz & Wing 1999:136). Baboon hair was also used for making charms because baboons were perceived to be immune to sickness (Bleek 1931:169; Hollmann 2005:8). Baboons also feature extensively in narratives and some dances (Stow 1910:117; Bleek & Lloyd 1911:17-36; Solomon 1998:274; James 2001:50, 63, 168-70; McNamee 2001:23-7, 116-7). They are perceived to be ambiguous and tricksters. Baboons are, in addition, linked to an earlier race and therefore imitate humans, talk like them, make similar clouds when they die, have powers like shamans and often carry the potent and much esteemed scented root (*so-/ŏä)* in their cheek pouches. Their potentially dangerous power necessitates preventive behaviour (Bleek & Lloyd 1911:76; Bleek 1931:167-79; Marais 1964:25-6; Silberbauer 1981:64; Lewis-Williams & Dowson 1989:134-5; Guenther 1994:74-5, 79; Hollmann 2005:6-28). *So-/ŏä* has been tentatively identified to be the woody rootstock of *Galium tomentosum* (Hollmann 2005:278). Some *Galium* spp. are used for a preparation administered to persons with imaginative diseases and hysteria, and also feature in rituals performed by witchdoctors (Laydevant 1932:67; Watt & Breyer-Brandwijk 1962:150, 898).

Tortoises are ubiquitous in most LSA faunal assemblages. The leopard tortoise (*Geochelone pardalis*) is prominent at OBP. These tortoises are typical of the savanna biome, and a great favourite, which are easily collected (Yellen & Lee 1976:41; Silberbauer 1981:216). There is also some marsh terrapin *(Pelomedusa subrufa*). Tortoise shells are eminently suitable to function as containers (Reitz & Wing 1999:136). At OBP several tortoise scutes and carapace skeletal elements with smooth worn edges reflect use as containers. Tortoiseshell vessels feature in both domestic and ritual contexts among hunting and gathering groups. Men are said to make the vessels (Marshall 1976a:77, 414). Small tortoiseshells serve as drinking bowls and the larger ones as dishes and assorted vessels, such as ash and water scoops (Schultze

1907:672; Stow 1910:68; Schapera 1930:67; Parkington & Poggenpoel 1971:13; Marshall 1976a:85; Dunn 1978:56; Valiente-Noailles 1993:172, 205; Lewis-Williams 2000:179, 203). Tortoiseshell bowls (and broken OES flasks) are also convenient for collecting and processing plant and animal and animal for arrow adhesives, or for any other poisonous substances (Bleek & Lloyd 1911:363; Schapera 1925:202-5).

The abundant juvenile tortoise specimens at OBP suggest that some were probably used as containers for aromatic herbs, which is a widespread and common practice. They are used as medicinal and cosmetic holders, often decorated with OES and more recently also glass beads, and carried by most women and also healers (Stow 1910:45; Schapera 1930:67; Marshall 1961:fig. 18, 1976a:316, 1976b:355; Silberbauer 1965:50; Valiente-Noailles 1993:204; Lebzelter 1996:84). Juveniles and smaller tortoise types are selected for holding medicines or sweet-smelling herbs, such as buchu *(Agathosma* spp.), of which approximately 140 species have been identified. Buchu is enjoyed and used by most societies for its enduring fragrance and healing properties, now globally recognized in the use of the valuable essential oils of *Agathosma ovata* as ingredients for some Lauder perfumes (Cunningham & Davis 1997:492; Snijman 2001:67, 88; Brown 2005:117). The substance also features extensively in rituals and narratives due to its psychosomatic healing powers and calming effect (Bleek & Lloyd 1911:17, 195-7; Bleek 1933a:300; Bleek 1935:23; Hoff 1997:31; Hollmann 2005:77, 177-8, 204, 237). Highly aromatic herbs and natural incenses were used throughout time by virtually all societies during formalised ceremonial behaviour. The volatile oils released through crushing and burning (note, for instance, Bleek & Lloyd 1911:197) are believed to aid the crossing of brain barriers, and also still and open up the mind so that participants are more receptive to spiritual influences (Dugmore 2006:quoting Van Wyk, B-E). During trance-curing the power of the tortoise helps to develop *n/om*, and smoke from herbs in the shell 'sends you to the animals' (Biesele 1993:93-4).

Buchu is one of several plant species with medicinal properties and symbolic significance. Because this substance is believed to have calming effects and potency it can help to bridge the different worlds as perceived by hunter-gatherers, and it features extensively in ritualistic behaviour (Bleek & Lloyd 1911:117, 195-7; Schapera 1930:165, 168; Marshall 1976:120; Silberbauer 1981:105, 1996:33, 52; Katz 1982:39, 51; Cunningham & Davis 1997:488; Hoff 1997:26, 31; Widlok 1999b:90; Lewis-Williams & Pearce 2004:58). Tortoiseshell vessels and

buchu are virtually synonymous in ritual contexts. Graves were dug with terrapin shells, and buchu from tortoiseshell vessels sprinkled onto bodies at burials (Wadley 1996a:281, 1997b:122). In narratives live tortoises are performers with magic powers and their shells often serve as holding vessels for buchu to induce trance in these tales (Bleek & Lloyd 1911:371-4; Marshall1962:232; Marais 1964:21-4; Biesele 1976:320, 1993:103-5, 109; Valiente-Noailles 1993:123-4,144-5). In curing a healer adds a burning ember to buchu, eland fat and various other ingredients in a shell. The patient inhales the fumes, and the contents are often afterwards rubbed onto the skin (Katz 1982:39, 51, 152-3; Biesele 1993:93-4, 105; Valiente-Noailles 1993:172, 204). In a Waterberg story it is said a man should rub buchu on the arms of his bride (Marais 1964:23-4) and in a Korana narrative that it should be applied under the armpits as a form of greeting (Marais 1964:13, 31).

The tortoise, said to be one of the animals painted by the Hietshware (Dornan 1917:43), is depicted in some of the more recent engravings from Botswana, and also on engraved OES containers (Hoffman & Baard 1969:244 fig. 3; Litherland *et* al. 1975:19-28. Walker 1998b:211; Van der Ryst *et al.* 2004:4). Paintings of rainmaking as documented by Orpen, and interpreted by a /Xam informant, show medicine men with 'boxes made of tortoise *(!khu)* shell (containing charmed boochoo) from which strings, perhaps ornamented with beads, are dangling down' (Lewis-Williams & Pearce 2004:140). The tortoise often partners trickster figures in activities connected with trancing and rain (Biesele 1993:109). As one of the rain's animals it is a food to be avoided by young girls and bachelors (Bleek 1933a:303; Tanaka 1976:112; Sugawara 2001:80). Many animals are gendered and in narratives tortoises are metaphorically linked to women, who principally collect them when they are out gathering plant foods. Similar connotations doubtless derive from their more rounded shape, and in a certain game women simulate the sexual display of tortoises (Solomon 1989:54-5). Tortoises are also characters in games of young boys (Marshall 1976a:350).

Apart from containers, the shells and individual elements have many other uses. At OBP and Kruger Cave perforated pendants made on tortoise plates were recovered (Mason 1962:321, 1988:88, 90). The expedient and interrelated use of objects is yet again demonstrated in the use of a plastron side of a tortoise as an anvil for drilling holes in OES roughouts (Mason 1988:216, photo 94). The shells are also fixed as sounding boxes on musical instruments (Stow 1910:109; Dornan 1925:137).

Two modified metacarpals heavily stained with red ochre and in association with a cowrie shell were recovered from levels dating to approximately AD 350 (see Appendix N). These ochre-stained cannon bones are similar to others in LSA, and also IA, contexts (Maggs 1976:264; Van Waarden 1987:120; Mason 1988:89-90, 110). Whereas similar objects with perforations were doubtless pendants, the Kruger Cave specimen could have been used as a pestle as suggested by glittering ochre residues on the abraded terminals (Mason 1988:229). The OBP specimens are similarly ochre-stained.

6.3.3 Bone tools: arrows

Worldwide, the invention of the bow and arrow as a specialized hunting technique was of prime importance being effective on a range of animals, and in extreme and diverse habitats (Liebenberg 2001:19). The advanced tracking abilities and knowledge of animal ethology required in LSA hunting strategies doubtless evolved through the need to understand and anticipate the behaviour and movement patterns of animals wounded by poisoned arrows (Dornan 1917:45; Marais 1920:5; Jones & Konner 1976:325-48; Silberbauer 1981:65-6; Shepard 1998:293; Liebenberg 2001:29-56; Sugawara 2001:68; Hildebrand & McGuire 2002:231-56). Arrows carry style and metaphorical meaning, feature in rock art and stories, are important in social relations as items of gift exchange and in the establishment or observance of social obligations through meat distribution, and also operate symbolically in curing (Katz 1976, 1982; Marshall 1976a, 1976b; Wiessner 1983; Wadley 1986a, 1987; Deacon 1992; Biesele 1993; Katz *et al.* 1997; Eastwood 1999; Odell 2001). Underlying social and spiritual beliefs relating to hunting success are illustrated in an event where arrows were smoked with buchu in purification ceremonies after an unsuccessful hunt following on a friend's death (Bleek 1932:248; Hollmann 2005:89-90). Biesele (1993:200) emphasizes the metaphorical underpinnings of not only social, but also material technology, and says that hunting rituals strengthen social relationships.

Hunting, and the subsequent tracking of animals wounded with poisoned arrows, require specific behaviour and avoidances articulating the world view of hunter-gatherers (Deacon 1992:12-4). Hunting is, similar to most activities including the collection and processing of plant and other foods, permeated with ritual, beliefs and symbolic values that can influence luck or cause ill fortune (Bleek & Lloyd 1911:98, 365; Bleek 1932:233-250; Cornell 1986:232-3; Deacon 1992:12- 4; Widlok 1999b:223-4; Sugawara 2001:68-71). The intangible concepts of

luck and power, such as *n!ao* and *n/om,* have profound influences on individuals (see also chapter 2) and impact on spiritual and ordinary aspects of the lives of hunter-gatherers, including the weather and control of animals. Some large animals are invested with similar qualities (Fourie 1928:102; Marshall 1957:232-40; Marshall Thomas 1959:161-2; Katz 1982:93-4; Wadley 1987:7; Barnard 1992:58-9; Biesele 1993:106-9; Guenther 1999:180-4; Peters 2000:13-39; James 2001:190-3; Hollmann 2005:165). Names for these qualities differ, and among the Ju/'hoansi the concept of *n/om* refers to the central supernatural energy of all living beings, and can be controlled by healers as a healing force. In commenting on the rock art imagery of the Limpopo Basin, Peters (2000:37) says that *n!ao* 'refers to that *n/om* found in all living things and to the spiritual interaction of a living creature's *n/om* with the *n/om* of other creatures and the surrounding environment'. It cannot be regulated, but good *n!ao* is indirectly maintained through laws, avoidance practices and an awareness of relations between creatures and the surrounding environment. Liebenberg (2001:69-91) argues that hunting and tracking is a highly elaborate scientific process. It requires exceptional mental qualities, beliefs and rituals, which are so fundamental that they cannot be separated from the process of hunting and tracking, and contribute to hunting success (Liebenberg 2001:93-8).

Arrow points and link shafts, together with needles and awls, represent a major part of the polished bone component of the assemblage (see also Mason 1962:317-18, 1988:110, 123, figs 53-4). Successive stages of shaping the bone leave no original surface and prevent identification of preferred species and specific bone elements. However, a series of different production stages permits reconstruction of the production technology (Reitz & Wing 1999:136). In the Matopos a well-preserved bone industry is remarkably similar to that of OBP (Robinson & Cooke 1950; Cooke 1963, 1980; Walker 1980, 1995b). The Matopos specimens, and also unfinished bone implements from both OBP, Kruger Cave and other LSA sites, demonstrate an almost identical basic manufacturing technique. The selected bone part is split and a splinter cut to the required length. The cutoff section is flaked and shaved to remove angles and then deeply notched. It is then shaped by rotation abrasion, evidenced by fine diagonal striations, to produce a cylindrical reduction of the bone before being snapped off, and finally polished (Robinson & Cooke 1950:108-11; Parkington & Poggenpoel 1971:12; Smith & Poggenpoel 1988:106-7; Walker 1995b:164; Wadley 2000b:95). Recent stone-working groups used a quartz flake in the final polishing (MacCalman & Grobbelaar 1965:18, Plate15:39; Smith 1998:207), analogous to a rough piece of calcrete applied in shaping OES

beads (Mason 1988:219, photo 97). The many grooved stones from LSA deposits in Zimbabwe, Gauteng and the study area, were doubtless used in the manufacture of both arrowheads and linkshafts.

Arrow-making is the single most common activity undertaken in the maintenance and production of equipment (Silberbauer 1965:50, 54-8; Bartram *et al.* 1991:69). It is frequently centred around an individual hearth where several men may gather to make arrows, so that debris is mixed with household waste (Yellen 1977:91, 95, 145). The bone shafts of large animals used in arrow-making include giraffe and gemsbok. Contemporary San groups in the Kalahari prefer horn cores of gemsbok because the bones of most small (and even larger ones, such as wildebeest) are too fragile to penetrate hides (Marshall Thomas 1959:92; Silberbauer 1965:55; Yellen 1977:137, 139). Ostrich or kudu shinbone is also suitable (Fourie 1928:103; Schapera 1930:144; Valiente-Noailles 1993:64). The bone is worked fresh or moistened because dry bone is inclined to shatter (Marshall Thomas 1959:92-3; Silberbauer 1965:55; Smith & Poggenpoel 1988:106).

An arrow consists of four parts, which include the projectile bone/stone/metal head, reed sleeve, bone/wood linkshaft, and main wooden/reed/grass shaft (Schapera 1925:207-8; Dunn 1931:106; Marshall 1976a:146-7; Liebenberg 2001:56). Only arrow points and linkshafts are normally recovered from archaeological contexts. It is not always possible to distinguish between points and linkshafts on broken specimens (Smith & Poggenpoel 1988:110-1). A bone arrow has a pointed distal end, whereas linkshafts are usually thicker and taper at both ends. Wiessner (1983:265) found that more uniform and symmetrical arrows were made by people with more skill, and that individuals in making a new set try to make them alike although variations were not considered important.

Different types of arrows are illustrated in the rock art imagery of the Waterberg (Laue 2000). At least two differently named types of arrows are described in the Bleek documents (Bleek & Lloyd 1911:419, 427). Five types were observed among San in the Kalahari (Marshall 1976a:146-7; Valiente-Noailles 1993:64). Wooden arrow sections similar to those recovered from the initial OBP investigations, and also porcupine quills, may be substituted (Dornan 1917:45; Mason 1962:317-8, 1988:362-3; Marshall 1976a:414; Silberbauer 1981:358; Valiente-Noailles 1993:64). According to some accounts bone and agate arrows were preferred

because poison was less effective on iron barbs (Cornell 1986:233). Small horns served not only as containers for arrows (especially in the rainy season), but also for the safekeeping of poison extracts from plants, such as *Acokanthera* and *Euphorbia,* said to be used within the general Limpopo area (Dornan 1917:45; Schapera 1925:201, 1930:144; Fourie 1928:103; Marshall 1976a:413).

Arrows are acquired in different ways. Each man can make his own, obtain some as gifts, or borrow and lend them (Silberbauer 1965:56; Marshall 1976b:358; Wiessner 1983:262, 268-9). Arrows may also belong to women (Marshall 1976b:366). The status of the arrow responsible for the kill is accordingly reflected in the distribution of the meat (Bleek & Lloyd 1911:361, 363; Marshall 1976a:145, 1976b:358-59; Wiessner 1983:253-76; Deacon & Deacon 1999:158). The exchange of arrows allows any member of the band to own the hunted animal. I pointed out previously that the owner of the arrow used in killing an animal also distributed the meat. Marshall suggested that the role of the hunter is minimised through such a practice, and that ritual sharing is conversely emphasized (Biesele 1993:91).

The marking of arrows to sign ownership was referred to earlier in chapter 4. It is customary for all manufactured goods to be individually owned (Marshall 1976a:188; Silberbauer 1981:235). Body shape and barbs are singled out as the most important criteria for individual identification (Wiessner 1983:262). Arrows as carriers of style express personal and social identity (Wiessner 1983:269). Only one of the many bone arrows from OBP is decorated with very fine geometric incisions (see Appendix N). There is also a highly polished, relatively short, cylindrical section. Decorated arrow sections from archaeological contexts and museum collections have mainly geometric motifs (Wadley 1987:249, 2000b:98; Deacon 1992:8; Van Doornum 2005:135). Ethnographic specimens of linkshafts were decorated with circles, short parallel lines and v-shapes (Wiessner 1983:69). Mason (1962:321) suggested that the geometric designs on arrow components and OES fragments may be cognitively linked to hallucinatory experiences, rock art and positive hunting power (Mason 1988:362, 362b).

6.3.4 Bone tools: awls and matting needles

The characteristic toughness and resilience of bone accounts for its widespread use for punches, handles and in particular, piercing tools. Bone elements, such as metapodia or artiodactyls, are eminently suitable for long straight tools and are readily modified by splitting

and sharpening (Reitz & Wing 1991:136). Awls are often more numerous than arrow sections at LSA sites (Smith & Poggenpoel 1988:108-10). Bone needles and awls, as tools with evident emphasis on a sharp distal point, were predominantly used in the perforation of tanned leather to be sewn into skin clothing and different types of carrying bags, and presumably also in the making of reed matting. Men mostly use awls in sewing leather articles, because hides are products of the hunt (Schapera 1930:144, Plate XI; Marshall 1976a:86-7, 102, 413; Wadley 1987:6; Valiente-Noailles 1993:59). Awls of different sizes made on ostrich and other bone were carried, which suggest differential use (Stow 1910:73). The more slender awls are suitable for making loincloths and aprons from the thin supple skins of steenbok, duiker or springbok, and the more robust awls are used on thicker and harder hides (Silberbauer 1981:225-6; Valiente-Noailles 1993:59-60). However, no specific use can be ascribed to archaeological specimens.

The much valued awls were sometimes made from the leg bone of an ostrich (Stow 1910:73), and ethnographic examples are alike to archaeological specimens (Schapera 1930:Plate XI). Whereas thin wire is nowadays preferred, bone slivers are readily used when the former is not available (Silberbauer 1981:231). Wire awls are carried in wooden tubes with pyrographic designs (Silberbauer 1981:226-7, 231; Valiente-Noailles 1993:60). Awls are also used by women in making personal ornaments, such as leather headbands and clothing for smaller children, and in the production of OES beads (Marshall 1976a:415; Valiente-Noailles 1993:84-5). A delightful story centred on an awl borrowed by a guineafowl from a goshawk and then lost again demonstrates the role of performances in the transference of socio-economic values and knowledge (Sugawara 2001:77, 92-3).

Numerous slender needle-like awls were recovered from OBP. The worked bone sample of 245 bone needles/points and linkshafts from Goergap on the Waterberg Plateau clearly illustrates preferred use of bone for these tool types because they remained in use despite exposure to IA technologies. The statistics on the OBP worked bone are not available since the analysis is pending. Matting needles from Botswana shelters have flat bone shafts with points rounded from use (Walker 1994:5). Reed mats were more common in the coastal and interior region of the Cape, but there is practically no data on the production of mats to thenorth. Whereas reed mats were occasionally used (Dornan 1917:46; Schapera 1930:144), it is said that hunter-gatherers themselves do not make mats (Marshall 1961:242). Small reed

mats for sifting ash from roasted foods and to separate soil from collected ant larvae and eggs are sometimes used (Stow 1910:59; Fourie 1928:102; Schapera 1930:144; Parkington & Poggenpoel 1971:18). Reeds are fragile, and seldom preserve. At OBP one fragment was recovered. It shows a smooth inner surface with no compartments, or internodes, so that no definitive statement can be made about the fragment (Sievers 2006:e-comm).

6.3.5 Miscellaneous bone implements

A small sample of mostly spatulate bone sections was recovered from OBP. Spatulate bone tools from archaeological contexts (Robinson & Cooke 1950:110; Mason 1962:317-20, 1988:67; Deacon 1976:50-1,134) are equivalent to wooden and bone spatulas commonly used in the preparation and fixing of arrow poison (Stow 1910:79; Schapera 1925:202-3; Fourie 1965:24). Spatula-like tsamma knives (often made on gemsbok or ostrich ribs and tibia) were (and still are) widely used (MacCrone 1937:251-2; Goodwin 1953:30, 138; Steyn 1984:120; Cornell 1986:291; Kinahan 1991:97-8; Kent 1993:333-5, fig. 3; Kinahan, Jill 2000:45). Among the /Xam similar tools on rib bones featured as eating implements and to smooth the outer body of clay vessels (Bleek & Lloyd 1911:345, 349,419, 427). Spatulate implements as well as scrapers from cranial elements were employed in the processing of hides (Kent 1993:333-6, fig. 2). Bone mortars from larger game, such as giraffe and also ostrich, were used in the processing of substances (Schapera 1925:205). The invariably broken tools from OBP are remarkably similar to those from the Waterberg Plateau (Van der Ryst 1998a).

6.3.6 Ostrich eggshell

The ostrich is integral in creation narratives and it is assigned human characteristics (Biesele 1993:116-21, 124-7). Narrations provide a vehicle for the transfer of information and recurring themes or objects demonstrate concerns with particular issues so it is not surprising that the ostrich and its derived products are central to many narratives, performances and also games (Bleek & Lloyd 1911:127-37, 137-45; Marshall Thomas 1959:73; Marshall 1976a:349-50; Barnard 1988:187; Biesele 1993: 27-31, 107, 121, 135; Valiente-Noailles 1993:38-42; Widlok 1999b:52-4; James 2001:78-9; McNamee 2001:33-5; Olivier 2001:14). OES is gendered with primarily female associations, as also portrayed in a symbolic quest for fire and the role of hearths (Solomon 1989:62; Guenther 1999:152-60).

The spiritual potency of OES is transferred to commodities produced on the raw material (Wadley 1987:12; Valiente-Noailles 1993:38). Beads, with their innate potency, are integral to rites of passage and are used as grave goods. Extra beadwork is also put on for curing dances (Marshall 1976a:309; Katz 1982:39-40; Wadley 1987:11-5,1996:283, 1997b:123; Lewis-Williams & Pearce 2004:59, 88). The origin of beadmaking is ascribed to the primal gemsbok people who used their sharp-pointed horns for piercing beads worn in strings around their necks. The hunter must take care when hunting gemsbok not to shoot one of the gemsbok people, because he himself shall then fall ill and die (Marshall Thomas 1959:146-7; Biesele 1993:93-4).

Beadworking, although labour-intensive, is an activity much enjoyed. It is often undertaken during extended visits when people gather around the fire to gossip and tell stories so that the completed items are valued even more for the context in which they were created (Yellen 1977:91; Wadley 1987:15). OES beads are consequently favoured and prominent in alliance-forming gift exchange, and also for trade, and they are exchanged and bartered across ethnic boundaries between different San and indigenous farming communities (Fourie 1928:103; Schapera 1930:146-7; Marshall 1961:242, 1976a:304-6, 1976b:364-5; Heinz 1966:12; Silberbauer 1981:227; Wadley 1987:15; Wiessner 1992:213-4). Lorna Marshall (1961:242) says that '[t]he most highly valued gifts are the traditional ornaments of ostrich egg-shell beads, especially the wide headbands and necklaces of five or six strings ...' The creamy white is becoming to them'. Women make the OES beads to be used for ornaments and to decorate the clothing, bags and pouches made by men (Marshall Thomas 1959:photo 15a; Silberbauer 1981:227). Beaded triangular head ornaments are associated with women, and rectangular ones are said to be male. Hide of the animal killed for a bride is used to make skin armlets ornamented with beads (Marshall 1961:fig. 18, fig. 20). When a cherished article disintegrates, the beads are restrung, and beads are in addition inherited (Heinz 1966:31; Silberbauer 1981:227; Wadley 1987:8,1997b:121).

OES fragments as byproducts of bead production may be discarded in special activity shade areas, but they are more likely to be deposited around the family fireplace when women and girls gather to make beads (Yellen 1977:91, 96). Various stages of the production process result in discarded fragments, roughouts, broken and complete beads (Arbousset & Daumas 1968:247; Yellen 1977:140). Grooved stones (see also chapter 4), stone and possibly bone

anvils featured in the production of beads, similar to the observed use of a tortoise carapace (Marshall 1961:fig. 5, 1976a:305; Wadley 1987:251-2; Mason 1988:216, photo 94). Whereas beads were recovered from all areas within the excavated space at OBP, there is unequivocal data for the scheduling of these activities around fireplaces as demonstrated in chapter 3 where the excavations were detailed.

Beads and waste from bead production in excess of 7000 pieces demonstrate the prominence of OES beadmaking throughout the sequence at OBP. Many of the beads are ochre-stained. At OBP high-density values for beads, bead debris and beadmaking equipment co-occur with Bambata pottery. A similar pattern was found at Jubilee shelter, Gauteng (Wadley 1987:69). Many of the small, often triangular, fragments at OBP were clearly used in bead production as shown by the perforations. However, fragments are also inserted in insect cocoons strung as dancing rattles (Marshall Thomas 1959:132; Silberbauer 1981:228; Katz 1982:39; Valiente-Noailles 1993:176). Sewn springbok ears and cocoon rattles (made by men) may also be filled with seeds or small stones (Schultze 1907:641; Bleek & Lloyd 1911:351-5; Dornan 1925:89; Marshall 1962:249, 1976a:414).

The bead analysis found that 4773, or 66.6%, of the beads and fragments were burnt or discoloured from exposure to high temperatures, and confirms their production around fireplaces (Hutten 2006). Discolouration from soil-staining is particularly noticeable from approximately layer 6. Red ochre staining is also present on some of the beads. A sample of the OBP beads was measured to determine the size range, and the analysis took into account technological characteristics (Plug 1982, 1988). The mean outside diameter of the beads is between 2.5mm and 10mm and the inner diameter (drilled hole) between 0.5mm and 3mm. The larger beads tend to have larger perforations. Beads still in process tend to have a very small drilled hole of 0.5mm diameter. The mean diameter of fragments with drilled holes is between 0.5mm and 3mm. Most of the beads display cylindrical perforations. There are some with conical bores, and a few with biconical perforations (see Appendix N). The bulk of the beads exhibits drilling from the internal surface of the shell as the slightly concave surface probably provides better purchase for the drill (Hutten 2006:7-8). The next tables show the relative frequencies of OES through time, and the distribution pattern, which confirms that the production of beads was mainly centred around fireplaces within the private space. (See also Appendices I & F:126-7)

Relative frequencies of OES

Level	S	1	2	3	4	5	6	7	8	9	10	Total
Total	166	206	374	655	854	1044	843	1171	649	461	746	7169
%	2.3	2.9	5.2	9.1	11.9	14.6	11.8	16.3	9.1	6.4	10.4	100.0

Total OES according to various squares of the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
A	28	178	250	492	176	1124
B	27	102	198	366	137	830
C	8	101	196	612	452	1369
D	3	105	157	463	309	1037
F	30	236	415	942	1186	2809
Total	96	722	1216	2875	2260	7169
%	1.3	10.1	17.0	40.1	31.5	100.0

 open shared space

 private inner space

OES water bottles are again comparable to tortoiseshells in assuming a sacred role when associated with ceremonial behaviour (Wadley 1997b:122). Tortoiseshell and OES are the most common receptacles available for storage so that all hunter-gatherer groups made extensive use of OES flasks to carry water. Women own the OES containers made by men, and mainly carry their own flasks in nets commonly made with *Sansevieria* fibre, bark or grass (Dornan 1917:46, 1925:92; Marshall 1961:246-7, 1976a:77, 414; Heinz & Maguire 1974:38; Silberbauer 1981:90-91, 215; Lewis-Williams & Bannister n.d.:59). Fragments of OES flasks decorated with incised, scratched and drilled motifs are generally recovered from hunter-gatherer localities and also pastoralist sites (Schultze 1907:672-3; Dunn 1931:46; Maggs 1971:55; Deacon 1976:49-51; Humphreys & Thackeray 1983:89, 195, 210; Thackeray *et al.* 1983:21; Henderson 2000:1-3; Wadley 2000b:95, 98; Jacobson 2006:15-7). Whereas intricate designs are found on water flasks of some current hunter-gatherer groups, most have merely scratched marks said to identify ownership (Hoffman & Baard 1969:244; Marshall 1976a:77; Valiente-Noailles 1993:38-41, 163-73).

Decorated OES pieces at OBP are doubtless the remains of water flasks. The motif on all the OES decorated fragments consist of drilled rows of dots sometimes arranged in patterns (see Appendix N). Mason (1962:321) also recovered several OES fragments with incised lines from OBP. OES from broken water flasks are commonly used for bead production (Silberbauer 1981:227, Yellen 1991b:183). Yet at OBP no beads with drilled motifs were recovered, which suggests that decorative motifs were produced mainly on OES containers when used for storing liquids. Whereas OES containers were certainly used to store pigments (Rudner 1971:141; Sandelowsky 1971:153; Thackeray *et al.* 1983:17), ochre-staining on decorated fragments at OBP cannot be linked to similar practices. None of the decorated sections have apertures. Their distribution through time is indicated below. The homogenous patterning of flask fragments doubtless reflects their ubiquitous use by both men and women while working in the different formal spaces.

Relative frequencies of decorated OES

Level	S	1	2	3	4	5	6	7	8	9	10	Total
Total	2		2	4	3	5	1	4		4		25
%	8.0	0.0	8.0	16.0	12.0	20.0	4.0	16.0	0.0	16.0	0.0	100.0

Total decorated OES in various zones of the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
A				1	1	2
B		1	1	2	1	5
C			1	4	1	6
D	1	3	2	1	2	9
F			1	2		3
	1	4	5	10	5	25.0
%	4.0	16.0	20.0	40.0	20.0	100.0

 open shared space

 private inner space

Ornaments from marine and freshwater shell are durable, and the attractive nacreous qualities make these materials suitable for beads and pendants (Reitz & Wing 1999:136-7). Perforated and unmodified marine shells are often found at inland sites and they were probably passed on by intermediaries through established chains of gift exchange (Mitchell 1996:42-52). Although a summary of marine mollusc species from LSA contexts shows the extensive spread, and also diversity, of taxa (Mitchell 1997:43-6), the finds from Blombos (in the southern Cape) in MSA contexts attest to the time depth of their use (Henshilwood *et al.* 2004:404). At OBP shells from freshwater molluscs and land snails, such as *Achatina*, are present throughout the sequence, yet relatively very few beads were found as is evident from the following table. It is also feasible that mollusc shells were used in food processing as utensils.

Relative frequencies of *Achatina* sp., freshwater mussel shell, and seed beads

Level	S	1	2	3	4	5	6	7	8	9	10	Total
Total	6	2	6		1	30	2	2				49
%	12.2	4.1	12.2	0.0	2.0	61.2	4.1	4.1	0.0	0.0	0.0	100.0

Cowries represent some of the most common marine shells at LSA sites from all regions (Schoonraad & Beaumont 1971:66; Kinahan 1991:110; Mitchell 1996:43-7, 59; Kinahan, Jill 2000:45). Cowries were a major currency in the north African slave trade (Wilmsen 1995:90-1). Single or a couple of cowries (*Cypraea* spp.) integrated with OES beads were popular hair, head and ear ornaments (Schultze 1907:643; Schapera 1930:67; Marshall

1961:241, fig. 5; Dunn 1978:56). Some of the cowries given by Lorna Marshall as parting gifts to the Ju/'hoansi in 1951 were still circulating through gift exchange after more than twenty years (Marshall 1976a:303; Valiente-Noailles 1993:158-9). The single cowrie at OBP may have been obtained through long-distance reciprocal gift exchange or contact (see Appendix N). Internally exchanged goods or items traded with farming communities are commonly obtained through a system of intermediaries (Schapera 1930:146). The cowrie is similar to shells found along the East Coast of Africa. The humped, dorsal parts of these shells are commonly removed to facilitate sewing them onto articles of clothing, headbands and other decorative objects (Dubin 1987; Fisher 1987:126-8, 142, 230).

6.4 THE ARCHAEOBOTANICAL ASSEMBLAGE

Palaeoethnobotany provides information on the interactions between human populations and plants (Hastorf 1999:55). Whereas '[m]eat is the real food' (Tanaka 1976:113) and also socially important, it is gathering that forms the foundation of the resource base (Story 1958; Tanaka 1976:112; Yellen & Lee 1976:36-42; Hitchcock *et al.* 1996:164; Kent 1996:137). The role of women in the economy is therefore vital and powerful on various levels as reflected in gendered metaphorical contexts associated with fertility and also in narratives (Marais 1964:2-22; Solomon 1989:69-93; Biesele 1993:41, 97-8; 147-54; Valiente-Noailles 1993:58; Guenther 1999:148,152-3, 158). In one account roots and wood ashes thrown into the sky create the stars, and small animals collected mostly by women are prominent in the many myths and narratives (Bleek & Lloyd 1911:73-7; Guenther 1999:152-3). Several of the major plant foods with a high fat and protein content, such as *tsi* (*Tylosema esculenta*), are powerful and potentially harmful. Ju/'hoansi women in their childbearing years have to be protected by a ritual act called *choa*, which is performed in the veld, whenever a powerful food becomes available (Marshall Thomas 1959:155-6; Marshall 1976a:114). The Hai‖om similarly observe different practices when *Berchemia*, which is a major food, ripens (Schapera 1930:141; Fourie 1965:27). They also have restrictive behaviour towards gathering by menstruating young girls (Fourie 1928:90, 1965:29). The collection and further treatment of some plants, such as *so-/ŏä*, were regulated through prescriptive behaviour that entailed acts of respect and also replanting (Hollman 2005:277-8, 308-22). Plants are moreover essential and extensively used in the production of a range of subsistence tools of which the extent can never be known from the incompleteness of the archaeological record.

Literature on foodways emphasizes a diversified food base, which varied across space and time, but with reliance on preferred foods underpinned by resource availability. A study by Lee (1965) affirmed that the main criteria applied are availability, accessibility, ease of preparation and, lastly, taste and sustaining power (Yellen & Lee 1976:38; Fox & Norwood Young 1982:26). Sets of resources within an environment are important (Wadley 2001a:43), and often determine land-use patterns. Sets with broad diversity and high yields have to support seasonal multi-group gatherings long enough to carry out scheduled social and ritual events. Regional syntheses on indigenous plant food sources extend the palaeobotanical data base on subsistence practices. Small-scale variations and adaptations in a particular environment are common (Flannery 1998:250). In any assemblage locally abundant plant foods feature prominently because they form the bulk of the species available on collecting trips (Marshall 1976a:93; Widlok 1999b:78-9). The !kõ use a collective term for all wild plants and they distinguish growth habits by terms indicating whether it is a tree, large or small bush, grass, herb or climber (Heinz & Maguire 1974:4). Morphological criteria are used to describe and distinguish plants (Heinz & Maguire 1974:5; Heinz & Lee 1978:195). Recent hunter-gatherers know more than 500 animal and plant species of which most are used in various applications for food, medicine and subsistence tasks (Yellen & Lee 1976:37; Heinz & Lee 1978:193-4). Food processing may by indirectly inferred through nutting stones as well as upper and lower grindstones.

In the interpretation of macroscopic plant remains from caves or rock shelters the pathways of deposition should be considered (Hansen 2001:401). The OBP botanical analysis confirms the deposition of several taxa by agencies other than humans (Appendix K). The area is typical of broadleaf savanna vegetation, which supports a high non-plant diversity (see also chapter 2). A savanna environment typically has an extensive range of fruit-bearing trees, climbers and forbs, and below-ground organs providing many of the staple plant foods (Mitchell *et al.* 1996:26-7; Scholes 1997:261-3, 272). The dry environment within the shelter ensured good preservation of mostly an assortment of carbonized seeds and nut endocarps. The area offers an immense variety of plant foods including riverine resources, such as *Nymphaea* spp.
Only the most common taxa recovered from OBP, and several others of particularly high food and/or symbolic value, are subsequently discussed in more detail.

The bulk of the plant food waste was deposited primarily in fireplace areas. This mirrors behaviour at open camps (Yellen 1977:145). *Strychnos* is a dominant component of the total botanical assemblage and occurs predominantly in a charred condition. The recorded frequencies are misleading and must be seen as a bare minimum. There is much breakage and very numerous small fragments, not reflected in the tables, are present in many units (Sievers 2006). Also note that whereas the term seed is used for convenience, it incorporates the various plant fruiting structures (Scott 2005a). Densities of organic materials commonly demonstrate intensities of occupation at a site (Hansen 2001:402, 409). The profuse *Strychnos* remains at OBP are evidently palimpsests of repeated burning events. At Kruger Cave this taxon was also among three edible species most commonly utilized (Mason 1988:199, 207). In as much as it is a popular edible species with refreshing, somewhat acidic-tasting flesh, the seeds are toxic. Medicinal uses are ascribed to both seeds and bark (Watt & Breyer-Brandwijk 1962:728). The bark and kernels of various *Strychnos* species contain an alkaloid, and the fresh fruit pulp and dried kernel of some species have a reddish fixed oil with a level of approximately 19% (Watt & Breyer-Brandwijk 1962:728-9; Fox & Norwood Young 1982:258-61). The crushed fruit of one species (Watt & Breyer-Brandwijk 1962:731), probably because of the active ingredient in the skin and/or seeds (Fox & Norwood Young 1982:261), is used to stun fish.

The high frequencies of *Strychnos* seeds at OBP are intriguing. A distinctive hilum and hilum position, the shape of the seeds, and the fine lines radiating out of the centre to the circumference on one side of the seed in both the comparative sample and the archaeological specimens, unequivocally support identification of this taxon. The perfectly smooth surfaces of the charred excavated seeds indicate burning of fresh seeds because uncharred *Strychnos* seeds tend to become parasitised and decompose rapidly (Sievers 2006:e-comm.). Such secure identifications of taxonomic identity are only possible when a comprehensive range of diagnostic elements is applied through using a statistically significant number of individuals within each taxon in the reference collection (Hather 1994:6; Loy 1994:95-6). High frequencies of *Strychnos* seeds found at shelters and hilltop sites in the Soutpansberg are attributed to their use in rain control ceremonies, which can be linked to magical and healing properties attributed to *Strychnos*, and also several of the other co-occurring taxa (Schoeman 2006:271-5). Smoke as a cleansing agent, or to attract clouds, is often an important element in ceremonial behaviour. The burning of seeds as offerings and ingredients of rain-medicine

can account for some of these seeds at localities frequented by indigenous farming communities (Schoeman 2006:274-5). Whereas similar customs may have been followed during more recent episodes of ritualized behaviour at OBP, the sustained deposition of this taxon throughout the LSA occupation clearly results from different behaviours.

Although the storage of food is not typical of hunter-gatherer behaviour (Wadley 1987:23-4), archaeological contexts of cached plant foods and pits with oil-rich seeds may relate to weakly developed storage patterns, accumulation for later processing, or the use of substances for non-food purposes (Deacon 1976; Plug 1978). *Strychnos* features in delayed consumption. The fruits are picked when green and ripened by burying, often in antbear or warthog burrows, by the Hai‖om, Ju/'hoansi and several other San groups (Lee 1979:483; Fox & Norwood Young 1982:260; Widlok 1999b:107). Unripe collected fruits are often left behind at a campsite (Yellen 1977:138, 149, 162, 178). The dried pulp can be stored indefinitely (Fox & Norwood Young 1982:259). Some indigenous farming communities smoke the gelatinous pulp with the seeds on a mat over a fire until the colour changes to an orange-brown, but the pulp is still moist. The seeds are then removed with a sharp flat instrument and the pulp is sun-dried. After a final roasting on a fire the pulp is stamped to a fine consistency to which honey or sugar is occasionally added. The processed meal can be stored for as long as five years (Quin 1959:84; Cunningham 1988:435).

The ǂKade and Hai‖om distinguish between different *Strychnos* spp., and some species are more appreciated than others (Tanaka 1976:117-8; Widlok 1999b:89, 167). The Hai‖om not only value the fruits for the taste, but also carry them over long distances as gifts and exchange items (Widlok 1999b:93, 188). The Ju/'hoansi protect stands of *Strychnos* trees by precautionary burning of small patches so that large fires cannot cause extensive damage to the trees (Hitchcock *et al.* 1996:163). Some fragments of *Strychnos* shells recovered from OBP were stained with ochre, suggesting their use as containers for pigment. Decorated *Strychnos* shells with incised lines from sites in the Matopos were probably used as containers (Cooke 1963:108, 111). Some San groups use the shells as sounding boxes on musical instruments (Van Wyk & Gericke 2000:58). In addition, many San believe that unripe seeds of some species are effective against snake bites.

Carbonized *Ximenia* and *Strychnos* spp. dominate soil samples processed through flotation at Kruger Cave (Friede 1974:375). *Ximenia* spp. are present at a number of hunter-gatherer sites (e.g. Wadley 1979:28, 2001:49). The fruiting structures are favourite food items, and collected for the edible flesh and the kernels, which are roasted in a fire and then pounded to extract a viscous oil. The processed oil is applied to hides for its tanning and lubricating qualities. The oil prevents hunting bows from splitting, is common as a cosmetic, and is rubbed on the legs and belly of pregnant women to keep skin supple and to facilitate massage (Quin 1959:81-2; Silberbauer 1965:84, 111-2, 1981:224; Mönnig 1967:180; Valiente-Noailles 1993:45-60, 88; Van Wyk & Gericke 2000:60). Most Ju/'hoansi keep a black powder (*//goie*) of pounded charred seeds which, when needed, is mixed with cooked fat into an ointment for pains (Marshall 1976:120). During menarcheal rites the G/wi apply a paste from the oil and ash of the roasted seeds on a girl's hair, which is then rolled into tassels and fashioned into a thick cap (Silberbauer 1965:84). Fourie (1928:90, 1965:28) writes that the fat-containing seed of the *ǂerob* tree mixed with a red bark powder is daily applied during a girl's seclusion. It is not clear whether he refers to *Ximenia* (but see Watt & Breyer-Brandwijk 1962:1330 who gives *ǂɔñ*), which is widely applied for its medicinal properties. The viscous, non-drying oil has a rubber-like consistency (Watt & Breyer-Brandwijk 1962:804-5).

The large and delicious nuts of *Tylosema* (and sometimes the swollen root as a source of water) are still extensively utilized in the Waterberg where it is known as marama. *Tylosema* nuts were recovered from the Kruger Cave LSA deposits (Friede 1974:375). No *Tylosema* was recovered from OBP. To roast *Tylosema,* the nuts are buried in hot ashes and, when done, removed with a stick. Since the nuts explode when left too long in the ashes, they are unlikely to preserve in contexts where fireplaces are reused. The Ju/'hoansi say that '[y]ou might as well throw them away if you forget where they are' (Marshall 1959:218). The nutty kernels are rich in protein and oils and constitutes a major food wherever it occurs (Heinz & Maguire 1974:45; Marshall 1976a:113-4; Barnard 1992:43). In the Kalahari *tsi* patches are owned by the band (Marshall 1960:335, 346). The G/wi and the //Gana from central Botswana use reed mats to separate nuts from the ashes (Tanaka & Sugawara 1999:196:photo 43). *T. esculenta* has a tough pod and can be harvested long after ripening, or stored for months (Fox & Norwood Young 1982:217-9).

No other plant food is as prominent in rites of passage, and the song repertoire of the Ju/'hoansi women includes one on *tsi* beans (Marshall 1960:336, 1976a:113-4, 379; Wadley 1987:9). The oil and fat from eland (or other animals if not available) are applied after a girl has been washed when the menarcheal rites are brought to a close (Marshall 1961:356). A powder of roasted *Tylosema* seeds (*//nõun*) is daily applied to blacken the bodies of Hai‖om young men undergoing initiation. They are given some to eat after a night of dancing and fasting, and on certain days their bodies are cleansed with a paste of the chewed roasted beans (Fourie 1928:92). The beans are also used as beads and weights for the short feathered stick used in games (Fourie 1928:98; Marshall 1976a:415). In a Ju/'hoansi narrative on the creation of fire a *tsi* nut was used to make such a toy by the creator ≠*Goa!na* to acquire fire through trickery by playing a game with the owner of the firesticks (Marshall 1962:233).

A major food is marula (*Sclerocarya birrea*). Marula produces significant yields with high protein and fat contents (Wadley 1987:22-24). It has extensive medicinal uses and, typical for savannas, also hosts an edible caterpillar and the *Polyclada* beetle whose larvae are used in arrow poison. Marula gum is a weak adhesive (Koch 1958:49; Marshall 1976a:120; Walker 1989:281-5; Valiente-Noailles 1993:64; Hitchcock *et al.* 1996:167; Cunningham & Davis 1997:476; Owen-Smith & Danckwerts 1997:401). A stone anvil and hammer are used to crack the very hard marula stone, and the embryos (kernels), are then removed by using a thorn, sharp bone sliver or a metal instrument (Quin 1959:90; Boshier 1965:131 fig. 1; Cunningham 1988:435, 436:fig. 2; Moifatswane 1988:34, 35-6:figs 7-8; Walker 1989:282). Thorns used to extract kernels may be modified (Quin 1959:90). Cunningham (1988:444-5) points out that *Scolopia, Dalbergia* and *Acacia* thorns recovered from the Shongweni-South cave excavations could have been used to extract *Sclerocaya* kernels rather than having been used as awls or arrow points. The marula stones/endocarps are roasted directly in the fire — a practice commonly used for nut-bearing seeds (Walker 1989:285; Barnard 1992:43). The kernels can be processed to extract the oil and African farmers, for example, apply a paste of the oil and red ochre as body paint during puberty and marriage ceremonies (Moifatswane 1988:35). Abundant marula remains were recovered from OBP, however, only carbonized seeds and embryo caps were, according to standard botanical analysis procedures, used in the calculation of distribution patterns (see also Appendix F:131). Whereas many of the uncharred fruiting structures are part of the anthropogenic assemblage, the bulk of marula is doubtless intrusive in the OBP deposit. Nutting stones at the site, as discussed in chapter 4, were

probably also used to crack the endocarps (see Appendix N for an illustration of a dimpled stone).

The oil-rich kernels of *Pappea capensis* are often recovered from archaeological contexts and, at Cape sites, frequently from storage pits (Deacon 1976:95; 1995:122; Deacon & Deacon 1999:122). This species is widely utilized for its pleasant astringent taste, the fine oil, and as medicine (Fox & Norwood Young 1982:334). The kernel comprises 65% of the fruit so that the fairly viscous and non-drying oil, with a yield of 73.5%, is a major constituent (Watt & Breyer-Brandwijk 1962:931-2).

Berchemia is a major food. It has sweet edible berries , which are also used in a beverage, and is an important dye plant (Widlok 1999b:88, 100, 216-7; Van Wyk & Gericke 2000:36). The Hai‖om may collect the fruits only after ceremonies of the first fruit have been observed, which include ritual consumption at a fire. This, possibly borrowed, ritual is of great importance to the Hai‖om (Schapera 1930:141; Fourie 1965:27; Widlok 1999b:84, 214, 216-8).

Terminalia sericea hosts an edible caterpillar, the edible leaves are mixed with other plants, and the wood is used for household implements, such as ash shovels, pegs, link shafts and the flexible springhare probes (Silberbauer 1925:46, 1981:90; Heinz & Maguire 1974:41; Tanaka 1976:117; Yellen & Lee 1976:39; Hitchcock *et al.* 1996:169; Widlok 1999b:88). The bark of *Terminalia* is applied for bindings, glue, tanning and medicine (Silberbauer 1981:92-3).

All *Grewia* species have very high yields and contain significant levels of sugar and starch (Silberbauer 1965:44; Yellen 1976:38). *Grewia* berries, used in the preparation of beer, remain favourite barter items in the desert (Cashdan 1987:128; Widlok 1999b:97, 100-2). *Grewia* ranks highly as food and in the production of firesticks, bows and arrows, fish traps and, as at OBP, pegs for hide working, and necklace sticks used for girls' initiation (Heinz & Maguire 1974:37-8; Marshall 1976a:112-3; Heinz & Lee 1978:66; Silberbauer 1981:86-7, 203, 206-7, 224, 229, 267; Valiente-Noailles 1993:221; Widlok 1999b:93; Van Wyk & Gericke 2000:44). The powdered root of *Grewia flava* is used to colour skins red (Valiente-Noailles 1993:60).
The berries of *Boscia albitrunca* are eaten raw and roasted (Silberbauer 1965:44; Heinz & Maguire 1974:41; Steyn 1984:120). *Boscia* leaves are boiled, the roots processed for a beverage and the crushed bark for porridge. The young flexible branches make excellent traps

(Valiente-Noailles 1993:221). *Ziziphus mucronata* berries are also eaten raw (Silberbauer 1965:46; Heinz & Maguire 1974:41), and the sweet berries are much esteemed during winter months when fruit is scarce (Wadley 2001a:48). The range of fruiting structures recovered from OBP contains many taxa that are seasonally abundant. Different parts of these plants would have been extensively collected for dietary and numerous other purposes. Taxa include *Vangueria* spp*., Englerophytum magalismontanum*, *Lannea edulis, Bridelia mollis*, *Rhoicissus* spp., *Pseudolachnostylis maprouneifolia*, *Cordia ovalis, Mimusops zeyheri*, *Psydrax* spp. and *Vitex* spp. *Elephantorrhiza* is very common on the rocky ridges around the shelter and, apart from being excellent for kindling, used for tanning, in the construction of fish traps, and to stun fish (Fox & Norwood Young 1982:208-9). *Chaetachme aristata* is not edible, but the bark and roots can be used medicinally (Watt & Breyer-Brandwijk 1962:1032).

Most southern African hunter-gatherers are known to have immediate-return systems, yet several foods are sometimes stored (Tanaka 1976:107, 396; Burch 1998:210; Woodburn 1998:88-91; Widlok 1999b:13, 106). In archaeological contexts storage is unusual and, moreover, difficult to distinguish from refuse areas (Kent 1999:79-94). Rare instances of formal storage are pits with oil-bearing seeds (Deacon 1976:95, 1995:122; Deacon & Deacon 1999:122). The collection of unripe *Strychnos* discussed above is another example of storage, and *Grewia* berries are also harvested and kept in skin bags, as are marula and marama (Marshall 1976a:113-4; Steyn 1984:120; Walker 1989:284). Various types of nutlike seeds, such as tsamma, are saved until dry and then roasted and eaten like nuts (MacCrone 1937:251-2; Marshall Thomas1959:44; Steyn 1984:120; Widlok 1999b:119).

The sweet, plum-like berries of *Xanthocercis zambesiaca* are nutty when roasted, but are also collected and buried in skin bags, and when mature, the compacted mass is dried and ground (Palgrave 1977:297; Fox & Norwood Young 1982:224-5). The seeds are quickly parasitised so that few were recovered from OBP, but large yields from the enormous specimen nearby would have constituted a major source of food, as a nyala tree continues fruiting almost throughout the year from November onwards (Palgrave 1977:297). Rain-control ceremonies by indigenous farming communities are scheduled to begin from October or November, so that extended fruiting of both this tree and *Strychnos* within the required period may further account for their role in drought-treating rituals (Schoeman 2006:271-4). Although there is no evidence to link the botanical remains from OBP to intentional introduction for similar purposes, the role

of shelter sites in the rain-making ceremonies of indigenous farming communities is detailed in chapter 2, and also in chapter 7 when the introduction of ceramics to the site is discussed.

Several edible annuals grow near the OBP shelter, including the horned cucumber *Cucumis metuliferus*, and tsamma *(Citrullus lanatus*) grow within the area. Although the seeds of the former are generally too fragile to preserve (but see Wadley 1979:66), there is no doubt that the seasonally substantial crops would have been utilized, and two taxa of *Cucumis* were identified (Sievers 2006, see Appendix K). The introduction of Cucurbitaceae taxa, and also the uncharred *Momordica repens* and *M. balsamina*, into the deposit by agents such as rodents is highly probable. However, the spiny fruits and also leaves of these climbers are commonly eaten (Fox & Norwood Young 1982:176-9). The berries of *Flueggea virosa* are edible, and most parts of the plant are used medicinally and as fish poison. The slender branches are suitable for making fish traps (Watt & Breyer-Brandwijk 1962:417; Palgrave 1977:396-7, 2002:471-2; Fox & Norwood Young 1982:195).

Cucumis species feature in narratives, like many types of plant foods. In one version two Ju/'hoansi women turned themselves into small cucumbers to trick their godlike husband, *≠Goa!na,* who possessed great magic powers, and who also gave fire to humankind (Marshall 1962:228-30). A much relished sweet dish is made of finely ground tsamma seeds mixed with roasted young cucurbits to which honey may be added when available (Steyn 1984:120). The juice of cucumbers, like the sap of *Sanseviera* and *Terminalia*, serves as a carrying agent for arrow poison (Schapera 1925:205; 1930:132; Marshall 1976a:151; Valiente-Noailles 1993:64). (See also Barrister & Johnson 1978:photos 86-7). The G/wi use tsamma juice in the working of animal skin because it makes skins soft and pliable (Silberbauer 1981:224). Moistened ground tsamma seed is also used on the skin as a cosmetic (Valiente-Noailles 1993:221; Van Wyk & Gericke 2000:230). *Cucumis* seeds were, akin to various bones and plant parts, also strung and worn as decorations in the Kalahari (Schultze 1907:645, 658; Dornan 1917:44, 1925:88). Beads of hard curcurbit seeds were recovered from Big Elephant Shelter, Namibia (Wadley 1979:33).

Various other taxa recovered from OBP have known uses, but could also have been introduced by other agents frequenting the shelter. Infusions of *Triumfetta* spp. have wide applications (Watt & Breyer-Brandwijk 1962:1029). The various *Commiphora* spp. have edible

fruits and gum, but also host the *Diamphidia* spp., of which the beetle larvae are used as arrow poison and the cocoons for dancing rattles (Breyer-Brandwijk 1937:279-84; Koch 1958:49-54; Silberbauer 1981:76; Fox & Norwood Young 1982:139-41).

No domestic cereals or domestic plant foods were recovered. Food (and in particular meat) was commonly given in exchange for labour during more recent times (Widlok 1999b:125), and certainly in the Waterberg (Schlömann 1898:66-70; Marais 1920:3-5). Most foods acquired through relationships with indigenous farming communities would have been consumed at or near the villages (Wadley 1996a:215). Access to domestic foods and the acquisition of pottery vessels for cooking, especially cereals, would have been relatively rare. Therefore, only the acquisition of relatively large quantities, or foods used in delayed consumption, would be archaeologically visible. Fragments of gourds were recovered from the upper levels. The deposition of gourds can derive from activities of any group using the shelter. Both gourds and OES were used to carry water in the Waterberg stories (Marais 1964:18, 29-30).

6.5 IMPLEMENTS OF WOOD

6.5.1 Miscellaneous tools and organics

Hunter-gatherers used an extensive range of artefacts made of perishable organic materials (Cooke 1980:25-9; Walker 1995a:55). The few wooden implements recovered from OBP probably form only a fraction of the original organic assemblage. Finds include a distal section of a digging stick with a diagonally shaved blade. Resharpening of the working end gradually reduces the length of a digging stick and discards were often left at the locality where last used (Parkington & Poggenpoel 1971:13; Yellen 1977:140; Hitchcock *et al.* 1996:169). These implements are made on hard woods and used by both men and women for plant food collecting, as supports and to beat the ground at dances, to dig graves, to kill animals and process foods (Holub 1881:439; Schultze 1907:669; Dornan 1917:49; Heinz & Maguire 1974:37; Marshall 1976a:98-100; Dunn 1978:53-4; Silberbauer 1981:89, 199, 209; Valiente-Noailles 1993:43; Binneman 1994:112-3). A Ju/'hoansi man will make a digging stick for his wife, but she herself sharpens it with her husband's knife or axe (Marshall 1976a:98-100). Such repairs often took place away from camp (Bartram *et al.* 1991:69). In mountainous areas digging sticks were sometimes fitted with horns. A specimen fitted with a horn (and a bored stone) is housed in the British Museum (Schapera 1930:141, Plate IX).

Two sections of firedrills made on a soft wood, and displaying fire-blackened notches, were recovered from OBP. The particular fragments are sections of the horizontal beds in which drills are rotated until friction ignites the soft tinder of shavings, grass and bird nests (Schultze 1907:677; Dornan 1917:46; Parkington & Poggenpoel 1971:13; Deacon 1976:46-8; Marshall 1976:81; Friede 1978:230; Hitchcock *et al.* 1996:169). Hard woods are used for the upright male stick, and softer wood for the thicker objective female piece (Silberbauer 1965:53, 1981:229; Heinz & Maguire 1974:37; Van Wyk & Gericke 2000:282-3). Because fire is used for the cooking of meat, the Hai‖om frequently use repetitious phrases while twirling firedrills, in which they appeal for animals to be hunted and for hunting prowess (Widlok 1999b:222-3).

The fragment nature of miscellaneous wood working tools does not always allow functional interpretation (Deacon 1976:44-5). Various pieces of wood with charred ends were recovered from OBP. They are similar to ones wooden implements used for stirring and removing vegetable foods, such as beans, from hot ashes (Schapera 1930:94; Heinz & Maguire 1974:37; Marshall 1976a:85; Yellen 1977:140, 201; Hitchcock *et al.* 1996:169). I pointed out in chapter 3 that patches of compressed thin twigs adjacent to fireplace areas at OBP were doubtless remains of bedding, as discussed. Only two instances of bedding were clear, and the bulk was contained in the unexcavated witness section. The positioning of sleeping hollows means that any organics introduced into sleeping areas are frequently burnt, leaving only an ashy matrix. At Big Elephant Shelter a thick mat of woody *Blepharis* spp. served as a base for bedding patches of grasses and leaves (Clark & Walton 1962:1-4, figs 1-2, plate 1; Wadley 1979:29). *Blepharis* spp. has several medicinal applications, for example, to relieve itching and in the treatment of toxic insect bites (Watt & Breyer-Brandwijk 1962:2-3).

6.5.2 Cache of wooden pegs

Wooden pegs in the OBP assemblage are alike to those observed in ethnoarchaeological contexts (Clark 1959:200, 243; Deacon 1976:46-8; Heinz & Lee 1978:67; Wadley 1979:33; Silberbauer 1981:224; Mason 1988:81; Valiente-Noailles 1993:60). The OBP specimens were whittled to a sharp point and several retain bark, whereas several show crushing on the proximal end (see illustrations in Appendix N). Pegs hammered into rock cracks for hanging up bags and bows, or used in scaling trees and rock faces when collecting honey, commonly exhibit impact damage (Stow 1910:87; Parkington & Poggenpoel 1971:18). Because pegs are mostly used in hide-working, most edge-crushing on pegs is sustained when the pegs were

pushed into hides.

The pegging-out of skins is one of only few strictly separate activities. The messy and smelly process not only takes up space, but also attracts insects and scavengers (Draper 1976:212; Yellen 1976:69, 1977:95, 145; Hitchcock *et al.* 1996:172). The skin is placed hair downwards on a layer of grass and stretched using a number of short, pointed sticks (Yellen 1977:145, 202; Valiente-Noailles 1993:39). Data collected at Ju/'hoansi open camps demonstrated that piles of approximately 40 to 50 pegs were discarded on the spot where they were made and used in the pegging out of steenbok, duiker and gemsbok skins (Yellen 1977:145, 158, 184, 201, 202).

Although only one specimen was recovered from OBP during the excavations, an entire collection of pegs was found intact during rehabilitations of the site in 2005. Several pegs were observed eroding from a sheltered patch between large rocks and the back wall in the unexcavated most northern part of the shelter. They were contained within a thin layer of surface debris, seeds and other cultural material including OES beads and lithics. Only pegs lying on the immediate surface and partly exposed ones were collected. Although several sticks are broken, most display a pointed distal working part. Of the sample, 35 are complete pegs, and approximately 20 are fragments or broken sections. They have lengths of approximately 100 mm to 200 mm. *Grewia* spp. (Silberbauer 1981:224) are generally used for pegs. The specimen recovered during the excavations displays a characteristic four-sided shape suggesting that it was also made on *Grewia*.

Wooden pegs were frequently kept in old leather bags or containers (Valiente-Noailles 1993:16; Kent 1999:82). Because the pegs at the shelter are contained within a small area, a similar pathway of deposition is likely. It may also be a rare incident of storage where pegs were being produced for future use, and the incomplete specimens may indicate an interrupted activity. Also, the setting of these activities at some distance from the centrally located main habitation area can indicate production, use and discard at the spot where a hide was staked out analogous to ethnographic examples. Of particular interest in the peg sample is one peg with a frayed proximal end where it sustained damage, probably from being struck by a hammer to facilitate penetration of the hide. This suggests that pegs were being produced as needed on the spot where the activity was scheduled. This area is unexcavated. However

different relational traces (Schiffer & Miller 1999:53) suggest production activities of men centred around a fireplace.

6.5 EXOTICS

Goods reflecting contact and/or exchange with indigenous farmers and, more recently, Europeans, are restricted to glass beads, metal ornaments and metal slags. The OBP ceramic assemblage is discussed in chapter 7. The high frequencies of sherds from different ceramic traditions and from different periods reflect the importance of this locality to various groups over time (see Appendix G). Extensive exchange networks, which are known to have been prevalent among most groups over the last 2000 years, effected the dispersion of manufactured goods and trade items (Bleek & Lloyd 1911:281, 377; Marshall 1976a:306; Silberbauer 1981:239-41; Wiessner 1982:61-84; Cornell 1986:234; Guenther 1994:6; Wadley 1996a:205-17). Products from the veld, tanned skins, furs, ores, OES feathers and, especially, beads were exchanged with neighbouring farming communities for commodities. Goods received in exchange were mainly glass beads, cowrie shells (*Cypraea* spp.), other marine shells, ornaments of copper and iron (Smith 1836:187; Notcutt 1935:64; Kirby 1940:195; Arbousset & Daumas 1968:247; Wadley 1979:9-10, 33; Silberbauer 1981:228; Denbow 1986:14; Cashdan 1987:12; Guenther 1994:6, 1996:69; Morton 1994:228; Miller *et al.* 1995:43, 54; Mitchell 1996:35-76; Van der Ryst 1998:30; Widlok 1999b:94). In archaeological contexts ceramics are the most commonly recovered trading goods.

At OBP several glass beads, and one specimen each of copper and iron beads were recovered. Beads and copper are particularly desirable goods (Silberbauer 1981:227-8). These commodities were accordingly used in the notorious human trade practices of the interior whereby many San remained indentured for life (Arbousset & Daumas 1968:248; Eldredge 1994:117-8), but also in payment to induce them to act as guides (Wallis 1946:748). During such an alleged trade transaction in the Waterberg approximately 13 children belonging to remnant hunter-gatherer groups were captured during the 1850s and exchanged for cattle, copper and beads (R2737/59 1859; R3129/59 23 September 1859; R4310/61 14 March 1861; Kistner 1952:238-240; Van Jaarsveld 1971:282, 285, 294; Morton 1994:231; Van der Ryst 1998a:50). The ensuing hostile relations resulted in the killing of a trader, and whereas the subsequent official investigations ordered the return of the children, only a few were brought back (R2689/59; Suppl. 3/59 SS31; Suppl. 4/59; Kistner 1952:240). In addition, exotics, such

as copper beads, may have been introduced by African farmers themselves through ritualistic and ceremonial behaviour at the OBP locality, as also discussed in chapters 2 and 7.

Rituals and supplication acts that are accompanied by the deposition of gifts and ornaments at painted sites, are still a feature of the ceremonial life of some indigenous groups in the Soutpansberg (Wilcox 1963:206; Rudner & Rudner 1970:98, 103; Loubser & Dowson 1987:51-4; Schoeman 2006:275-6). The many copper and brass bangles at the sacred site of Tombo-la-ndou/Bosley are said to belong to women desiring children who deposited some of their bangles on low bushes in front of a prominent boulder containing a panel of mainly elephants done in red ochre (Willcox 1963:20-1; Rudner & Rudner 1970:98, 103, 115:plate 30; Loubser & Dowson 1987:52:fig.2-3; Unisa site visit 1994). People suffering from misfortune, and in particular infertile women, would placate the ancestor spirits by leaving gifts as instructed by a healer. The colour red and prominent stones are often characteristic of these sacred sites, where offerings nowadays consist of metal bangles, coins, buttons, hair cuttings and pieces of clothing worn by the infertile women (Loubser & Dowson 1987:53-4). Colour symbolism is moreover a known feature of the cosmology of most indigenous farming communities, and distinctive meanings are assigned to red, black or white during liminal life events (Hammond-Tooke 1981:135-9; Prins & Hall 1994:190-1).

The trade beads, although only a small sample (and the beads are spread across the living area, but within three clusters), show association with the private space where the greatest numbers were recovered together with the single copper bead. In open camps family activities are scheduled around hearths in front of huts. The house structures do not function as proper dwellings, but are mainly used for sleeping and to store some belongings (Marshall 1976:88; Yellen 1976:64, 1977:87-92; Jacobson 2005:153-4). The position of beads at OBP may indicate ownership and storage in the private space, but numbers are too low for strong inferences. Constraints on internal floor space at shelters impose particular behaviour and less strict demarcation of activities. We can accordingly expect a blurring of waste, tools and ornaments.

Relative frequencies of glass and metal beads vary through the sequence. Beads are present mainly in the more recent levels, and restricted to one square. Movement of small-size items is also likely, yet a copper bead was recovered from layer 10 even lower down in earlier

deposits.

Glass bead frequencies according to zones in the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
Total	1	2	2		6	11
%	9.1	18.2	18.2	0.0	54.5	100.0

 open shared space

 private inner space

Only two pieces of slag were recovered from the upper levels in the area behind the dripline. The ceramics are discussed in the next chapter. It suffices to note that 1043 sherds with a mass of 6 926.15 grammes give an estimated vessel equivalent of at least 123 vessels for the assemblage that contains ceramics of Bambata, Happy Rest, Eiland, Broadhurst and Icon facies.

A copper bullet casing was recovered in the space directly against the shelter wall. Vertical displacement is indicated by a clearly intrusive position within the sequence.

6.6 THE ROCK ART SEQUENCE

Formal and contextual analyses of the rock paintings fall outside the scope of the current research project, and merely a brief overview is given. It has been long recognized that there are many hundreds of painted sites in the mountainous regions of the Waterberg, and the area is cited as an important rock art repository (Mason 1962; Schoonraad & Beaumont 1968; Rudner & Rudner 1970; Lewis-Williams & Dowson 1989; Van der Ryst 1998a). Some of the later Waterberg art contents, including the handprints and female apron motifs, are considered equivalent to the Tsodilo sites in Botswana, and in particular the late art from the Afguns shelter devoid of deposit along the Mokolo River at a short distance from OBP (Rudner & Rudner 1970:98,103, Plates 31-2; Rudner 1971:35; Eastwood 2003:19). Several of the motifs at this locality bear a striking resemblance to images at OBP.

The tracing of selected panels was undertaken in collaboration with the Rock Art Research Institute of the University of the Witwatersrand (see Appendix M). The paintings have not preserved well. The earlier fairly densely painted classic hunter-gatherer art is badly weathered

and covered with a thick crust of chemicals precipitated through water action. The paintings also suffered much from vandalism so that large areas of the rock face are covered with graffiti. Fire spalling caused damage to a few of the lowermost paintings.

Handprints are central motifs in the later art at OBP (Appendix M:fig. 1). Whereas southern African rock art within all regions shares fundamental commonalities, distributional approaches suggest the assignment of distinct meanings to specific and also temporal themes, including powerful animals, a particular posture, or handprints (Manhire *et al.* 1983:29-33; Woodhouse 1987:6-8; Batchelor 1988; Eastwood & Cnoops 1999:107-19; Laue 2000:33-55, figs 1-3; Ouzman & Smith 2004:1-4; Eastwood & Smith 2005:63-76). The different styles and classes of motifs in the local OBP sequence are in accordance with a threefold authorship identified for the general region (Hall & Smith 2000:30-46; Eastwood 2003:14-26; Ouzman & Smith 2004:1-4; Eastwood & Smith 2005:63-76).

These comprise classic San, early herder, and African farmer idioms (Hall & Smith 2000; Ouzman & Smith 2004; Smith & Ouzman 2004; Taçon & Ouzman 2004; Eastwood & Smith 2005:63-76; Eastwood & Tlouamma 2006:9-11). First there are the diagnostic and typical San paintings common to the Limpopo Flats area. Next are the strikingly different geometric finger paintings assigned to Khoekhoe herders in a colour spectrum that ranges from red and orange to white, and which show temporal overlaps with the former group. A composite sketch of the Geometric Tradition paintings in the Limpopo-Shashe Confluence Area (LSCA) shows the major categories common within this expression (Smith & Ouzman 2004:505:fig. 5; Eastwood & Smith 2005:65). The range of geometric symbols at OBP is typical for the region. Non-representational motifs in the early herder art include karosses, loincloths, aprons and handprints in red and yellow (Appendix M:figs 1-3).

Finally there is the rock art typical of Bantu-speaking people and linked to northern Sotho-speakers in the region (Appendix M:figs 4-5). The African farmer art/late white abstract, geometrics and animal representations at OBP, which are also ubiquitous at most sites in the Waterberg, may relate to the utilization of shelters by groups of mixed descent as well as indigenous farming communities. Similar finger paintings in the Waterberg, Soutpansberg and Namibia are attributed to African farmers and also to descendants of hunter-gatherers (Roberts 1916; Rudner & Rudner 1970; Boshier 1972; Prins & Hall 1994:174; Hall & Smith 2000;

Vogelsang 2002; Vogelsang *et al.* 2002; Eastwood & Smith 2005; Lenssen-Erz & Vogelsang 2005).

Late paintings traced in 1959 at Afgunst 562 LQ and Spruytskloof 606 LQ (1:50 000 2327DC Afguns) near OBP are said to be made by farming communities in completion of initiation ceremonies (Rudner & Rudner 1970:98,103,109:plates 31-2). Surface ceramics certainly confirmed their presence at these shelters. The tracings included handprints and game animals, such as ostrich, giraffe, rhino, and what is probably gemsbok, but also domestic animals and geometrics. Giraffe imagery is common in San and also in later arts at OBP Appendix M:fig 4). Giraffes are associated with water and supernatural energy among the San (Biesele 1993:67-70; Peters 2000:87). These animals also became prominent in the recent curing dances of several San groups (Katz 1982:49-51). Giraffes also featured extensively in the late arts of the Central Limpopo Basin (CLB) (Willcox 1963:Plate 14; Eastwood & Cnoops 1999:107-19), and also in ceremonial liminal events of indigenous farming communities (Prins & Hall 1994:187). Rites of passage, such as the initiation of girls at puberty and of young men, are major themes within this art expression (Rudner & Rudner 1970; Boshier 1972; Prins & Hall 1994; Van der Ryst 1998a, 2003; Moodley 2004; Namono 2004; Eastwood & Smith 2005; Namono & Eastwood 2005).

Handprints represent a universal theme in rock art, and occur in Africa, the Americas, Asia, Australia and Europe, with meanings ranging from verbalizing ownership of sacred places to initiation ceremonies (Manhire 1998:105; Ouzman 1998a:33). The negative or stencilled handprint characterizing this art form in Europe is not a feature of handprints in southern Africa. In sub-Saharan Africa positive handprints are common and, especially, abundant in rock art regions of the western Cape and Limpopo (Lewis-Williams & Dowson 1989:108; Hollmann 1993:22). Whereas monochrome plain and decorated or lined versions are associated with the Cape localities, and also found at a few sites in Zimbabwe, the handprints from the CLB region are always plain (Van Rijssen 1994; Garlake 1995; Manhire 1998; Van der Ryst 1998a; Parkington 2003).

In the CLB many of the finger-painted sites assigned to herder art also contain handprints. The handprinted and geometric art show a strong correlation, are visually dominant, and are often placed so high that some sort of scaffolding was evidently used (Hall & Smith 2000:42;

Eastwood & Smith 2005:69-71; Lenssen-Erz & Vogelsang 2005:58). Various means were employed in collecting honey. They include pegs pushed into rock fissures, thongs, ropes and ladders, which are depicted in paintings (Stow 1910:87; Clark 1959:221; Pager 1971:550-1; Kinahan 1991:64). At OBP a handprint panel in red has been intentionally placed within a frame, formed by spalling, at a height of approximately five metres on the wall section immediately above the excavated area. The many other monochrome prints lower down were produced in red, orange and yellow ochre. Single handprints are rare, and several panels contain clusters of hands (Appendix M:fig 1). Eastwood (2006 e-comm.) assigns the redrawn panel of handprints from OBP to the Khoekhoen. White handprints are less common and black is rarely used. A single white handprint at a site towards Lephalale/Ellisras can be assigned to the African farmer category on account of a markedly greater size, the colour and technique of paint application. The only domestic animals documented during this particular survey are also at this locality (Grootfontein 501 LQ; 2327DA Ellisras; see also chapter 7, Appendix N). A late painting of a goat in black is placed among a background of numerous dots and in association with other game such as sable antelope and giraffe and also herder art (see Appendix N).

At OBP the marking of motifs and also the downward strokes made with a finger dipped in pigment (see handprint panel in Appendix M) may relate to utilization of the art (Eastwood & Smith 2005:67). Fingermarks, deliberate smearing of paint, rubbing and the touching of rock art are recurrent elements and likely reflect what has been described as the consumption of rock art to harness potency (Yates & Manhire 1991:3-11; Hollmann 1993:18, 21-2; Lewis-Williams 1995:143-154). In chapter 2 the touching and also use of rock art at other sites within the region for rainmaking and spiritual well-being was shown to be a powerful resource used by hunter-gatherers in the Waterberg to negotiate relationships with African farmers (Peters 2000).

In terms of the ritual meaning of handprints, various views are offered (Van Rijssen 1994; Manhire 1998; Smith & Ouzman 2004). In the western Cape handprints are common in areas occupied by what was probably small-scale sheep-owning hunter-gatherers (Parkington 2003:110- 1). A study in which the size of handprints was applied to infer possible stature suggests that mainly sub-adults made prints (Henneberg & Mathers 1994:493-6; Manhire 1998:99-105). It is therefore argued that sites with handprints served as localities for initiation events. In the Western Cape '[i]t may thus seem valid to suggest that handprints formed part

of the herder belief system and not that of the hunter-gatherer people' (Van Rijssen 1994:173-4). Whereas aspects of culture were common to both groups, and although it could possibly include similar ceremonies and rituals, there is no evidence that trance formed part of the belief system of the herders.

However, handprints cannot be assigned exclusively to one group (Smith & Ouzman 2004:514). Also, the geographical extent argues against single authorship, particularly when found in association with what are clearly San paintings. Handprints are believed to be polysemic and may signify potency associated with hands. It is suggested that the prints assisted in fixing potency on the walls and likely also curing (Lewis-Williams & Dowson 1989:108; Manhire 1998:105). Rock surfaces represent entrances to another reality and the harnessing of potency from handprints on the wall would facilitate entering trance and similar experiences (Lewis-Williams & Dowson 1989:108; Ouzman 1998a:33). The laying on of hands is still typical healing behaviour used to draw out illness during Ju/'hoansi curing dances. 'When I lay hands on a person, I take sickness into my hands. Then I shiver from the sickness, and then I throw it away' (Katz 1982:107). It is significant that the Drakensberg art region, which is particularly rich in trance symbolism, contains very few sites with handprints (possibly less than 10), which may argue against such an interpretation (Van Rijssen 1994:172), at least for that region.

Analogous motifs featuring in all three rock art expressions common to an area are associated with particular groups, depending on the technique used and the contexts within which they were produced. The bidirectional selective borrowing of elements of religion across ethnical boundaries, which were integrated into respective cosmologies, is universal in southern Africa. It is indisputably a feature of the archaeology of the Waterberg, Makgabeng and the Shashe-Limpopo regions (Mason 1958, 1962; Campbell 1987; Jolly 1992, 1994, 1995, 1998, 2005; Prins & Hall 1994; Katz *et al.* 1996; Hammond-Tooke 1998, 1999; Van der Ryst 1998a, 2003; Guenther 1999; Hall & Smith 2000; Eastwood *et al.* 2002; Eastwood 2003; Ouzman & Smith 2004; Eastwood & Smith 2005; Van Doornum 2005; Schoeman 2006; Eastwood *et al*. in press). One of the largest panels of the more recent art at OBP contains a procession of three large indeterminate ground birds in white (see Appendix M:fig. 5), which probably relates to indigenous farmer art. The illustrated geometric motif (Appendix M:fig. 3), is alike to images from the nearby shelter at Afgunst and as published by Rudner & Rudner (1970:109 plate 31).

Recurrent motifs in the rock art of the Waterberg, LSCA and Makgabeng Plateau are depictions of aprons that can be ascribed to San, Khoekhoen and also northern Sotho. The images of aprons at OBP (Appendix M:figs 2 & 4) are virtually identical to some of the female apron motifs from the former regions. The first example (fig. M.2) is a finger-drawn semi-ovoid with two side fringes and internal decorations (see also Eastwood 2003:20, fig 10:5-6). Another panel contains a more rectangular animal skin apron (fig. M.4) The image is analogous to San (see Eastwood 2003:18 fig. 6:15-6; 2005:1-25) and Khoekhoe finger-painted female aprons common in the CLB, but also from Tsodilo (see Eastwood 2003:19 fig. 9:3-4); and also northern Sotho female aprons (Eastwood 2003:21 fig. 12, 22:fig. 13; Namono & Eastwood 2005:81, fig. 8). Similar aprons are placed in association with classic San motifs at a shelter near OBP Zoetfontein 612 LQ (2327DD Tambotierivier) (Batchelor 1987:16-7, figs 3-5). At OBP this particular image is accompanied by a roughly drawn giraffe and stretched out skin known as a spread-eagled or saurian motif (Prins & Hall 1994:186; Van der Ryst 1998a:109, fig. 11). Such images have more recently also been identified as a *kōma* motif associated with northern Sotho initiation rituals of women and also young men (Namono & Eastwood 2005:81, figs 10-1, 82-4). The positioning of different images within one particular panel and also the contents, which refers metaphorically to the initiation of girls (Prins & Hall 1994:187), assign this particular panel to an event where indigenous farming communities were engaged in rituals at the OBP shelter. Prins & Hall (1994:182-89) point out the multi-layered symbolism in the rock art of indigenous farmers. Distinct motifs may be integral to not only male or female puberty ceremonies, but can also relate to rain control.

The use of specific images and their particular placements comment on the context of prevalent social and historical circumstances (Ouzman 1998a:33). Visual dominance is attained by the relative position and size of the non-entoptic geometric images assigned to herders. In the CLB area-specific distribution is evident and with great visual dominance within localities (Eastwood & Smith 2005:71-2) analogous to the high-placed handprint panel at OBP. Social, economic and behavioural transitions are more visible in rock art so that the three styles common at most sites in the general area of Limpopo, the Waterberg Plateau, Soutpansberg, Blouberg and the Makgabeng Plateau, attest to the complex interactive history of the region. The utilization of the OBP locality by various groups over time not only ensued in disparate rock art expressions, but also the deposition of a range of their ceramics, often in direct association with ceremonies and rituals incorporating rock art. This requires references

to rock arts in more detail with the ceramics in the following chapter.

6.8 CONCLUDING REMARKS

The organic remains at OBP show excellent preservation of plant and animal food waste, as well as numerous bone and some artefacts on wood so that a diverse range of implements, used for subsistence as well as non-subsistence-related activities, occurs in primary context. Regional variability in the technologies and strategies applied by hunter-gatherers in the Waterberg expands on the data available on the economies, social organization and ritual life of hunter-gatherers south of the Limpopo (Mitchell 1997). Accounts by missionaries and travellers (Baines 1872, 1877; Holub 1881; Stech 1885; Schlömann 1896, 1898; Moffat 1910; Schwarz 1928; Kirby 1940; Chapman 1971; Cornell 1986), as well as archival documents on the Waterberg contact situations, and moreover a large body of ethnographic data, are available to interpret trends and occurrences apparent in the archaeological record. The superabundance of OES beads and manufacturing debris is a clear indication of extended events of likely large groups who used the shelter during more formal band aggregation phases, at least during the earlier phases.

Stylistic and other changes in the rock art may reflect changes in site function and emphasize that different social groups not only utilized OBP, but suggest the realignment of ritual associations of this locality (Smith 2005:230; Veth 2005:110). The arrival of new groups in the region and their impact on hunter-gatherers is clearly reflected in the local rock art sequence. Some of the changes in the rock art can probably be ascribed to ideological transforms following contact similar to findings for the Waterberg Plateau (Van der Ryst 1998a, 2003).

In the next chapter the ceramics are discussed with a particular focus on Bambata ceramics. The data from OBP will be used in conjunction with published sources to review opposing views on the proposed introductory routes of LSA/EIA Bambata ware. The co-occurrence of pottery and domestic stock relates to the ongoing debate and questions on the arrival of domestic stock and the emergence of pastoralists in this part of southern Africa. Ceramics are reliable chronological markers and can be used to resolve cultural affinities. Such evidence moreover signifies incipient changes in autochthonous economies and social systems. The different rock art motifs, and especially those ascribed to herders, will be contextualized with reference to the introduction of ceramics to OBP. This should be of particularly value in the

context of Bambata since the distribution and sequence of the various rock art traditions may inform on the origin and authorship of these ceramics.

◆◆◆

THE CERAMICS

Ancient people used pots, not sherds, and hunted animals, not bones (Shott 2000:726)

7.1 INTRODUCTION

This chapter reviews the pottery sample from OBP, which features five distinct ceramic expressions. Ceramics are reliable chronological markers and may be used to resolve cultural affinities. The ceramics at the shelter have diverse origins and were most probably introduced by different groups over time. Some were likely acquired by hunter-gatherers themselves from not only indigenous farming and possibly herder communities, but also through long-distance gift exchange networks with other bands. Cave and shelter localities were moreover utilized by indigenous farming communities for various practices, including metal smelting/smithing (Mason 1988), and especially for religious activities and ritualized behaviour (Boshier 1972; Aukema 1989; Prins & Hall 1994; Manhire 1998; Van der Ryst 1998a, 2003; Hall & Smith 2000; Namono & Eastwood 2005; Van Doornum 2005; Schoeman 2006).

The relevance of a comparatively large sample of distinctive thin-walled pottery from OBP, generally referred to as Bambata, is briefly discussed in chapter 1. Here the data from OBP will be used in conjunction with published sources to review opposing views on the proposed introductory routes of LSA/EIA Bambata ware. The appearance or co-occurrence of pottery and domestic stock relates to the debate centred on the arrival of domestic animals in southern Africa, the emergence of pastoralists and the spread of food production. These events moreover signify incipient changes in autochthonous economies and social systems. Intrusive elements — such as ceramics — may be examined to explore relationships with neighbouring communities and reconstruct economic and social frameworks (Wadley 1996a:214-6; Mitchell 1997:398-402; Yellen 1998:231).

The different facies in the ceramic assemblage from OBP are briefly reviewed; thereafter the archaeological contexts within which the Bambata occurs are detailed with reference to dates for the ceramics and the first appearance of domestic animals. A general outline of the characteristics of Bambata provides a basis for distinguishing the specific attributes of the OBP assemblage. Lastly, data for the construction of a likely identity for the makers of Bambata are evaluated.

Note that the tables with data on ceramics and ceramic illustrations are included in Appendix G

7.2 THE CERAMIC ASSEMBLAGE AT OBP

The OBP assemblage contains ceramics of Bambata, Happy Rest, Eiland, Broadhurst and Icon facies. The co-occurrence of different ceramic facies at a LSA site is not uncommon, yet not always recognized (Robinson 1966:83-4). A particular assemblage may therefore contain a conflation or a selection of several ceramic expressions. The following table gives a broad outline of the time frame established for the different ceramic facies from excavated IA sites within the region, and which are also pertinent to the facies represented by the assemblage recovered from OBP. No ceramics from the Diamant facies were identified. Various factors influence the analysis of a ceramic assemblage from a shelter or cave site. The commonly small sample from hunter-gatherer contexts inhibits the recognition of different facies, and sample size is besides directly related to the excavated section of the site and may not be representative. Due to the fragmentary nature of pottery from hunter-gatherer contexts, it is not always possible to distinguish between closely related facies. Different researchers can therefore disagree with the classification of any particular assemblage. In the analysis of the OBP ceramic assemblage, definitive identification was made only when a sherd conformed to the attributes of a particular facies. The fragmentary nature of many of the decorated sherds made distinction between the closely related Happy Rest, Diamant and Eiland facies particularly difficult.

Broad outline of the different Iron Age ceramic facies of the regional sequence as represented at OBP*

Time range	Facies
AD 400-700	Happy Rest
Overlap AD 600-700	Happy Rest/Diamant
AD 700-1000	Diamant
Overlap AD 900-1000	Diamant/Eiland
AD 1000-1300	Eiland
Overlap AD 1200-1300	Eiland/Broadhurst
AD 1300-1400	Broadhurst
Overlap AD 1300-1400	Broadhurst/Icon
AD 1300 -1500	Icon facies of the LIA Early Moloko

*(Based on Biemond & Boeyens 2006; see also Denbow 1981; Evers 1988; Huffman 1989a, 1989b, 2000, 2002; Boeyens 1998, 2003)

The illustrations of African farmer ceramics from OPB (Fig. 7.1) are included in the text to facilitate the discussion. The sketches are also presented in Appendix G, but with more detailed descriptions and in larger format. At OBP the total number of sherds recovered amounts to 1043 with a mass of 6 926.15 grammes. As sherd count is inadequate to measure the number of vessels, quantification by estimated vessel equivalent (EVE) is recommended (Shott 2000:725-38). The diagnostic elements from OBP, such as rims and decorated areas, give an EVE of at least 123 for the assemblage. As diagnostic elements do not simply equal vessels, significantly more vessels were probably imported to OBP, and the selected area of excavation moreover represents only a sample of activities and therefore ceramic counts from the site.

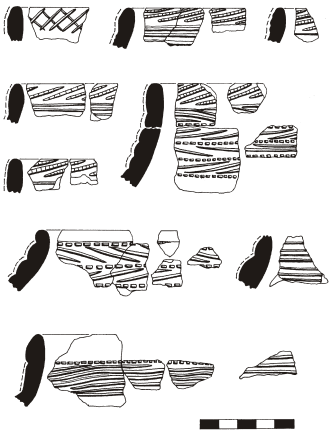


Fig 1 Happy Rest

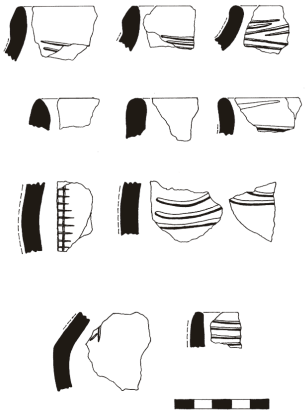


Fig 2 Happy Rest

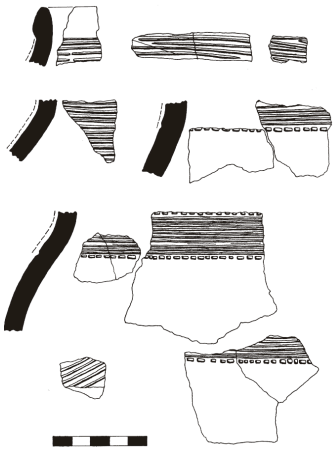


Fig 3 Happy Rest

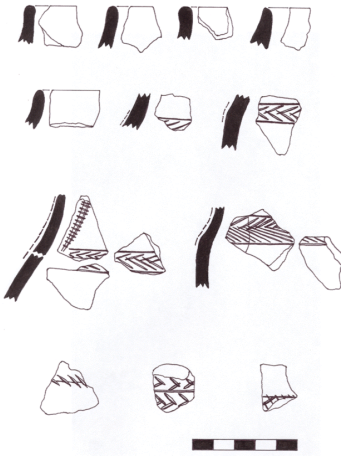


Fig 4 Eiland

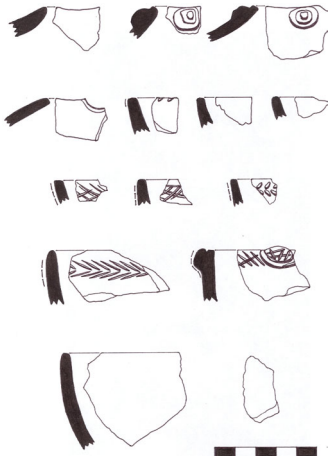


Fig 5 Eiland

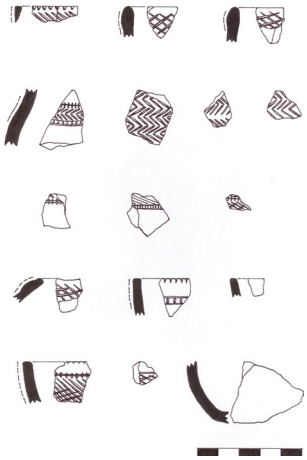


Fig 6 Broadhurst

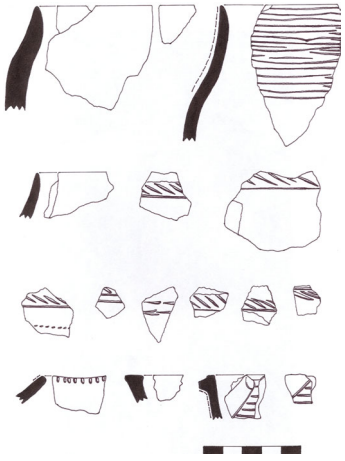


Fig 7 Icon

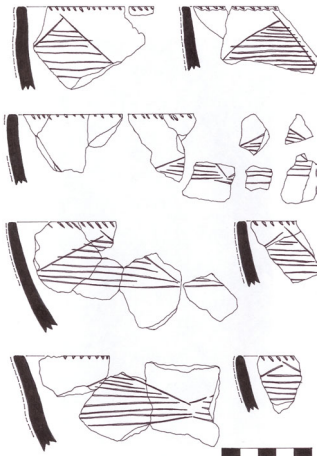


Fig 8 Icon

Fig. 7.1 Iron Age pottery from OBP. Scale 0-50 mm. See Appendix G for a more detailed description.

The following table lists the number of decorated sherds at OBP that belong to distinct facies as recovered from the different layers and the EVE:

Number of decorated vessels per layer at OBP						
Layer	Bambata	Happy Rest	Eiland	Broadhurst	Icon/Moloko	Total
1	14	7	3	4	2	30
2	12	6	3	3	2	26
3	4	1	5	3	7	20
4	3	5	1	2	6	17
5	6	15	2	1	7	31
6	4	1			2	7
7		1	1			2
8						0
9	1		1			2
10					1	1
Total	44	36	16	13	27	136
%	32.4	26.5	11.8	9.6	19.9	100.0
EVE	31	26	26	16	24	123
%	25.2	21.1	21.1	13.0	19.5	100.0

Note:
- In the total vessel count undecorated rim sherds were included for the EVE
- The lesser vessel counts result from the distribution of sections of a specific vessel across layers (as all different vessels for each layer were counted)

Whereas ceramics of different style were doubtless introduced onto the site, the depositional events do not separate out clearly. A comparison of vessel counts per layer against the established sequence does not correlate as the actual vessel distribution reflects a scatter of all ceramic facies throughout the upper five excavated layers. Those recovered from the first five layers, i.e. in the first 300 mm, comprised more than 90% of the assemblage, with the remaining less than 10% most probably displaced and intrusive up to layer 10, that is down to about 550 mm.

At any rock shelter various site formation factors, and especially anthropogenic behaviour, result in the redistribution of material across the floor and also vertical displacement of sherds into older deposits (Robinson 1966:83). The fact that the different pottery expressions apparently do not conform stratigraphically with the ceramic succession as set out above, can be ascribed to site formation processes active at OBP, as discussed in chapter 3. The most recent activities of European hunters, farmers, and also domestic stock who sheltered here, resulted in the mixing of some occupation levels, downward migration of artefacts, and an apparent inconsistency in dates. This is consistent with observations at shelter and cave sites where subsequent visits by groups resulted in reworking of deposits and downwards migration of especially larger objects (Yellen 1977; Parkington & Mills 1991; Barham 1992; Galanidou 1997; Mitchell *et al.* 2006).

In the following table the distribution and frequencies of all the ceramics according to layers within the different squares of the grid are apparent. The aggregate mass of sherds per layer is also indicated. In chapters 3 and 8 the distribution patterns of pottery are discussed in more detail.

Frequencies of ceramics

	S	1	2	3	4	5	6	7	8	9	10	Total	Mass (g)
A1	3	11	23	5	3		1				1	47	244.00
A2	12	10	12	3			1					38	243.00
A3	3	7	2	3		1						16	100.00
A4	5	8	14		1	1						29	107.00
A5	4	7	3			2	1					17	64.00
B1	4	32	26	25	2	2		1				92	1086.00
B2	4	18	5	1	4		3					35	250.05
B3	6	4										10	20.00
B4	2	10	2	2	1							17	77.00
B5		2										2	3.00
C1	4	10	19	25	6	4				2		70	430.00
C2	10	6	5	13	2	4				1		41	301.00
C3	6	10	2									18	93.00
C4	4	4	13	2	1							24	105.05
C5	1	1	12	1	3					2		20	84.05
D1	1	9	3	59	59	41	22	1	2	1		198	1615.00
D2	5	23	5	18	26	32	3	1	2			115	768.00
D3	7	15	11			1				1		35	117.00
D4	5	17	1		5	1				1		30	91.00
D5	1	7	5			1						14	40.00
F1	5	4	2	16	29	10	4					70	598.00
F2		9	16	22	5	4	1			3		60	356.00
F3	1	5	2									8	32.00
F4	1	3	5	1	4							14	43.00
F5		10	7	4						2		23	59.00
Total	94	242	195	200	151	104	36	3	4	13	1	1043	6926.15
%	9.0	23.2	18.7	19.2	14.5	10.0	3.5	0.3	0.4	1.2	0.1	100.0	

From the above it is evident that the bulk of the ceramic sample originated from the upper layers, which relate to the most recent utilization of the site. The frequencies of all other classes of material conversely show a progressive increase towards the deeper levels. The

data for the lithics and non-lithics indicate that the extensive utilization of the shelter over a very long time changed markedly after other groups started to move into the region. There seems to be a demographic shift according to which the shelter was intermittently used and then only by smaller groups. These aspects are discussed more fully in chapter 3, which contains data on the lithics, and chapter 6, in which the non-lithics are examined.

The next table illustrates the distribution of the ceramics across the excavated area of the living floor. The bulk of the ceramics, namely 73.4%, clustered in Zone 1, which comprises the squares numbered 1 and 2 in the grid (see also chapter 3 for a motivation of the threefold zonal division of the grid in view of the findings from the excavations). The total for the shared, open space (a combination of Zone 1 and Zone 2) is 81.7%. This patterning corresponds with the production activities that generated lithics and non-lithics as well as large quantities of waste materials through tool manufacture. Zone 1, which abuts the talus, shows much higher volumes when compared with other areas.

Total number of ceramics in various zones of the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
A	47	38	16	29	17	147
B	92	35	10	17	2	156
C	70	41	18	24	20	173
D	198	115	35	30	14	392
F	70	60	8	14	23	175
Total	477	289	87	114	76	1043
%	45.7	27.7	8.3	10.9	7.3	100.0

 open shared space

 private inner space

The frequencies of the mass aggregates of the ceramic sherds parallel this trend as 85% of the total mass of the ceramics originates from Zone 1. This trend was evident even before the analysis of the recovered material was undertaken, as the large and thick-walled sherds were mainly found within this section of the excavated area.

Total mass (g) of pottery in various squares of the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Mass (g)
A	244.00	243.00	100.00	107.00	64.00	758.00
B	1086.00	250.05	20.00	77.00	3.00	1436.05
C	430.00	301.00	93.00	105.05	84.05	1013.10
D	1615.00	768.00	117.00	91.00	40.00	2631.00
F	598.00	356.00	32.00	43.00	59.00	1088.00
Total	3973.00	1918.05	362.00	423.05	250.05	6926.15
%	57.4	27.7	5.2	6.1	3.6	100.0

 open shared space

 private inner space

At OBP at least 31 Bambata-type vessels could be reconstructed. The analysis does not include any material from Mason's investigation at OBP as his pottery sample is not available. The conventional use of the term derives from the ceramic assemblage described from the type site, Bambata Cave in Zimbabwe. However, there is such diversity in associated assemblages that Bambata is probably an inadequate umbrella term. Current terminology for similar assemblages includes thin-walled ceramics, herder pottery, EIA Bambata, and Bambata A and Bambata B. The ceramics lack any antecedent (Huffman 1994:3, 2005:66) and form part of the earliest pottery expressions in the southern regions of sub-Saharan Africa. Bambata ceramics are present in deposits that date to the 1st and up to the 5th century AD. The characteristics of and hypotheses as to the antecedents of Bambata ware are discussed in more detail under 7.3.

The Happy Rest facies of the Western Stream relates to the movement of the first EIA farmers into the region, and is represented by 26 vessels at OBP (see Fig. 1 and Appendix G:figs 1-3). The pottery is characterized by large, thick-walled recurved jars with comb-stamped or incised bands of hatched or herringbone motifs placed below the rim and in the neck of the vessels. The facies was first identified on both sides of the Soutpansberg mountain range at Happy Rest and Klein Afrika (Prinsloo 1974), and in the western Waterberg at Diamant by Jan Aukema (Huffman 1990). Dates for these assemblages range from the 4th century to the 8th

century AD. The seemingly negative evidence for the Diamant facies at OBP is explained above.

Eiland ceramics, which are later in the sequence are followed by a final Broadhurst facies of the Western Stream and are represented by 26 and 16 vessels respectively. These facies mark the Middle Iron Age at the shelter. Eiland ware is generally thinner with more fine motifs than the Happy Rest and its immediate successor, Diamant (Fig. 1 and Appendix G, figs 4-5). Predominant herringbone and cross-hatching motifs, with red ochre colouring, are placed below the rims and necks of slightly necked jars. Eiland ceramics are widely distributed across the central trans-Vaal plateau, extending from the escarpment above Tzaneen (Mpumalanga) to eastern Botswana, with the southern boundary being the Gauteng Magaliesberg mountain range. Most Eiland dates bracket between the 11th and 13th centuries AD (Evers & Van der Merwe 1987). It is regarded as the final expression of the EIA. Examples of this facies are present at most LSA shelter sites in the Waterberg in levels that similarly date from the11th to 13th centuries AD (Van der Ryst 1998a:24).

Broadhurst is characterized by very fine herringbone and cross-hatching motifs bordered by stepladder arches on slightly necked jars with thickened rims (see Fig. 1 and Appendix G:fig. 6). Ochre was used as infilling for panels and to burnish the inside of bowls. This facies was first identified by Denbow (1981:66-74) at Broadhurst in eastern Botswana where it was dated to the early 15th century AD. A relatively later survival for the Eiland/Broadhurst tradition of the EIA after the 13th century AD in the Waterberg is apparent, analogous to a late continuation for Broadhurst facies in western Botswana (Evers 1988:129; Boeyens 1998:231-4; Van der Ryst 1998b:52, 1998b:6:map2.2(a), 7:map2.2(b), 96-100).

At OBP some 24 vessels of the early Late Iron Age (LIA) Icon ceramics demonstrate increasingly complex demographics resulting from the presence of diverse groups in the region by this time (see Fig. 1 and Appendix G:figs 7-8). The facies is characterized by multiple bands of incised and hatched motifs, commonly interspersed with graphite. The14th-century Icon facies from the northwestern Limpopo Province marks the beginning of the Moloko Tradition ceramic style (Hanisch 1979). Similar early dates for Early Moloko expressions in Botswana may suggest an introductory route from that region, but this will only be resolved as more data from other localities become available (Boeyens 1998:234).

Several of the Bambata and Icon sherds display red ochre staining (see chapter 5 for a discussion on the use of earth pigments at OBP). The application of red ochre as a slip or medium for burnish on the Eiland vessels before they were fired is clearly different from the ochre staining found on some of the Bambata vessels and Icon bowls. Ochre staining most probably resulted through use as paint-holding vessels. Ochre is universally used as a colouring agent by all potters (Lawton 1967:8) (see also chapter 5 for a discussion on earth pigments).

Some of the ceramics from OBP were certainly obtained from indigenous farmers at the nearby villages settlements. Research by Aukema demonstrated the presence of such villages in the western Waterberg (unpublished notes). During his investigation of the Motlhabatse drainage basin EIA phase 1 and phase 2 settlements were excavated at the site of Diamant 228 KQ, which lies at a distance of less than 50 km from OBP. Western Stream Happy Rest ceramics from the first phase at OBP parallel the EIA Klein Afrika and Happy Rest pottery of the Soutpansberg, as indicated above. The ceramics from the somewhat later phase 2 have affinities with RU1 from Rooiberg near Bela-Bela/Warmbaths (Huffman 1990:117). Aukema also recovered phase 3 ceramics typical of Eiland facies from a site near the Motlhabatsi and Limpopo confluence.

The pottery assemblage from Diamant is extensive, and there is also evidence for metal working. Cattle, sheep and some of the earliest identified remains for dogs in the trans-Vaal comprise the domestic faunal sample. Game animals are abundant and include hartebeest, wildebeest, zebra, buffalo and others (Huffman 1990:117). Rare glass beads from Diamant mark some of the earliest occurrences of this trade commodity. The fauna, flaked stones, numerous OES beads and fragments as well as bone tools and grooved stones with large-sized grooves, show a subsistence pattern that still relied extensively on resources found within the natural environment. Early stages of farming and pastoralism contained many elements familiar to hunter-gatherers, and in fact complementary to their own economics (Garcea 2003:122). This probably contributed to amenable and symbiotic relationships, which generally mark early stages of interaction (Mazel 1986a, 1986b,1989a, 1989b; Van der Ryst 1998a, 2003; Sadr 1999, 2002, 2003a, 2005; Hall 2000; Hall & Smith 2000; Van Doornum 2005).

There is no marked patterning in the distribution of the different facies across the grid at OBP. Still, the D-blocks do show a slight emphasis in volume, as they contain 37.6% of all ceramics. The distribution of haematite shows a similar pattern with higher numbers in the D-blocks.

Total number of ceramics according to the Y-axis of the datum-line on the grid

	A	B	C	D	F	Total
Square 1	47	92	70	198	70	477
Square 2	38	35	41	115	60	289
Square 3	16	10	18	35	8	87
Square 4	29	17	24	30	14	114
Square 5	17	2	20	14	23	76
Total	147	156	173	392	175	1043
%	14.1	15.0	16.6	37.6	16.8	100.0

In view of the debate that centres on the origins and producers of Bambata, the distribution of the 50 sherds from 31 vessels of this facies was plotted onto the grid. The UCA shows the largest number to cluster in the private space (Zone 3), which fronts onto the back wall of the shelter. A total percentage of 54% for decorated Bambata in this area comprises 36% from the number 4 squares, which contains materials from the space across fireplaces, and 18% in the number 5 squares which represent the core of fireplaces against the wall. This may be significant as this area represents the loci of the private space. The smallest number of sherds (14%) is apparent in the middle area, namely Zone 2, whereas Zone 1 on the talus contains 32% of all Bambata, giving a total of 46% for Bambata in the shared, open space.

Total number of Bambata ceramics, including undecorated sherds

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
Total for grid	8	8	7	18	9	50
%	16.0	16.0	14.0	36.0	18.0	100.0


open shared space


private inner space

7.2.1 Indigenous farmer artefacts

The remains of other cultural material relating to indigenous farmers are scarce. A single cowrie shell in D3.8 may be associated with two modified Bov I metacarpals coated with ochre and an OES disk recovered from the preceding layer D3.7, Quadrant B. Two pieces of metal slag were retrieved from B1.1 and D2.3 respectively. Eleven glass beads and a single copper bead (F5.10) were found. Whereas the numbers are too low to be statistically significant, the distribution of the majority of glass beads shows some patterning. Accordingly, the most recent level contains 63% of the beads, with 27% and 9% in layers 5 and 7 respectively.

Frequencies of glass beads

	S	1	2	3	4	5	6	7	8	9	10	Total
A5						1						1
D1								1				1
D2						2						2
D5	2	2										4
F3		1										2
F5		1										1
Total	2	5				3		1				11
%	18.2	45.5	0.0	0.0	0.0	27.3	0.0	9.1	0.0	0.0	0.0	100.0

The distribution pattern indicates some concentration of glass beads in the more private area against the shelter wall where the main fireplaces occur. The rest of the beads are more evenly spread out across the various activity zones. It is, however, interesting to note that the D-squares, which yielded significant quantities of ceramics (and also the highest densities for pigments), correspondingly contained 45% of the bead count.

Total glass beads in various zones of the grid

	Square 1	Square 2	Square 3	Square 4	Square 5	Total
A					1	1
B						0
C		2				2
D	1				4	5
F			2		1	3
Total	1	2	2		6	11
%	9.1	18.2	18.2	0.0	54.5	100.0

 open shared space

 private inner space

Total glass beads according to the Y-axis of the datum-line on the grid

	A	B	C	D	F	Total
Square 1				1		1
Square 2			2			2
Square 3					2	2
Square 4						0
Square 5	1			4	1	6
Total	1		2	5	3	11
%	9.1	0.0	18.2	45.5	27.3	100.0

The glass beads can be associated with periodical use of the shelter by indigenous farmers, but also to goods obtained by hunter-gatherers through exchange or barter. The cowrie shell and copper bead from the lower levels were probably acquired through direct trade with neighbouring communities or exchange with other hunter-gatherer clusters. Exchange networks, which involve delayed, but balanced, reciprocity founded on a set of relationships, are prominent in the social and economic strategies of most hunter-gatherers (Bleek & Lloyd 1911; Marshall 1976a; Lee 1979; Silberbauer 1981; Wiessner 1982, 1992; Wadley 1987; Guenther 1996a; Mitchell 1996, 1997; Widlok 1999b). In the Kalahari, veld products are exchanged for commodities such as ceramic vessels, glass beads, cowrie shells, copper beads, iron bangles and other materials for which there is evidence in the archaeological

record (Schapera 1930:94; Denbow 1984:182, 1986:14, 1990:193-76). Whereas the Ju/'hoansi do not trade among themselves as they consider the process undignified and that it may result in bad feelings, they do enter into trade alliances with their indigenous farmer neighbours (Marshall 1976a:306; 1976b:365-6). Exchange and trade, although not as formally institutionalized as reciprocity partnerships (Widlok 1999b:80), result in the dispersal and redistribution of, in particular, highly valued commodities:

> They [the !Kung] mentioned that, in the past, distant *hxaro* ties had given them access to desired trade goods, such as metal and beads ... Thus, through *hxaro* exchange, !Kung participated in the broader trade network ... Secondly, !Kung engaged in *hxaro* relationships with other San only ... Exchange of goods with agropastoralists such as the Tswana, Herero or "Goba" took the form of more balanced and immediate trade (Wiessner 1992:213).

Some of the early ceramics from OBP were doubtless passed on or traded through similar processes when new ethnic entities moved into the region at a time when the shelter was still exclusively used by hunter-gatherers. Indigenous farmer ceramics are pervasive at shelters in the Waterberg. Some painted shelters with little or no occupation debris contain stone cairns, grindstones and clay pots, which have been attributed to rainmaking rituals performed at these localities (Aukema 1989:70-2). Some of the pots were buried up to their rims within cairns, buried upside down beside an overturned lower grinder, or merely found in context with grinders (Aukema 1989:70). Such practices suggest an association between rainmaking ceremonies and the importance which indigenous farming communities attached to the religious expertise of hunter-gatherers as discussed in chapters 2 and 6. They are perceived to be close to nature with power that includes control over rain (Van der Ryst 1998a, 2003).

Research has shown that the use of rock art locales for rain control and other rituals is ubiquitous (Schlömann 1896, 1898; Dornan 1917:49; Aukema 1989:70-2; Jolly 1995:68-80; Ouzman 1995:55-67, 1996:31-59; Hammond-Tooke 1998:9-15, 1999:128-32; Kinahan 1999:336-57; Hall & Smith 2000:30-46; Peters 2000:13-104; Van Doornum 2005:3-4, 15-6; Schoeman 2006:255-7). At the painted site of Domboshawa in Zimbabwe rain production by indigenous farming communities comprised the performance of rituals where offerings were deposited and participants waited — often for a considerable time — for signs of acceptance (Burkitt 1928:119-21). Only under the right conditions will wind draw up smoke from a lit fire through a fissure, and the smoke emanating from the granite dome of the hill confirmed that the ceremony was sanctioned. The belief that smoke from rain medicine draws clouds is pervasive in rain control rituals (Schoeman 2006). Since rock art documents the ritual life of

hunter-gatherers, places where hunter-gatherers lived and painted are perceived as repositories of ritual power.

Direct evidence for the ritual utilization of rock art shelters in the Waterberg by local communities is found in a description of rainmaking ceremonies as narrated by missionary Schlömann (1896:220-1) and discussed in chapter 2. Similar practices were still adhered to during the early part of the 20th century on the Waterberg Plateau where indigenous farming communities continued to perform rain production rituals at shelters. One such ceremony was recounted by one of the participants who was a young child at that time, and his account is substantiated by surface material containing large quantities of sherds from broken vessels deposited in front of the paintings (Van der Ryst 1998a:12). According to the ethnography a vital part of medicine was often the addition of human flesh and fat (Aukema 1989:71). This was certainly the case when body parts of three Boers killed in a 1901 skirmish in the Waterberg were used for rainmaking medicine and other purposes. The medicine man of the Langa Ndebele, who was the official rainmaker and keeper of human remains, stored the pot with medicine in a rainmaking shelter where other body parts were also subsequently found and used as exhibits in court (Jackson 1982:46). I discussed similar practices in chapter 2, where an account is related of exhumation of bodies, and how magicians would dispose of their dead in the desert or the Lephalala River to prevent drought (Schlömann 1898:70).

The ritualization of painted shelters can account for some of the excavated ceramics as pots were used to prepare and hold medicine and other liquids for ceremonial purposes. The many finger paintings found at OBP, and at virtually all painted sites in the Waterberg are ascribed to indigenous farming communities that visited the shelters for ritualized behaviour (Roberts 1916:17-22; Rudner & Rudner 1970:103 and Plate 31 and 32; Boshier 1972:206-8; Prins & Hall 1994:174; Van der Ryst 1998a). According to oral testimonies white paintings were made in a cave by initiates after conclusion of the ceremonies (Rudner & Rudner 1970:103; Boshier 1972:206-8). This is confirmed by the particular contents of the paintings, which depict animals known to feature in initiation ceremonies (Eastwood *et al.* in press).

Indigenous farming communities deal more conservatively with expanding frontiers (Kopytoff 1987:16-7; Reid & Segobye 2000:65). Hunter-gatherers are more flexible, but also innovative, thereby enabling individuals and bands to enter into alliances with new groups moving into

their territory (Widlok 1999b:131). Their perceived role as ritual specialists probably resulted from early interrelationships with African farmers when the long-established hunter-gatherers used their power as original owners of the land and their ritual expertise to negotiate their place on the landscape. Such beliefs associated with their primal role in the land still prevail in the Kalahari where their indigenous farmer neighbours commonly employ the healing spiritual powers of hunter-gatherers (Katz *et al.* 1996:12; Guenther 1999:88-90). Given their generally low status in interethnic politics today, it serves to emphasize the ambivalency in which hunter-gatherers were always held. It is therefore assumed that all of the former practices contributed to the import of ceramics to OBP, and the bulk of the ceramics is ascribed to the intermittent use of this locality for whatever reasons by various other groups over time.

In the following section the data that relate to the controversies around Bambata ware and the models used to explain the origins and identity of the makers of these ceramics as well as more detail on the Bambata assemblage from OBP are considered.

7.3 EARLY THIN-WALLED CERAMICS: THE ARCHAEOLOGICAL EVIDENCE

7.3.1 The significance of thin-walled ceramics

In a recent synthesis of the archaeology of southern Africa by Peter Mitchell (2002:427), some twenty focal topics identified for future research include '[d]etermining the significance and associations of Bambata ware'. Bambata generally occurs in low densities and considerably fragmentary form in LSA contexts in association with lithics, bone tools and also metal beads and slag at both cave and open sites, but also some village settings in Botswana, Namibia, Zimbabwe and South Africa (Wells 1939; Schofield 1940, 1948; Bernhard 1963; Cooke 1963; Robinson 1966; Walker 1983, 1994, 1995a; Huffman 1994; Jacobson 1984; Smith & Jacobson 1995; Wadley 1996a; Reid *et al.* 1998; Van der Ryst 1998a; Hall & Smith 2000; Vogelsang 2002; Vogelsang *et al.* 2002; Lenssen-Erz & Vogelsang 2005; Huffman 2005; Mitchell & Whitelaw 2005).

The Bambata from OBP contains all the elements that generally accompany similar assemblages (see Fig. 2 and Appendix G:figs 9-11). It is one of only a few representative excavated assemblages in southern Africa and can potentially contribute towards resolving the ambiguous position of Bambata within the LSA and EIA. Differences in vessel shapes, rim profiles and range of decorations do not signify a common source for the various 'Bambata'

ceramic assemblages despite common attributes, such as vessel thickness, dense decorative motifs and crenellation. At some localities the first appearance of ceramics corresponds with the presence of domestic stock. Sites that contain Bambata ceramics appear to predate, and overlap with, the arrival of iron-working communities (Reid *et al.* 1998:81).

The identity of the manufacturers is still debated. Whether such assemblages relate to farmers, herders, or hunter-gatherers with ceramics and domestic stock acquired from farming communities to the north through interaction networks, are not yet fully clear (Jacobson 1984; Denbow 1986; Huffman 1994, 2005; Fish 1995; Smith & Jacobson 1995; Reid *et al.* 1998; Sadr 1998, 2005; Hall & Smith 2000). The very wide distribution of mainly small assemblages may represent movement of exotics over long distances, as evidenced by, for example, marine shells on inland sites (Mitchell 1996:58). Pots certainly featured in reciprocity among the southern San, as a /Xam man mentioned the gift of a pot in exchange for a kaross (Bleek & Lloyd 1911:374-5; Deacon 1996:263). In the light of stylistic diversity it has also been proposed that Bambata ware was not passed on by migrating groups, but through diffusion or transfer of new ideas and technologies from one hunter-gatherer band to the next (Reid *et al.* 1998:92-3). The linguistic data and quick dispersal rate of sheep and pottery do not particularly fit such a diffusion (Walker 1983:90).

The findings at OBP greatly expand the data base on Bambata and may help to clarify the origins and cultural affinities of Bambata. Although the archaeology of pastoralism is difficult to isolate, the location of OBP along one of the proposed southward routes along which domestic stock and foods entered the sub-Saharan region (Barnard 1992:32-6) certainly presents scope for interactive situations. The debate on the origins of Bambata can also help to resolve the cultural identity and temporality of the distinctive geometric rock art tradition assigned to early herders (Ouzman & Smith 2004; Smith & Ouzman 2004; Eastwood & Smith 2005; Lenssen-Erz & Vogelsang 2005).

We now turn to the archaeological data for more detail on Bambata. The discussion refers to the spatial distribution of the ceramics and, secondly, the dating and context of such assemblages. The distinct stylistic and technological characteristics are subsequently reviewed, and thereafter the specific attributes of the OBP sample.

7.3.2 Distribution and research history of Bambata

The spatial distribution of Bambata-type ware over such a broad area as well as the dates established for the introduction of ceramics and for sheep up to their eventual arrival in the southernmost region of Africa, argues for a rapid spread (Wells 1939; Schofield 1940; Bernhard 1963; Cooke 1963; Robinson 1966; Walker 1983; Smith 1990, 1993a, 1993b, 1998a, 1998b; Sadr & Smith 1991; Huffman 1994, 2005; Sealy & Yates 1994; Smith & Jacobson 1995; Wadley 1996a; Reid *et al.* 1998; Van der Ryst 1998a; Hall & Smith 2000). Bambata ceramics were first discovered in 1919 at the eponymous cave in the Matopos (Jones 1949). Renewed excavations by Jones in 1939 yielded a larger sample, but the assemblage was only described in1940 by Schofield (361-371). It is clear that Jones (1949:64) immediately noticed the discrete nature of the ceramics:

> At the top of the ash-layer at Bambata and elsewhere, potsherds are found in some numbers in apparent association with the Wilton Culture. That this association is no more than apparent is fairly obvious from the fact that this pottery indicates an advanced stage of development, since it is not only highly decorated with incised lines arranged in definite patterns but includes such refinement as a spout. It is quite unlike the simple pottery of the later Wilton people which has been found at the Cape.

Sites with similar ware were originally confined to Zimbabwe (Wells 1939; Cooke 1963; Robinson 1966; Walker 1983). Many finds originated from the Matopos, and some isolated sherds were recovered from a scattering of other localities, including an open site on a stream bank (Robinson 1961:84). Subsequently, Bambata was also found in Botswana at shelters (Reid *et al.* 1998), on open sites in the region of the Boteti River and on Sowa Pan (Denbow 1986), or in a village settlement, Toteng, in western Botswana near Lake Ngami (Huffman 1994), and in Namibia (Smith & Jacobson 1995; Vogelsang *et al.* 2002:120-1).

In South Africa spatial distribution of Bambata includes shelter localities in the Limpopo Province, such as OBP, Goergap and Ongelukskraal in the Waterberg (Van der Ryst 2003) and at Little Muck, Saltpan, Buffelskom and Balerno Main Shelter in the Soutpansberg (Hall & Smith 2000; Van Doornum 2005), Jubilee Shelter in the Magaliesberg, Gauteng (Wadley 1987) and herder sites in the southern and southwestern Cape (Sadr & Smith 1991). Bambata from Jubilee Shelter and the Waterberg is the southernmost occurrence in LSA contexts (Mitchell 2002:233).

All the former localities produced comparatively small assemblages, with the exception of the Matopos Bambata sites (Walker 1988) and Tshangula (Cooke 1963), and also the precolonial herder sites at Kasteelberg in the southwestern Cape (Sadr & Smith 1991). Reid *et al.*

(1998:87) therefore argue for a distinction between sites where Bambata was used and sites that contain isolated, ostensibly collected and/or gift-exchanged, sherds.

7.3.3 Dates and contexts for Bambata ceramics

On current evidence Bambata pottery was present in Zimbabwe by about 200 BC. In 1980 excavations at Bambata Cave were again resumed, producing a date of just more than 2100 BP associated with a stone tool assemblage that contained segments. Bone tools, OES beads and fragments of water containers, a copper bead, ovicaprid teeth and skeletal elements as well as more ceramics, were also recovered (Walker 1983:88). The bulk of diagnostic sherds recovered from this locality is estimated to represent at least 35, but possible more than 45 vessels (Walker 1983:88-9).

The Botswana sites with representative components of Bambata generally predate AD 500, with dates ranging from the first to the fourth centuries AD (Denbow 1986:8; Reid *et al.* 1998:83-5). Low numbers of Bambata ware in association with lithic scatters are found at open and frequently deflated sites near Sowa Pan on the Boteti river and also in small shelter sites, such as Tuli Lodge (Walker 1983:88-92; Denbow 1986:7-8; Reid *et al.* 1998:86). Such outlying occurrences could be evidence for indirect hunter-gatherer trading networks (Walker 1983:90).

At Toteng the data from levels with Bambata signal people with a lithic technology and pottery that hunted and fished extensively, yet also herded livestock on the edge of Lake Ngami (Reid *et al.* 1998). Wetland resources and a rich faunal assemblage associated with high water levels and a great expanse of the lake at this time are reflected in the assemblage (Robbins *et al.* 2005:672-3). A recent set of accelerator mass spectrometry (AMS) dates of approximately 2000 years ago on cattle and sheep remains is not directly associated with the Bambata levels (Huffman 2005:76). Sadr (2003a:207) suggests that the assemblage probably represents hunters-with-sheep. In a recent reevaluation of Bambata, Huffman (2005:66) concedes that the data from Toteng do not support a settled village lifestyle.

Pottery is found at most Namibian sites well in advance of the introduction of domestic stock (Kinahan 1991:43, 47). The Namibian pastoral pottery is said to be stylistically derived from earlier introduced ware, underscoring apparent continuity in the transition to herding (Kinahan 1996:106). Whereas the move to a pastoral way of life within the last 1000 years manifested

in changing land use and settlement patterns, some hunting and herding economic practices remained constant (Kinahan 1996:106). Herding is only one component of a subsistence economy, and pastoralist ceramic traditions recently identified in regions to the north are accompanied by different economic practices (Garcea 2003; Mitchell & Whitelaw 2005).

At Geduld in Namibia an overlay of domesticates and pottery onto a hunting and gathering economy is ascribed to hunters on the periphery of a pastoralist society (Smith & Jacobson 1995:3-14). Domestic stock and ceramics were certainly present at Geduld by 1800 BP, whereas lower levels yielded sheep–size medium bovids and a dung layer (Sealy & Yates 1994:59; Smith & Jacobson 1995:6). Analogous dates of 1790 ± 80 BP were obtained on both charcoal and dung. The fine quality and the limited numbers of rippled rim burnished pottery argue against a local development (Smith & Jacobson 1995:8, 13), so that vessels were presumably obtained through exchange networks (Kinahan 1996:106). The co-occurrence of pottery with increased production of OES beads at some sites may reflect barter (Kinahan 1991:43). Low site numbers in the Kaokoland area correspond with an ephemeral LSA presence. However, both contemporaneous stone artefact industries contain ceramics (Vogelsang *et al.* 2002:120-1). The very few painted localities feature engravings and paintings of mainly non-representational images and some handprints — themes now mainly attributed to herders (Vogelsang *et al.* 2002:119; Lenssen-Erz & Vogelsang 2005:54-62).

In the Soutpansberg, Bambata and rippled rim pottery from deposits in the Salt Pan sequence are assigned to a herder or pastoralist-forager horizon, followed by a farmer phase with Happy Rest ceramics (Hall & Smith 2000:33). The three rock art expressions in the painting sequence for this region provide additional support for a herder presence through the many schematic and geometric images accredited to a herder population (Ouzman & Smith 2004; Smith & Ouzman 2004; Eastwood & Smith 2005). Examples of rippled rim ware were recovered from two sites on the Waterberg Plateau, again in association with lithics. The Goergap shelter yielded only one sherd in LSA levels, which also contained Eiland facies ceramics and the remains of domestic stock. The two conjoining sherds from Skeurkrans/Ongelukskraal across the river from Goergap are associated with a date of approximately AD 233 (Pta-5161). The hilltop site of Skeurkrans was settled by indigenous farmers, and the lithics and rippled rim pottery underlay a fully developed IA horizon (Aukema, Boeyens & Van der Ryst 1989, field notes; Van der Ryst 2003).

At Jubilee Shelter in the Magaliesberg several decorated and more than 100 thin-walled undecorated Bambata sherds were recovered in Post-Wilton levels with dates that calibrate to AD 225 and AD 561 respectively (Wadley 1996a:205, 209). There the scraper-dominated industry from the underlying stratum continued in the pottery-bearing levels, but with an increase from 48% to 90% relative to other backed tools (Wadley 1986a:107, 1996:210). Decorations include stamped impressions on the neck and rim and incised cross-hatching. OES beads were more numerous and fragments of soapstone from lithic rings and rim sections of bowls were recovered from these levels (Wadley 1986a:107). No Bambata villages have been found in the area (Wadley 1996a:210), which suggests that the ceramics were probably obtained from herder or farmer communities along trade and exchange routes. The co-occurrence at Jubilee Shelter of Bambata ceramics with quartz crystals and a MSA point may mark a cache with ritual connotations (Reid *et al*. 1998:84).

Pottery was introduced into the southern and western Cape sites some 1900 years ago. At most inland localities insufficient diagnostic sherds from the earlier phases inhibit sequencing (Sadr & Smith 1991:107). Coastal sites likewise contain relatively low numbers of vessels that could be ascribed to the earliest two phases of a ceramic sequence established at the major herder settlement of Kasteelberg. At least six sites cluster among huge granite boulders on the prominent hill. Analysis of the large three-part stylistic sequence confirms that the earlier group has a low percentage of design elements, and then mostly incised and shell-edge stamped motifs around the lip and neck. Rim diameters signify relatively small pots. Vessels from the next phase are equally small, with incisions virtually absent from the mainly shell-edged decorations. Spouts are commonly found in both earlier phases, but larger, undecorated and spoutless pots mark the most recent assemblage (Sadr & Smith 1991:107-14).

7.3.4 Dates for domestic stock in Bambata contexts

Domestic animals were presumably introduced from the north several hundred years before the beginning of the IA, and ovicaprids in LSA contexts date around the beginning of the first millennium AD in Namibia and the Cape (Denbow 1986:3; Sealy & Yates 1994:58-67). Whereas the introduction of Bambata happens to coincide with the earliest appearance of domestic stock (and notably sheep) in Botswana as well as Zimbabwe and Namibia (Reid *et al.* 1998:82; Huffman 2005:76), the ceramics and sheep do not always co-occur. A review of

a small sample of direct dates for early sheep in southernmost Africa shows that the introduction of domestic stock and pottery in the Cape was also not contiguous (Sealy & Yates 1994:58-67). In this region early dates for ceramics are more common than early dates for sheep, with reliable dates for pottery at approximately 2000 BP at several inland and also Cape sites. Spoegrivier, on the northwestern coast, yielded the earliest date for sheep in the Cape at 165 BC to AD 13 (OxA-3682) (Sealy & Yates 1994:63). All the other direct dates are more recent at between AD 400 to roughly AD 800.

In Namibia pottery likewise predates sheep (Mitchell 2002:233). An almost synchronous arrival for sheep and cattle in Botswana at approximately 2000 years ago is suggested by AMS dates from the lower levels of refuse middens at Toteng 1 (Robbins *et al.* 2005:673-4). There is, however, not a direct relationship between those levels and Bambata (Huffman 2005:76). The dates are consistent with other data in which Botswana features as a route of introduction for domestic stock and also dispersals of herding peoples to the southernmost regions. The sequence of dates for sub-Saharan regions parallels movements on some of the courses along which domestic animals were presumably introduced, but more direct dates are needed to resolve this issue. The current data suggest repeated events for the introduction of domestic stock and also along different routes (Sealy & Yates 1994:58-67; Vogel *et al.* 1997:246-8; Smith & Ouzman 2004:499-526; Mitchell & Whitelaw 2005:215).

At OBP low numbers of ovicaprids (*Ovis/Capra*) (and most likely sheep), are found in levels with Bambata. From the generally fragmented nature of LSA fauna it is not always possible to distinguish morphologically between sheep and goat, e.g. at Bambata Cave (Reid *et al.* 1998:84). Early dates for goats in LSA assemblages are not direct dates, but are derived from archaeological contexts. Yet we do have conclusive early dates for goats in IA settings, e.g. in a deposit dating to the 4th century AD at Happy Rest, Limpopo (Plug 1996; Badenhorst 2002, 2006). Herders apparently acquired goats somewhat later from their indigenous farmer neighbours (Schapera 1930:292, 298; Epstein 1971(vol. II):258-61; Walker 1983:89). The Khoe word for goat, *biri*, likewise derives from the southwestern Bantu language group (Argyle n.d. 17-8; Barnard 1992:30).

There are also very few depictions of goats in rock art (Badenhorst 200:49). A small shelter close to OBP (Grootfontein 501 LQ; 2327DA Ellisras) with classic San and Late White art contains a finger-painted goat in black (Appendix N). Another panel from this locality — locally

known as the goat site — shows a typical San painting of a goat-like bovid. However, the identification was not confirmed by Ben Smith (site visit 2001). The animal in the image does share characteristics with the Landim goat in the head profile, and particularly the curvature of the short slender horns. The horns of the small Landim goats exhibit a moderate, sometimes forward, curvature and the ears are also short, erect, tubular and pointed (Epstein 1971(vol.II):257). Several species of Savanna goats were formerly known, including the Landim of which the range was documented to extend south of the Limpopo River, and the larger-sized Pafuri goat was also present in areas around the Limpopo (Epstein 1971(vol. II):256-7, plates 309-310). Faunal records at OBP and other LSA localities with Bambata confirm that sheep were not numerous during the early phases of interactive contact. However, sheep paintings are relatively common in the Waterberg, Soutpansberg and Zimbabwe (Jones 1949; Van Rijssen 1994; Eastwood *et al.* 1995; Garlake 1995; Eastwood & Fish 1996; Van der Ryst 1998a, 2003; Eastwood & Smith 2005).

7.3.5 Characteristics of Bambata-type ceramics

Bambata assemblages from different regions show similarities at a technological level, but with significant stylistic variations (Huffman 1994:7; Reid *et al.* 1998:93). Despite a close association with EIA African farmer pottery obvious differences, such as the finish and thinness of the vessels and high density of decoration motifs, set it apart. This distinct nature of Bambata ware is evident in Cooke's (1963:145) description of the relatively large sample from Tshangula Cave as 'well burnt, very thin in section and altogether far better pottery than much that is said to be later in date'. Vessel walls are between 4 mm and 6 mm of varying thickness within a single vessel (Huffman 1994:4).

Bowls and jars represent the most common vessel shapes, although Schofield (1948:40) also mentions beakers in the Bambata Cave assemblage. Vessel surfaces tend to be mostly dark or grey, but buff sherds are not uncommon. The use of temper is evidenced by fine grit inclusions, charcoal fragments or small cavities where organic inclusions carbonized during the firing process (Huffman 1994:4).

Extensive use is made of styli, comb-like tools and twisted cords in the stamped, incised and punctate decoration techniques with motifs of simple hatched bands, cross-hatching, some herringbone, multiple bands, triangles and alternating blocks of lines (Huffman 2005:62).

Graphite burnish is occasionally present, whereas many vessels retain some red ochre slip or may show staining or an ochre coating.

Rims may be thickened. A distinctive feature is the crenellated edge produced through the continuation of stamped or incised lines over the top of the rim section (Schofield 1940:363, 1948:40; Robinson 1963:3; Huffman 1994:4; Reid *et al.* 1998:83; Sadr 2003b:1-10). The fragmentary nature and absence of unbroken or near-complete vessels inhibit the reconstruction of vessel forms, and sometimes decorative layouts. One of the most complete examples was found in a refuse pit in association with Ziwa EIA ware at a small cave at Ziwa farm, Zimbabwe. Refitting of the 16 fragments with a texture and decoration similar to other Bambata, produced about a quarter of a vessel (Bernhard 1963:185; Appendix G fig. 12). As this vessel is the most complete available example of Bambata-type ware, it represents the core vessel in the design structure for the graphic representation and analysis of the OBP assemblage (Biemond 2006a).

Figure 7.2 illustrates Bambata ceramics from OBP, and includes the design structures for Bambata and for herder ceramics compiled by Biemond (2006a), based on Huffman (2000, 2002). The data are presented in more detail in Appendix G.

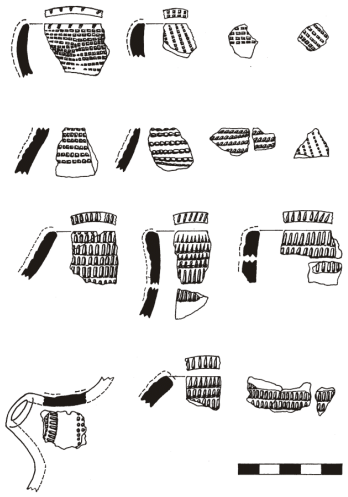


Fig 9 Bambata

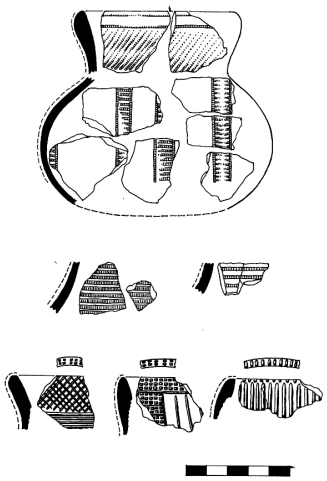


Fig 10 Bambata

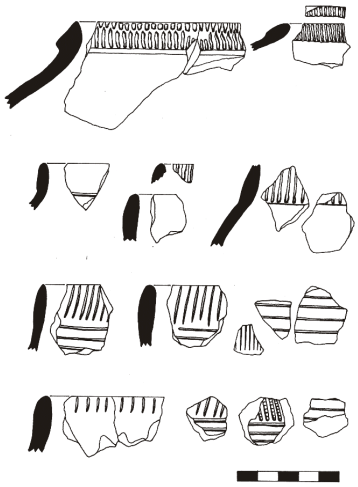


Fig 11 Bambata

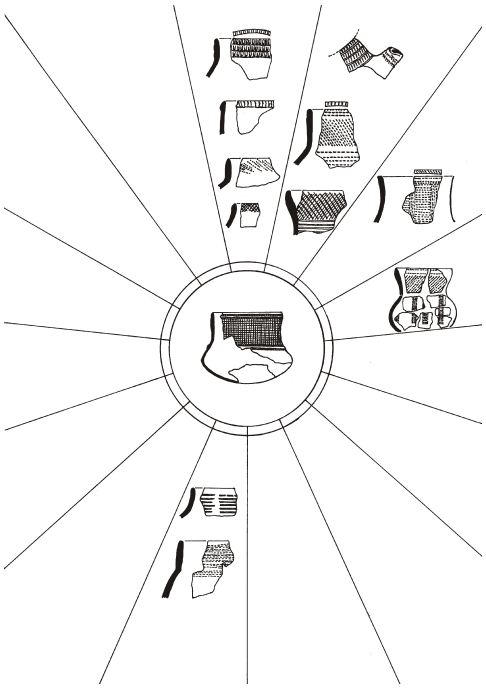


Fig 12 Bambata design structure (Biemond 2006a)

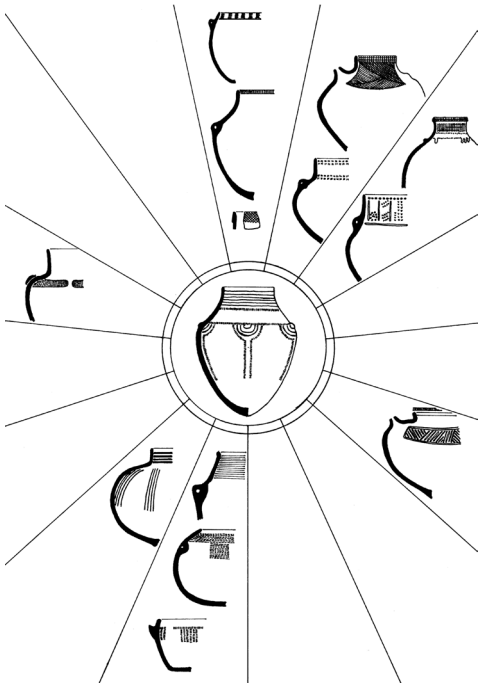


Fig 13 Herder/Khoekhoen design structure (Biemond 2006a)

Fig. 7.2 Bambata ceramics from OBP. Scale 0-50 mm. See Appendix G for a more detailed description.

7.3.6 Characteristics of the ceramics at OBP and the Waterberg Plateau

Bambata from the Waterberg shares some stylistic features with various assemblages in Namibia, Botswana and Zimbabwe. It corresponds in the layout of stamped and incised decorations, *appliquée* knobs (Geduld [N], Bambata and Tshangula Caves and Toteng [B], Kasteelberg [SA]); incised and burnished vertical lines on the rim (Geduld [N]); diagonal dotted lines (Mumbwa Cave [Z], Kasteelberg [SA]) and lastly, spouts (Geduld [N], Bambata [B], Kasteelberg [SA]).

An EVE of 31 vessels was established from the OBP Bambata sherds. The OBP Bambata assemblage contains mainly jars (Biemond 2006a). Some rim sections show the distinct crenellation. Rim profiles are consistent with Bambata from the type-site in Zimbabwe. Vessel walls are noticeably thin and well made with a smooth finish and exhibit mostly dark or grey surfaces with some buff sherds. The remains of a red slip are preserved particularly in grooves, thereby indicating that the pots were originally covered with a red slip. Ochre staining is evident on both inner and exterior surfaces. Sadr (2003b) examined the OBP assemblage and established various decorative categories based on technique and tools used for the motifs. These entail comb-stamping, comb-dragging, rippled rims, incisions, and heterogeneous pieces.

Comb-stamping is a defining element of virtually all Bambata assemblages. Those from Bambata Cave have mainly vertical lines, or a combination of vertical and horizontal lines. The preserved sections of the quite small sherds from OBP show predominantly horizontal lines, with infrequent diagonal ones and also a combination on the same sherd (Fig. 2, and Appendix G figs 9-10). Closely filled lines of dot impressions were made by using a denticulate comb. Similar fine comb-stamping from Toteng features 3 to 4 stamps per 5 mm (Huffman 1994:3). At OBP comb-stamped impressions were carried over on the lip in two vessels (Appendix G, figs 8-10).

At least three vessels feature comb-dragged motifs. The vessels are almost indistinguishable from examples at the Maleme Dam Shelter IV (Walker 1983; fig. 2.9 and others; Sadr 2003b:2). Very similar decorations were moreover found at both the Bambata and Broadlees caves in Zimbabwe (Walker 1983; figs 2.1; 2.10; Sadr 2003b:2). The spout from Bambata Cave (Schofield 1940:372, fig. 2 on plate; Sadr 2003b:2) compares well with comb-

dragged sherds and the spout from OBP (Appendix G, fig. 9).

At OBP the incised decorative elements common to these ceramics are mostly simple incisions, occasionally cross-incised, and carried on over the lip on three examples. Rim profiles are simple and mostly near vertical. Some of the larger sherds at OBP show a common motif of vertical or diagonally cross-incised lines that form a rim band, and with horizontally incised lines that cover the neck of the vessel (Appendix G, fig. 10). Again similar motifs of cross -incised rim bands occur at Bambata Cave, but with intersecting lines in the vertical and horizontal orientation (Walker 1983:fig 2:1, 2 & 5; Sadr 2003b:1). Other matching instances from this site have a rim band of diagonally cross-incised lines, bordered on the neck with rows of horizontally incised lines (Schofield 1940:fig. 11), and some in combination with comb-stamping (Schofield 1940:figs 5 & 8). Horizontal lines on the neck of the vessel combined with comb-stamping on the rim band in the OBP Bambata correspond with examples in the assemblage from Madiliyangwa Cave in the Matopos (Robinson 1966:fig 3; Sadr 2003b:3). Bambata from Toteng have analogous horizontally incised lines on the neck with a comb-stamped rim band (Huffman 1994:fig 2, T1; Group 1B, fig. 7). At OBP the combination of comb-stamping and incision is rare.

The rippled rim ware from Goergap and Skeurkrans sites on the Waterberg Plateau (Van der Ryst 1998a, 2003) are neckless jars with restricted openings and relatively thick walls with broad thickened rim bands. Vessel surfaces were burnished, and the vertical ripples were created by burnishing out the wide incised lines. Similar sherds were found in Namibia (Smith & Jacobson 1995; Vogelsang *et al.* 2002:120-1) and Soutpansberg (Hall & Smith 2000:30-46). Those from Geduld have much thinner walls than the Waterberg rippled rim sherds. Thickened rim bands and vertical broad incised lines do occur in the Bambata Cave and Toteng ware, but without the burnishing that created a rippled rim. Atypical sherds from OBP include two decorated with jab marks and also a coarser ware vessel with an appliquè knob.

OBP produced one tubular decorated spout and also sherds from the same vessel (see Appendix G:fig. 10). Temporal markers, such as spouted ware and the absence of lugs and pointed base vessels at OBP, are in accordance with established dates for Bambata vessels elsewhere. Spouts are generally present on spherical pots and indicate a need for the storing and pouring of fluids (Schofield 1948:32, 66; Sydow 1967:33; Sadr 2003a:204). Two spouted

vessels were recovered during the initial excavations at Bambata Cave (Schofield 1940:363, 1948:40). Geduld yielded nine spout fragments (Smith & Jacobson 1995:9). Spouted vessels were also recovered from burials at the indigenous farmer village site of K2 and also the earlier site of Schroda (Fouché 1937:90-1 Plate XXX; Unisa field visit Schroda 2006). Lugs are also present on some of the ceramics from Big Elephant Shelter, Namibia. The ceramics from the site may have some affinities with the present herder and Dama pottery, but the overall clear differences in the very fine pottery, including a highly diverse range of decorations for such a small assemblage, suggest an earlier discontinued stage (Clark & Walton 1962:12-6). Wadley (1979:14) suggested that the dates for the pottery levels, which predate any IA pottery as well as different stylistic elements, signalled earlier influences.

Spouted wares from Kasteelberg in mid- to late first millennium AD contexts were presumed to be milk storage vessels. This inference was partly based on the higher relative proportions of sheep as opposed to marine animal bones found in the faunal sample (Sadr & Smith 1991:113). However, different vessel forms may not always relate to function. The subsequent organic residue analysis showed traces of marine-derived fat in the vessels, so that spouted ware cannot be associated with dairying only (Copley *et al.* 2004:279-83). Lugged vessels, which occur later in the Kasteelberg sequence during the second millennium, were shown to also contain fatty acid residues (Smith 1993b:162, 1998a:210-1; Copley *et al.* 2004:279- 83). Lugged wares are associated with herders and cattle as pots were threaded with cords and thongs — and often tied onto forked sticks as shown in early illustrations — to be carried by pack oxen (Schapera 1930; Sydow 1967; Daniell 1976; Steyn 1990). At the EIA village of Schroda in the CLB, where the rock art imagery is ascribed to herders (Eastwood & Smith 2004:499-526, 503:fig. 2), spouted ware was also recovered by Marco Hutten during his recent rehabilitation of the site (Unisa field visit Schroda 2006).

7.4 CONSTRUCTING AN IDENTITY FOR THE POTTERS AND USERS OF BAMBATA

Bambata wares (either as whole vessels or as fragments) are therefore largely associated with mobile groups with a predominantly lithic technology and a hunting-and-gathering lifestyle, yet with access to domestic stock. Contact and socioeconomic adaptations are implicit with the arrival of new people and a completely different economic package. Whereas it is accepted that Bambata is linked to elements of early herding, the role of hunter-gatherers themselves, and the involvement of indigenous farming communities or herders in these processes, are not

yet clear. There is support for various of the proposed models and the archaeological and other data moreover allow for different scenarios.

7.4.1 Bambata and the invisible herders

Huffman (2005:57) argues that Bambata does not reflect immigrant pastoralists with a particular ceramic tradition. Whereas there is support for the movement of herders from the north (Westphal 1963; Ehret 1982, 1998), a direct link with Khoekhoe pottery seems doubtful in view of the geographic distances and differences in ceramics, except that the earliest phases of their pottery are unclear (Walker 1983:88). Herding and ceramics were probably introduced into Botswana after 500 BC and before a full African farmer presence was established (Denbow 1986:6-8). Linguists and historians predict that the origins of herders in the Cape should lie in the general region of northern or northeastern Botswana and that ancestral Khoekhoen reached the Cape region by at least 2000 BP (Elphick 1985:3-22; Denbow 1986:3; Smith & Ouzman 2004:511; Robbins *et al.* 2005:672). Such groups could have been fully-fledged pastoralists, or hunter-gatherers who integrated herding elements into their own way of life before moving southwards.

Incipient pastoralism could also have been an internal development in Zimbabwe/Botswana. The relatively settled lifestyle of riverside communities based on fishing would facilitate the early adoption of domesticates transferred through LSA trading networks some few hundred years before IA farmers moved south of the Zambezi (Denbow 1986:8; Turner 1987a:25-40, 1987b:29). Such a transformation would not have been simple as herder life is based on an ethic of acquisition and that of hunters on sharing with rules governing sharing and ownership (Marshall Thomas 1959:65-7, 198; Smith 1990; Whittle 1996:35; Lee 1998a:xi). Early stages of pastoralism were probably also based on generalised, flexible and opportunistic principles complementary to traditional hunter-gatherer subsistence strategies (Garcea 2003:122). Users of the ceramics could have been groups in transition who borrowed desirable elements of economies and integrated these into an existing lifestyle (Reid *et al.* 1998). Although no unequivocal early herder sites have been located the data from some localities, such as Bambata Cave in Zimbabwe, imply contact situations where domestic stock and pottery were introduced, and conceivably also early stages on the continuum towards the development of pastoralism (Walker 1983:88). Technological continuity in the archaeological assemblages from Namibia, but with the addition of new elements such as ceramics and livestock, argues

for parallel processes, and with a gradual shift towards a pastoral way of life (Kinahan 1996:106).

Dornan (1917:42-3) maintained that hunter-gatherers and herders were separated for such a long time that the degree of correspondence in their language is very slight. Scattered herder populations under their own chiefs were said to occur all over from the Limpopo to neighbouring districts in the interior during the historic period, and they were reported to be similar in appearance and language to pastoralist Korana in the Cape (Smith 1836:408-13; Lye 1975:269). The fact that herder groups are included on tax inventories for the Kgalagadi District, suggest an established presence (Breutz 1958:50). These localities fall broadly within the area predicted for a proto-Khoekhoe population, based on linguistic data (Ehret 1998:219). Of an apparent well-established political and economic organization nothing remains (Silberbauer 1965:114; Guenther 1976:397). Little archaeological support has been found for a herder presence. A highly mobile way of life corresponds with small-scale human impact on the landscape (Wadley 1979:54). Relative increases in bone tools and matting needles in LSA assemblages may signify a link with the Khoekhoen or, conversely, intensification (Walker 1983:90-1; Wadley 1986a:107, 1996a:210; Reid *et al.* 1998:85; Sadr 2005:212).

A recent recognition of herder art promises more definitive data on the spatial distribution of herder groups (Ouzman & Smith 2004; Smith & Ouzman 2004; Eastwood & Smith 2005). The sequence of the Central Limpopo Basin (CLB) includes finger-painted schematic and geometric motifs now attributed to herders (Eastwood & Smith 2005:63-76). Tsodilo Hills in northeastern Botswana is considered central in the development of this particular art expression (Rudner 1971:35; Van Rijssen 1994:167-7; Smith & Ouzman 2004:510-1). Approximately four-fifths of geometrics are overlays of fine-line paintings (Eastwood & Smith 2005:71). If the identification of herder authorship for the Geometric Tradition is unequivocal, the rock art sequences then indicate a more recent origin for herder art as well as a substantial and likely dominant presence for herders. However, the mere fact that San paintings also appear superimposed over some geometrics, confirms a tenuous San presence competing for access to their ancestral dwelling places.

It is proposed that geometrics do not have any possible precursors in southern Africa, yet do show strong affinities with geometric-dominated hunter-gatherer rock art to the north (Smith

& Ouzman 2004:508-11; Eastwood & Smith 2005:63-5). The stylistic data therefore point to at least one non-Bantu-speaker migration to the southern regions. The distributional evidence with clustering along rivers of the central interior, the contents, techniques, and the age for the imagery correspond with archaeological and linguistic evidence for herder migrations from the north during the first millennium AD (Smith & Hall 2000:40-4; Smith & Ouzman 2004:508-11). The extent of linguistic and cultural borrowing and also the degree of cross-influence in the art argue for an early established presence for these ancestral herders, referred to as the 'Limpopo Khoikhoi' (Smith & Eastwood 2005:73-4). The co-occurrences of Geometric Tradition art, depictions of fat-tailed sheep, and Bambata ceramics in the CLB clearly suggest a link with herders (Eastwood *et al.* 1995:1-2; Eastwood & Fish 1996:59-69; Ouzman & Smith 2004:1-4; Smith & Ouzman 2004:499-526). Hall and Smith (2000:32) uphold this view in saying that it is 'likely that Bambata pottery correlates with lithic-using, multi-resource, herder communities or foragers who had access to livestock'.

OBP contains all three rock art expressions found in the CLB, namely the finely executed San paintings, handprints and geometrics, and also the most recent predominantly white finger-painted indigenous farmer art. The tracings made of selected rock art panels at OBP include distinct images now ascribed to the Khoekhoen (Appendix M). Moreover, the geographical setting within OBP occurs is along one of the proposed southward routes of pastoralist Khoe-speakers from eastern Botswana. Already in the 1980s Walker (1983:88) proposed that evidence as to such movements should be forthcoming from this particular region.

Whereas it is likely that many of the handprints from other regions were made by Khoekhoe herders, there is also a close association between handprints and fine-line paintings (Lewis-Williams & Dowson 1989:108-9; Manhire 1998:106). Handprints are particularly common in areas in the western Cape occupied by what were probably small-scale sheep-owning hunter-gatherers (Parkington 2003:110-1). The numerically significant handprints in the Shashe-Limpopo region may be ascribed to both herders and hunter-gatherers, yet do show a strong correlation with geometrics (Smith & Ouzman 2004; Smith & Eastwood 2005:68-9). The archaeological identities of the various rock art expressions are also discussed in the section on rock art in chapter 6. Handprints are abundant at OBP and, in their sheer numbers and prominent placings, dominate the rock arts at this locality.

7.4.2 Hunter-gatherers, ceramics, domestic stock and indigenous farming communities

Bambata ceramics are also assigned to EIA farming communities, and it is suggested that hunter-gatherers acquired vessels through indirect exchange networks and diffusion. Early dates in southwestern Zimbabwe for assemblages with high proportions of Bambata ware and stylistic correlations with EIA Western Stream pottery traditions are attributed to the settlement of immigrant farming groups with pottery and domestic stock as a vanguard of the IA (Walker 1983:90), or an earlier phase of contact between LSA and indigenous farming communities to the north (Denbow 1986:8). Huffman (2005:57) argues that Bambata first spread from Angola to southeastern Africa at about AD 200 through the agency of hunter-gatherer groups. Stylistic types and decorative motifs, and their presence in other EIA facies from Benfica and Quibaxe in Angola, are applied to demonstrate that Bambata originates from the EIA Kalundu (Western Stream) pottery tradition (Huffman 1994:7, 2005:57-79). The later Bambata ware at about AD 350 were accordingly produced by Bantu-speaking farming communities in eastern Botswana and also western Zimbabwe, where Bambata was subsumed in Ziwa, with the latter producing Gokomere (Huffman 1994:9, 2005:72).

Most Bambata ceramic assemblages have distinct associations with LSA assemblages that display a very similar overall pattern marked by continuity in hunter-gatherer technologies in pre- and post-ceramic occupations, albeit it in changing relative frequencies of stone and bone tools. The data fit resident hunter-gatherer groups that acquired ceramics, metal and low numbers of domestic small stock through trade with nearby farming communities (Walker 1983:90). Sheep remains may signify low-intensity food production by hunters-with-sheep, and it is possible that proper herders only arrived some time later before relocating to the southwestern Cape (Sadr 1998:101, 2003a:195-209, 2005:214-6). Bambata-type ware, e.g. from the Salt Pan sequence in the Limpopo Province, could also have been produced by hunter-gatherers themselves (Sadr 2005:212). Dornan (1917:46) reported that ' [a] little coarse pottery is made' by the Hietshware in Botswana during the historic period.

Huffman (2005:65-71), in his recent reassessment, distinguishes between Bambata A and B, where the former represents the pottery from rock shelters in the Matopos, the Limpopo region, the Makgabeng, the Waterberg, the Magaliesberg and in Botswana, near Gaborone as well as open sites around the Makgadigadi Pans and Lake Ngami. The extent of the spatial

distributions and fragmented nature of the samples support the inference that most of the pottery was obtained through trade and also passed on through long-distance exchange networks to localities as far south as those in the Magaliesberg. Some groups also acquired domestic stock. Huffman (2005:63-5) argues that Bambata style was not created by hunter-gatherers. Stylistic attributes reflect an IA origin in the range of vessel shapes and repeated motif combinations as well as position or layout, which also eliminates a pastoralist origin. The thicker, more robust Bambata B ware with a more limited distribution is attributed to the work of indigenous farmers (Huffman 2005:68; Van Doornum 2005:149-50). Dates for Bambata A are suggested to be between AD 200 and 620, whereas Bambata B is found from AD 350 to 650 (Huffman 2005:68, 71). Huffman (2005:66) furthermore proposes that the mainly small assemblages do not represent typical farmer assemblages. Yet several Bambata assemblages, including the OBP Bambata, contain relatively large samples with many conjoining sections.

Biemond (2006a) in his ceramic analysis of Bambata from OBP found more affinities with herder pottery than with indigenous farmer ceramics. A multi-dimensional model developed by Huffman (2000, 2002) was used to construct stylistic design structures for Bambata and also herder ceramics. Three variables of profile, decoration motif and decoration layout positions are applied to produce a stylistic class or type (Fig. 2 in text, and Appendix G:figs 12-13). Series of interrelated types produce a design structure for a particular ceramic style (Biemond 2006b). The model helps to define the closest fit between a specific assemblage and group signatures. The Bambata design structure was developed from the following ceramic clusters:

Cluster	Locality	Commonalities between clusters
Eastern	Bambata Cave & Limpopo Bambata	The same time frame
Northern	Toteng Type 1, 2, 3	Thin, small and lightweight vessels
Western	Namibian rippled rim ceramics	Fragmentary nature
Southern	Kasteelberg western Cape	• Only jars identified • Spouts • Contain rippled rim ware • Associated with ovicaprines • Associated with assemblages similar to those of herders, and also hunter-gatherers

The intensification model (Lourandos 1997) projects that socio-demographic pressure, increasing complexity and dynamic social systems manifest in resource specialization and economic expansion. Changes in technological organization, and probably social dynamics, are signified at most LSA localities with Bambata, for example an incremental change from projectile points towards scraping tools at Toteng (Reid *et al.* 1998:85), increased proportions of scrapers relative to other backed lithics in the Magaliesberg (Wadley 1986a:107), matting needles that are particularly numerous at the Matopo sites, and a decrease in backed tools that might correlate with the availability of metals (Walker 1983:90-1).

At OBP technological and subsistence continuities in what is clearly a LSA assemblage, low numbers of ovricaprines, a lack of domestic plant food remains and structural features, certainly do not favour a herder or agriculturist occupation. The assemblage from OBP shows no discerning changes in the relative frequencies of scrapers, worked bone and OES in the levels with Bambata. There is, however, a marked percentage decrease in all classes of material culture following contact. This tendency suggests changes in utilization of the shelter in response to changed demographics. This will be further discussed in chapter 8. The ceramics, which include various expressions, probably point to the utilization of the shelter by different groups over time, including Bambata villagers or herders.

7.5 CONCLUDING REMARKS

The relative quantities and different ceramic facies at OBP demonstrate the presence of indigenous farming communities and possibly herders in the immediate area and an emphasis on this locality by diverse groups. Whereas all the other facies from OBP are attributed to indigenous farming communities, it is clear from the above discussion that current data do not single out a specific group as the makers of Bambata ware. Associations with LSA assemblages at mostly shelter localities and intrusive contexts favour hunter-gatherer groups with access to ceramics and domestic stock. No archaeological evidence for farmer village or herder sites has been forthcoming. Support for an origin within indigenous farmer ceramics to the north is based on traits present in Bambata assemblages indicative of affinities with the EIA Kalundu ceramic tradition.

Marshall (1976a:306-7, 1976b:366) says that although the Ju/'hoansi value pots obtained through trade and like to have a pot around to borrow sometimes, not everyone wants to carry one. An EVE of approximately 123 vessels possibly suggests that low numbers of vessels were acquired over a relatively long period. Corresponding attitudes by the OBP hunter-gatherers relating to ownership and the burden of carrying bulky goods, can explain relatively low numbers of ceramics at OBP. It is significant that Bambata sherds that translate to 31 pots, account for 25% of all reconstructable vessels in the five different ceramic facies present at OBP. Also, the unconstrained activity analysis demonstrates that although most ceramics were deposited against the talus, 54% of the Bambata occurs in a more narrow space against the shelter wall. The statistically small sample makes any interpretations tentative, but that Bambata vessels are prominent in the inner space may be meaningful. The UCA shows discrete spatial clustering in highest densities for Bambata vessels against the wall. The Bambata distribution overlaps with several high-density pigment clusters. Relatively durable containers would have been rare, eminently useful as paint-holding vessels during transitional ceremonies or rock-painting activities, and also for any other task where ochre was applied (see also chapter 5 on ochre at OBP, and chapter 8 where some activities at OBP are reconstructed).

The characteristics of ancestral herder ceramics are obscure and the mere fact that a clear antecedent for Bambata is unknown, implies some measure of local contribution within the known distribution area for the development of such a distinctive ceramic tradition, possible

accompanied by an embryonic herder lifestyle. Biemond's (2006a) analysis of the ceramics from OBP is supportive of herder elements. Our incomplete knowledge on the proposed routes along which pastoralism was introduced, and also a lack of conclusive herder sites, inhibit reconstruction of the past role of herders in interactive relationships within these regions.

Other indirect data used in support of herders on the landscape centre on the newly recognized herder rock art, which may have profound implications for the archaeology. However, more spatial research is required to explain variability within the art and to establish local sequences. The accurate dating of the Geometric Tradition rock art now ascribed to herders (Smith & Ouzman 2004; Smith & Eastwood 2005) underpins the debate on herder origins, early ceramics and domesticated stock, but more data are required to demonstrate that these variables indeed correlate. The different rock art expressions demonstrate appropriation and use of shelters by indigenous farming communities, especially localities that were perceived to be repositories of power. Archaeological evidence for this hypothesis is still weak, but parallel the scenario for Namibia, where a typological and temporal break in rock art traditions is tentatively ascribed to herders (Lenssen-Erz & Vogelsang 2005:61). This will remain an ongoing discussion until more definitive data from open sites and other areas become available. Until then there will be no consensus on the origins of Bambata and the societies who were the main producers of these remarkably fine ceramics, and which were circulated over virtually the whole of southern Africa, yet found only in fragmentary form and then mostly in shelters.

The significance of Bambata pottery in either functional or symbolic contexts remains unknown. At most sites relatively few sherds of many vessels and the absence of more complete vessels point to curation of ceramics or collection as curiosities (Schofield 1948:36-8; Cooke 1963:142-6; Simons 1968:47-9). This may imply more than a functional value only, and that early ceramics were invested with ritual or symbolic significance (Kinahan 1991:28, 116, 128; Smith & Jacobson 1995:12; Reid *et al*. 1998:84; Stewart 2005:110). The collection of pottery sherds by more recent San was not uncommon (Dunn 1931:84; Schofield 1948:42). Still, the widespread and regular occurrence of Bambata at cave and shelter localities argues against merely 'collecting proclivities' (Robinson 1963:81).

It is tempting, in conclusion, to ascribe another possible origin to some of the Bambata, namely the documented use of pots as drums by both hunter-gatherers and herders. The use of pot drums was universal among herders, and recorded by early travellers, such as Kolb and Thunberg, and pot drums are also evident in contemporary illustrations (Schapera 1930:401; Smith & Pheiffer 1993:46-7). It was called a pot-drum (in Dutch *potteslaan* and Afrikaans *rommelpot*), and played by women (Laidler 1929:759; Schapera 1930:401; Sydow 1967:17-8). In a volume with a collection of drawings and sketches dating from the 17th century on Cape herders, the caption below a woman playing on a covered pot reads: *'deze Hottentotte speelt met de handen op dezen / pot-trommel. Dit is vrouwen tydverdrÿf'* (Smith & Pheiffer 1993:47). Kolb (1731:273) wrote that [a]nother Hottentot Instrument of Musick is an Earthern Pot ... cover'd at the Top with a smooth dress'd sheepskin ... This Instrument is only us'd by the Women ...'. The Bleek records likewise noted that women made and played drums. The /Xam used wet springbok skin as a covering, which they 'tie, putting the bag over the pot's (drum's) mouth. Then they tie on the sinew. And they pull the drum's surface tight; for they wish that the drum may sound, when they beat the drum' (Bleek & Lloyd 1911:351, 355-7). The use of the thigh skin of a springbok suggests that the drum was relatively small (Bleek & Lloyd 1911:351).

Pot drums were likewise recorded in the interior during the 1800s. The missionaries Arbousset and Daumas (1968:246) called it a tam-tam, and said that the drum was 'made of a small earthen pot, in the form of a quoit, and covered with the skin of a gazelle, well softened, after having been stript of its hair'. Notes and photographs on the Prieska San also document the playing of a skin-covered pot during dances, and that a so-called Pot Dance used to be quite popular during earlier times (Jolly 2006:174-175). A narrative on a rainbull documented by Eugène Marais (1964:25-30) almost 100 years ago in the Waterberg, describes young girls playing drums. Drums called *ghoema* still feature in musical performances of communities in the western Cape (*Beeld* 2006-03-08). A recent musical by David Kramer and Taliep Petersen, which was performed in Cape Town, too was named *Ghoema* (www.baxter.co.za:2005/6). Whereas the materials used in making the drums may be different, the word *ghoema* was used by countless generations in the western Cape for percussion instruments, and they continue to do so.

In commenting on the debate around the first settlement of America, Fagan (2004:148) said that '[t]he level of speculation ... vastly exceeds the amount of archaeological data', which may equally well apply to Bambata. In this instance data from many sites are currently available,

but not enough conclusive facts to arrive at a consensus on the origins, spread and cultural affinities of this particular ceramic tradition. Maybe the answer is that we need to find more village sites (Huffman 1994) to satisfactorily resolve the issues around Bambata. In chapter 8 the different data-sets, including data from this section, are applied to infer the ways in which the inhabitants and users of the shelter structured their economic, social and ritual domains.

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A SENSE OF PLACE: A RECONSTRUCTION OF LIFEWAYS AT OLIEBOOMSPOORT

> [A]rchaeologists face the problem of how to assign meaning to the things they excavate (Mitchell 2002:218).

8.1 INTRODUCTION

In this section the ideational significance of OBP within the physical and psychological landscape and the relationship between people and place are explored. Social, political and economic organization is implicit in the initial choice of a locality, and in the different ways in which revisiting is scheduled (Nash & Chippendale 2002:2). In chapters 2 and 3 the attributes of the natural environment, which meet criteria for a preferred locality, are detailed, and I now use the archaeological findings to infer behaviour at OBP.

This chapter is structured by first putting the site within the temporal, cultural and social landscape. The archaeological data from OBP are then integrated with findings from other sites. In chapter 3 the quantitative data from the excavations are presented by using Unconstrained Cluster Analysis (UCA). This analytical technique emphasized broad patterns in the structuring of space, and defined discrete activity-specific areas at OBP. The main function of UCA is smoothing of the data, which provides more general and interpretable patterns of density variations over a site (Gregg *et al.* 1991). UCA was applied to the OBP data to make sense of the spatial patterning of the various types of materials and a differential use of space. The UCA highlights consistent patterns in the structuring of formal space at OBP. It also identifies continuities and change in some of the activities carried out within the structured spaces.

To see whether the recurring patterns found are of behavioural significance, the findings from OBP are compared with ethnoarchaeological contexts (Boismier 1991:189-214; Gamble 1991:4-5). Observed changes in the intensity of site-use and the intrasite spatial structuring suggest differential social and group dynamics during multi-group alliance visits as opposed to occupations by nuclear families. The organization of likely gendered activities is suggested with reference to UCA density values and cluster formations. Blurring of single-sex tasks through multi-purpose tool use is also addressed. Changing relative frequencies of deposited materials, imports, as well as the OBP rock art sequence, demonstrate differential site use by not only remnant hunter-gatherers, but certainly other societies in ways which allude to underlying and powerful meanings and associations attached to this locality.

In the Waterberg a combined use of historical records and ethnography underpins many of the interpretations based on the archaeological data recovered from OBP. The real affiliations of the inhabitants of OBP will always be unknown, but tentative links with Khoe-speakers in Botswana are explored in this section. In view of many parallels in the underlying hunter-gatherer structure (Barnard 1992:6), some findings from around the Limpopo region are also valid for OBP. Mobility across boundaries between the Waterberg, Botswana and the Kalahari was quite common, but the Limpopo River also demarcated territories (Baines 1872, 1877; Stech 1885; Schlömann 1896; Kirby 1940; Wallis 1946; Breutz 1958). Accounts of journeys through the Waterberg region sometimes reported on the lifestyle of hunter-gatherers, and in particular how they adapted their own behaviour to cope with change.

(For the routes of the early travellers see Changuoin 1998b:12:map 4.1(b), 116-124; and for trade routes Changuoin & Bergh 1998a:9:map 3.1 & 10:map 3.2). Some of these observations by explorers, hunters and missionaries were integrated with the archaeological data to reconstruct a broad outline of the way of life at OBP. The historical records specific to the region are, in addition, rich sources of implicit ethnography (Whitehead 1995), which are now beyond the reach of ethnographic research.

In the Waterberg, as in other regions, ethnographical perspectives offer unique insights into the dynamics of interaction between hunter-gatherers and other societies, which can be investigated over a relatively recent time-depth (Mitchell 2005:66). The discussions in the previous chapters demonstrate the interrelatedness of primary and secondary data. Neither archaeological nor anthropological findings can capture all aspects of life (Widlok 2005:30). The careful and critical use of both data sets, aided by analogy, allows effective modelling. Such a synthesis underpins a broad reconstruction of the diverse activities undertaken by groups, with shared value systems, at OBP. Analogous patterns and practices recognized among contemporary San groups are used to reconstruct and interpret subsistence practices. Some correlates have broader scopes, whereas others are used in a more particularistic manner (Shifter & Miller 1999:55). We may not have an unbroken ethnographic record (Barham 1992:45), but the underlying structure of hunter-gatherer cognitive systems and behaviour can be applied across geographical and temporal boundaries. Hitchcock (1999:175)

argues that '[a]t least some of the contemporary African hunter-gatherers are linked by archaeology, rock art, and oral traditions to ancient hunter-gatherers'.

I discussed in chapter 1 the importance of the critical use of ethnographic data for building models against which the archaeological data can be tested. The importance of any appropriate model for a particular society, irrespective of when it existed in time, is the extent to which it aids our understanding in an empirically supportable way (Burch 1998:205). The revisionist debate and criticism on the indiscriminate use of ethnographic analogies (Schrire 1984; Wilmsen 1989; Kent 1992; Solway & Lee 1992; Lee & Daly 1999; Mitchell 2004b:159-64) resulted in a more nuanced use of ethnography. Reviews of recent research (Mitchell 2005:64-71; Mitchell & Whitelaw 2005:209-41) demonstrate the great potential of using our rich ethnographic and historical data resources to understand and reconstruct processes of change, which resulted from the complex interactive history between the various indigenous societies in Africa.

Whereas activities at OBP were undoubtedly different from many of the ethnographic examples, the liberal use of analogies is justified as a tool to explain observed broad patterns. Hunter-gatherers have adapted and changed aspects of their culture in many ways and repeatedly, but they persist with a foraging strategy. Silberbauer (1996:26) says that by referring to hunter-gatherers we apply a cognitive definition rather than a mechanistic technological one. Whatever the ways in which they now get their food, hunter-gatherers still see themselves as directly connected with their own hunting and gathering tradition, which continues to provide them with significant social and cultural meanings. Much is also written on the considerable diversity of ethnographically known hunter-gatherers (Lee 1979; Wilmsen 1989; Bartram 1991; Kelly 1995; Guenther 1996a; Kent 1996; Silberbauer 1996; Mitchell 1997; Widlok 2005). Within this acknowledged diversity, the major areas of convergence, which define hunter-gatherers, are their subsistence practices, social organization, cosmology and world-view (Lee & Daly 1999:3). The title '*So Varied in Detail - So Similar in 0utline*' used by Flannery (1998:237) for his discussion of Aboriginal lifestyles, is equally valid for describing southern African hunter-gatherers.

The dynamic nature of hunter-gatherer culture resulted in many changes in socio-economic practices through time. Given that any archaeological record derives from deposition and

preservation, which are inconsistent and uneven, the OBP assemblage is remarkably rich and diverse. It confirms continuation in subsistence patterns, but also diversity in the range of materials and technological attributes of the lithic assemblage, and the incorporation of new economies into a traditional subsistence base. The use of ethnography to explain some of the archaeological occurrences at OBP may seem to obscure some of the acknowledged diversity in hunter-gatherer lifeways, and also the regional cultural differences. However, by drawing upon ethnographic examples from very different hunter-gatherer groups outside southern Africa, and from across the Kalahari, Botswana, the Cape and also the study region, I attempt to highlight the complexity of the worldview of the various groups. Mitchell (2005:5) says that the incorporation of data into our models taking into account societies even outside Africa, can 'direct our attention to issues that have often been overlooked ... '. Susan Kent (1995:4) argued that differences between groups must first be studied in order to find similarities. Cultural diversity, which has to do with differences in behaviour and the products of behaviour; and social diversity, which concerns the meanings given to such differences, can only be detected by a process of comparison (Silberbauer 1996:26-7).

Because we have so little direct data on hunter-gatherers themselves, I shall sometimes refer to anecdotal accounts without making any claim that the practices are representative of the people from OBP. Eugène Marais published a few stories told to him by a very old man from the Waterberg (and who was also sketched shortly before his death by Erich Mayer, see Van der Ryst 1996). Whereas Marais called him a Bushman (1964:5), he also noted in the subheading of one narrative on rain (1964:12) that it was a Korana tale by wandering people (*dwaalstories*). Marais was very much aware that a text is lifeless without context (Guenther 1996b:78), when he said that his written versions could not capture the vibrancy of the actual telling and performance. The underlying themes in several of these texts are about the ethics of sharing in times of need, equality, the elaborate preparations preceding communal rainmaking events, and the role of rain animals. Similar concerns form the sub-text of the narrative genre of all groups in the southern African region (Bleek & Lloyd 1911; Biesele 1993; Guenther 1999; Lewis-Williams 2000). Data from these stories and historical accounts on the Waterberg/Limpopo region can inform on and explain some of the patterning from more recent — and often brief — events when other communities started to frequent OBP for their own reasons. In reconstructing aspects of the more recent activities at OBP, the powerful role of the Waterberg hunter-gatherers as ritual specialists, changes in site purposes to include rain

control for farmer groups, and a collapse of the forager lifestyle, are discussed based on data implicit in the ceramics and differential contents of the rock arts. I also aim to account for the stylistic origins of the Bambata assemblage from OBP by integrating the data from chapter 7 on the ceramics, the archaeological findings, and the rock art sequence.

8.2 THE EVIDENCE: ABANDONMENT IS NOT AS IT SEEMS

8.2.1 The conceptualized landscape

When people frequent a locality such as OBP over a long time, an essence of place is created by not only the surroundings, range of activities and experienced events, but also the sounds and even smells that a place holds (Ingold 1993:155). In chapter 3 the meaning of place is discussed. Knapp & Ashmore (1999:11) say that landscapes are given meaning through localized social practices and experiences, and reinforced when places are used over generations. Widlok (1999b:80-2) observed in his study of the Hai‖om that interrelatedness was achieved by turning a location into an attribute. When larger social groups gathered, they were linked through multiple ties of kinship, name relations, and exchange partners (Marshall 1976a:183-4; Silberbauer 1981:178-82). Place is integral to identity so that a deeply rooted and emotional relationship with the social and geographic landscape is even more pronounced where people completely live off the land (Bleek & Lloyd 1911; Deacon 1986, 1988, 1996, 1997; Tilley 1994; Taylor 1997; Taçon & Ouzman 2004; Deacon & Foster 2005; Smith 2005). This extends to the socially shared ways of talking and thinking about the environment. People and places are labelled in terms of the physical characteristics of the land. OBP would have been a place with powerful and lasting associations where kin and affiliated groups gathered. A deep sense of attachment to and identification with land is universal.

Regional settlement organization between the Limpopo Lowlands and the Waterberg Plateau during the LSA differs (Van der Ryst 1996, 1998a). The raw materials used in the production of lithic tool types are also dissimilar. Raw material availability, geographic distance and preferred use can account for variability in assemblages (Parkington 1984:84; Odell 2000:277-8, 2001:66-7). At OBP the extensive use of CCS materials reflects sourcing from the nearby Limpopo River. Quartz and felsites dominate assemblages on the Waterberg Plateau. Chert was extensively used in the Shashe-Limpopo LSA assemblages (Van Doornum 2005:166). A narrow range of raw materials can also imply more limited movements (Wadley 1987:67). A smaller home range for hunting and gathering groups in the Limpopo Basin during more recent

occupations conforms to the archaeological and documentary evidence for groups on the Plateau. Besides, the diversity of materials at larger sites such as OBP correlates with the aggregation model (Wadley 1987:67; Mitchell 2004b:160), which brings together groups from across foraging ranges, and from often diverse ecosystems.

Organization strategy relates to the continuity, duration and intensity of settlement at a particular locality (Adams 2002:47). The archaeological patterning of cultural material and debris generated through repeated visits of groups through shared, but also individual experiences and tasks, is of prime importance to the archaeologist. Patterns allow inferences on particular uses of a site and the structuring of living spaces, which can be recognized, documented and analysed. Ideally, the application of such derived data should lead to an understanding of the past behavioural significance within a particular living space. The composition of the OBP assemblage reflects the prominency of this locality for more than 2000 years, and indicates that it doubtless featured in band alliance visits over a period of almost 1500 years. The pulses of intensification within the sequence are discussed with technology (8.3). A marked decline in visits with a different organization of activities is apparent from approximately the last 200 years.

This pattern at OBP clearly contrasts with the Waterberg Plateau, which was utilized only after approximately 800 years ago. The data for the plateau suggests intensive occupation up to historic times (Van er Ryst 1996, 1998a, 2003). Although most of the findings on hunter-gatherers on the plateau are based on Goergap as one of the largest sites, my excavations at smaller localities support a broadly parallel movement with farmers into this area. Aukema (Huffman 1990:117-9) proposed that an expansion of the tsetse belt in the Limpopo bushveld following on bush encroachment from farming practices (Moffat 1910; Fuller 1923) prompted a shift of farmer groups to the Waterberg Plateau where conditions would have been more amenable for their cattle. Cattle dominate the socio-economic relations of farmers (Boeyens 1998:214-6; Huffman 2002:1-22). However, I pointed out in my study of communities on the plateau that grazing for cattle in the mainly sourveld would have been inferior (Van der Ryst 1996). Until more data to the contrary are available, it appears that hunter-gatherers deliberately moved to take advantage of the socio-economic resources of farmers. The Waterberg hunter-gatherers provided ideological support to farmers in functioning as ritual specialists and through rain control (Schlömann 1896, 1898; Van der Ryst 1998a, 2003).

The name Waterberg refers to the abundant seasonal water in the many streams, rivers, deep pools and wetlands (Walker & Bothma 2005:27-31). The topography and often shallow, poorly developed soils result in quick runoff and much seepage of water after rain. The abundance of surface water sources and the remarkable drainage after rains probably contributed to the endurance of rain control ceremonies conducted in this region until the recent past (Jackson 1982; Aukema 1989). Flexibility in land use and the sharing of resources, but also unbalanced relations, which developed as the land became more fully settled, were demonstrated to be operative during the late phases of contact in the Waterberg (Van der Ryst 1996, 1998a). Different social and economic developments can account for some of the interregional diversity when compared with the Limpopo lowlands. The Shashe-Limpopo sequence (Van Doornum 2005) shows similar differences between the first and second millennium AD. In that area changing land-use patterns are attributed to interactive relationships and the effects of farmer proximity.

8.2.2 Changing site use

8.2.2.1 Multi-band alliances and intensification

The universal concentration-dispersal dynamic and seasonal scheduling of interregional band alliances is a core value of the economic and social organization of hunter-gatherers. Multi-band alliances feature prominently in their ceremonial life (Marshall Thomas 1959; Wadley 1986a, 1987; Kelly 1995; Guenther 1996a; Lee 1998a, 1998b). Marshall (1976b:350) says that '[t]hey must belong; they can live no other way', and also that San depend emotionally on group affiliations and the companionship created through kinship and other ties. Whether or not aggregation was practised on a seasonal basis at OBP, temporal differences in site use suggest marked changes in group configurations through time. Structured spatial arrangements are used as evidence for multi-band occupations (Wadley 2000b:103). Density volumes for debris commonly signify site function because intensity, rather than kind of activity, indicates differential use of a locality (Yellen 1976:67; Wadley 1987:42-8; Barham 1992:46-7; Andrefsky 1998:206-7). An inverse relationship between assemblage diversity and level of residential mobility is apparent (Andrefsky 1998:204-5). Extended stays at band cluster sites should translate into a greater diversity of all types of materials. This indeed applies to the earlier OBP sequence.

Some tasks carried out during group alliances can be more defined in the archaeological data, for example the butchering and division of large game killed during cooperative hunts. However, segregated activities are not always clear as I pointed out in chapter 3 in detailing the structuring of space of OBP. Technological organization, which relates to the gendered division of tasks in the production, use and maintenance of tools, and how this contributes to the formation of patterns, is difficult to separate or assign (Boismier 1991:189; Mitchell *et al.* 2006:90). Cooperative gendered activities generating dense debitage are carried out in fireside contexts, yet at separate hearths by contemporary hunter-gatherers (Yellen 1976:68-9, 1977:91). Reciprocal exchange moreover featured prominently during phases of intense social activities (Wiessner 1982; Wadley 1987:42-3, 79-80). Goods to be used in the initiation of new alliances and the settlement of existing social obligations were frequently made within such contexts. All these activities contributed to both the volumes and richness of an archaeological deposit, so that discrete gendered tasks can seldom be separated out of the palimpsests of many repeated occupations created around formal structured spaces and fireplaces.

The quantitative data, and also the particular structuring of activities within the formal space, suggest a focal role for band alliance visits at OBP when groups from a broader territorial range aggregated at this locality. The organization of space is discussed in more detail under 8.3. Levels with high-density values in artefacts correlate with intensity of use during long-term visiting. The savanna biome of the immediate area around OBP, and rich resources from nearby rivers and tributaries as discussed in chapter 2, offered sustainable resources for large groups over a scheduled period.

Intensification in response to external processes, such as newcomers on the landscape, can also account for the observed increased production and specialization in tasks. Indications for stress are mostly expressed in intensification and elaboration of design in an archaeological deposit (Lourandos 1997). Whereas mobility is a regionally sustainable approach to land use in response to human-induced pressure on resources and social problems, it can also be used to create new economic frameworks (Kent 1991:34; Eder 1996:85; Nelson & Hegmon 2001:213-4). Indigenous farming communities settled early in the Limpopo region, and the proximity of villages such as Diamant before AD 600 certainly influenced the movements, and also social lives and economies, of hunter-gatherers (Aukema 1989, and survey documentation lodged at Unisa; Van der Ryst 1998b). The continued use of OBP during this time suggests that

the earlier period of contact was accompanied by much more accommodating relationships. Such behaviour can be linked to flexibility in the territorial ideology of hunter-gatherers when dealing with expanding frontiers, but more important, their ability to negotiate power relations through their acknowledged role as ritual specialists (Alexander 1984; Kopytoff 1987; Barnard 1992; Katz *et al.* 1996; Widlok 1999b; Peters 2000; Van Doornum 2005; Schoeman 2006).

The two peaks in production at OBP at approximately 2000 and approximately 1800 years ago can, therefore, relate to intensified production of goods to be used in facilitating new social and economic ties. The remarkable abundance of materials from these levels, and the categories of tools manufactured, fit such a scenario. Increased frequencies in not only lithics, but also arrow sections, awls and OES beads, suggest intentional procurement and manufacture of goods for trade. Ostrich feathers, ivory, meat and berries, leopard and dassie skins were direct exchange and tribute items in the Waterberg during the late contact period (Schlömann 1898; Keane 1920; Marais 1928; Kirby 1940). The glass beads, cowrie, metal ornaments, some of the ceramics, gourds and domestic animals at OBP are likely some of the commodities received in return (Breutz 1958; Gordon 1984; Cashdan 1987; Guenther 1994; Morton 1994; Wilmsen 1994; Smith & Lee 1997). Such goods are passed on through gift exchange networks among current hunter-gatherers similarly to OES beads, which were favoured items to be exchanged and bartered cross-culturally (Fourie 1928; Schapera 1930; Marshall 1961, 1976a; Heinz 1966; Silberbauer 1981; Wadley 1987; Wiessner 1992; Schweizer 1999). Whatever motivated the marked intensification at OBP, the extent of the assemblage signals cooperative activities by a greater number of people than merely small hearth groups.

8.2.2.2 A pattern of dispersal

Mitchell (1997:389) says that cultural systems can be differentially organized, and people can use the same site for different purposes at different times. The archaeological data from the more recent occupation at OBP do not show a similar pattern of intensive and prolonged utilization. Marked changes in the frequencies of many tool types in the uppermost levels, as well as a different structuring of space, clearly signal interruptions within a long-established pattern. The scheduling of band fusions and dispersals was dependent on environmental variables (Marshall 1976a:196, 180; Wadley 1987:41; Barnard 1992:101-2, 226-7). An established regional model of seasonal scheduling was generally adhered to, but with flexibility according to fluctuating environmental conditions (Lee 1976:79-97). Even if OBP was not an

aggregation site before these observed changes, but merely intensively used by large groups, the marked differential site use patterns imply major shifts in demographic and seasonal movements. Silberbauer (1981:280) says that a band, in dispersing under stressful environmental conditions, becomes dormant and inoperative as a social entity — a strategy that can cope equally well with social stress. At OBP strategic changes in residential mobility as evident from the data arose most likely through contact conditions.

A strategy of alliances was of great economic importance in giving interband members access to goods and materials from other regions, and also functioned in sharing information and social resources (Silberbauer 1981:282; Wadley 1987:41). Whereas the subsistence base of hunter-gatherers is not directly threatened by farmers since the respective groups occupy different ecological niches, their sustained use of a region does impact on patterns of mobility and the spatial boundaries on which hunter-gatherers base their knowledge of the ecological and social environment (Moore 1985:103; Barnard 1992:226-8). Hunter-gatherers often try to deal with risk by avoiding conflict. Displacement commonly ensued in shifting mobility ranges (Ingold 1986:194-5). In the Kalahari increasing pressure from contact brought about a spectrum of responses in spatial organization. Fragmentation, accompanied by increased sedentism, resulted in discontinuous utilization of traditional territories, whereas other bands consolidated and became increasingly mobile (Yellen 1976:92-4, 1990:7-9).

A similar range of responses is apparent on the Waterberg Plateau (Van der Ryst 1998a, 2003) and in the Soutpansberg (Hall & Smith 2000; Peters 2000; Smith & Ouzman 2004; Eastwood & Smith 2005; Sadr 2005; Van Doornum 2005; Schoeman 2006). In the Soutpansberg several sites reflect an earlier degree of intensification, and then an inverse pattern directly related to rapid farmer expansions and an increasingly more complex landscape. Visits to long-established hunter-gatherer locations became less frequent or shorter until the region seemed to have been completely abandoned (Van Doornum 2005:180). Caves and shelters were frequently used as places of retreat from outsiders (Stow 1910; Arbousset & Daumas 1968; Parkington & Mills 1991). Remnant San groups in the Waterberg took refuge in almost inaccessible mountainous places, and also used mobility as a strategy, to retain some measure of autonomy (Schlömann 1898:66-70). Data from occupational debris and the spatial structuring of formal spaces at OBP suggest that this locality was mostly used by family hearth groups during the late contact phase.

The Hietshware, across the Limpopo, told Dornan (1917:47, 82) that caves were formerly more consistently used. However, they soon realized that they were more likely to be trapped in places regularly used, and began to avoid them. These observations relate to the late phases of contact when shifting power positions resulted in oppression and displacement of hunter-gatherers. A sustained occupation of the mountainous regions on the Waterberg Plateau coincided with a more fully settled landscape, which manifested in a continuum of responses. On the plateau hunter-gatherers actively entered into affiliations with farmers, until unbalanced relations gave rise to hostilities. To escape from forced labour and enslavement by farming communities, some hunting and gathering groups relocated to more sheltered places in the mountains, since they were not localities favoured by farming communities with their cattle and agricultural economies (Schlömann 1896, 1898; Van der Ryst 1996, 1998a, 2003). This changing focus of intercultural relationships in an increasingly dense landscape is parallelled by findings for the Shashe-Limpopo region (Van Doornum 2005; Schoeman 2006).

OBP was never abandoned. Differential use of this locality by other ethnic groups is discussed under 8.6. The dealings between hunter-gatherers and indigenous farming societies in the Limpopo region closely mirror events all over southern Africa (Huffman 1990:117-9; Kinahan 1999:352; Mitchell & Whitelaw 2005:240). The many ceramics and other exotics at OBP support relations with neighbouring village communities, whereas changes in the contents of the rock art suggest a reinterpretation of rituals and differences in the ideational landscape.

8.2.1.3 Who were the people who lived at OBP?

Whereas the identity of the hunter-gatherers at OBP cannot be reconstructed, some comparisons with the Hietshware in eastern Botswana are justified. In geographic terms the current distribution of the Eastern Khoe lies close to the research area, with the Central Khoe G/wi and G//ana more to the east. From the distribution of major Khoe-speaking groups and linguistic classifications (Westphal 1963:237-65; Barnard 1992:24, fig. 2.5; Walker 1995a:71), it seems likely that the inhabitants of OBP belonged to a Khoe-speaking division. Khoe languages are spoken by hunter-gatherers and also herders (Barnard 1992:25, 31). The linguist Bleek (1929) was the first to propose a connection between the Khoekhoe language and that of hunter-gatherers in Botswana. Based on linguistic, cultural and geographical criteria four divisions are recognized, of which Eastern Khoe includes all the Khoe-speakers of eastern Botswana such as the Hietshware and the various Kua groups. Speakers of this linguistic

division are the most numerous and culturally diverse. Barnard (1992:26-7) is of the opinion that the Khoe-speaking hunter-gatherers in Botswana diverged much earlier from proto-Khoe. Groups of Khoe-speakers were earlier on also resident in parts of South Africa (Barnard 1992:25).

During the earlier part of the 20th century the Botswana San, who roamed within the general Limpopo region or lived in Tswana villages, were said to be Hietshware (Dornan 1925:66-7; Eastwood & Blundell 1999:18; Eastwood 2006:29). Whereas the indigenous farmers referred to them as Masarwa, the hunter-gatherers themselves never used this term, instead calling themselves Hietshware, 'or people of the open country' (Dornan 1917:37). Their attachment to their language, freedom and own habits was so strong that they were reluctant to settle at villages, and different groups remained quite distinct (Dornan 1917:43; Schwarz 1928:131). Dornan (1925:67) noted that one of three main divisions used by the Tswana for different hunter-gatherer groups, are '[t]hose called Baduruwane, black or yellow, fairly tall, spare of flesh and practically naked ... They inhabit the country on both sides of the Crocodile [Limpopo] river, and are very wild and fierce. These are the people called Kattea by Keane, and Vaalpens by the Boers. Little or nothing is known of them'.

The historical data do not indicate particularly close relationships between Botswana hunter-gatherers and those across the Limpopo. I remarked in chapter 2 on how the Masarwa from Botswana, who guided Baines on his travels, refused to cross the river because that would bring them out of their own territory and into that of another group (Baines 1872:33, 1877:64, 66; Wallis 1946:736-7, 745-6). Even highly desirable goods promised in payment, such as beads, gun powder and lead, could not persuade them (Wallis 1946:748), with the result that other Masarwa from within the trans-Vaal region then took over as guides.

We have no direct information on the early history of hunter-gatherer groups within the research area. Communities of hybrid origin were by the late 19th/early 20th century common in the Limpopo region (see also chapter 2). Accounts by contemporary observers invariably emphasized that these hunter-gatherers differed from the other Masarwa in language and appearance, and that they were generally darker (Keane 1900:71-3; Hammond Tooke 1908:356; Dornan 1917:38, 41, 1925:65, 75, 238; Marais 1920:3-5; Wallis 1946:736; Breutz 1958:50-3, 60, 1989:5). Photographs taken in 1919 of individuals in the Waterberg indeed show

an admixture of physical traits (Van Schalkwyk 1965:146-53).

Keane (1900:73, 1920:121) wrote that the language of groups near the Limpopo was quite distinct. Selous (1908:330) disputed a report, in which it was claimed that '[t]he Bushmen living in the Valley of the Limpopo, in the Northern Transvaal, called Maseroa are distinct from the ordinary South African Bushmen'. He said that '[a]ll the Bushmen I have seen, whether those living on or near the Orange river, or ... Kalahari ... or throughout the Bechwanaland Protectorate, ... and from thence to the Limpopo, appeared to me very much the same ...', and '... seeing how little they vary as a rule both in appearance and in habits and manner of life in widely separated areas, I think that for the most part they must be a pure and distinct race throughout the greater part of the countries they inhabit' (Selous 1908:330). He also discounted Keane's versions (1900, 1920) that hunter-gatherers around the Limpopo were a debased people.

On his own extensive travels he never met with or heard of black Bushmen in the Waterberg (Selous 1908:331). He said that his Korana guide, John, could converse with all the Bushmen they met, including those from the Limpopo (Selous 1908:333, 335-8). Whereas the different groups ('separate clans', p.335) lived mainly apart he believed that the people in the Limpopo valley near the mouth of the Shashe spoke the same language as those to the north in Botswana (Selous 1908:336). Dornan (1917:61) conceded that a Korana would understand the language if he had lived amongst the people for some time. Keane's observation on the distinct nature of the language of the Limpopo San may be valid in view of various documented linguistic divisions (Barnard 1992), and also established differences between San groups in the Kalahari. Dornan (1917:56) also observed that, whereas the various languages are all constructed on the same general principles, the vocabulary can be very different.

The Botswana hunter-gatherers greatly valued their freedom, and also preferred to live apart from their farmer neighbours. There was accordingly not much intermarriage and low levels of social and economic alliances were formed (Dornan 1917:43). In the Shashe-Limpopo region the overall displacement of hunter-gatherers, or their incorporation into indigenous farming communities (Van Doornum 2005; Schoeman 2006), was apparently much earlier than in my research area. In the lowlands hunter-gatherers actively pursued a way of living which allowed them as much freedom as possible from enforced labour and imminent oppression, and many

indeed fled to Botswana (Stech 1885; Schlömann 1896, 1898; Kirby 1940; Breutz 1958, 1989). Dornan (1917:47) observed that it was rare to find a group of more than four families in Botswana. The largest number of individuals at an encampment with permanent water amounted to 22. Across the Limpopo (in the research area) bands of between 30 and 50, composed of family members, were said to live around the river, and that they occasionally made use of shelters (Keane 1900:73, 1920:12).

It is entirely feasible that some of the few independent bands of hunter-gatherers, who still roamed within this area (Baines 1872:34-5; Merensky map 1875; Stech 1885; Schlömann 1896, 1898; Marais 1920; South African archival records Transvaal No. 4:1952), continued to frequent OBP. The composition of bands on this side of the Limpopo is besides relatively large, which can reflect a regrouping of scattered populations. Archival correspondence reports on displacement of hunter-gatherers to the unhealthy lowlands of the bushveld where their desperate conditions required intervention by the Transvaal (ZAR) government (R2715\59; R3129/59; R3543/60; R3556/60; R4310/61; Greyling 1944; Kistner 1952; Van Jaarsveld 1971). Some 200 families were settled on European farms, apprenticed under the indenture system, or relocated to land set aside for them.

A great deal of miscegenation is apparent during the late stages of contact. The breakdown of their socio-economic practices forced fragmented hunter-gatherers to regroup under the organizational systems of indigenous farmer groups (Stech 1885; Schlömann 1896, 1898; Marais 1920). By the beginning of the 20th century most of the remaining bands around the Limpopo were incorporated into farming communities (Van der Ryst 1996, 1998a). In the lowlands many of them became subjects of the Seleka (R4310/61; Schlömann 1898:67). Other remnant groups continued to live under headmen at small villages or kraals on the Waterberg Plateau, Blouberg and the Makgabeng Plateau, around the Mogalakwena River, and near the Limpopo until all traces of these formerly widespread groups were seemingly obliterated by the late 20th century (Baines 1872, 1877; Manuscript SN 1A no. 187/790 1879; Stech 1885; Schlömann 1896, 1898; Wallis 1946; Van der Ryst 1996, 1998a). The enduring presence of hunter-gatherers throughout the Waterberg region is substantiated in the names of several localities, which endorse their once powerful presence on the landscape. In the Limpopo Basin the term Vaalpenskraal is, for example, used for various localities (South Africa 1:500 000 sheet Pietersburg SE25/26:1951; Letshwiti 1995:land claim map). It is also an official designation for

surveyed areas, namely Vaalpenskraal 377 LQ with two marked localities (1970:2327CC Kiesel), and Bushmanskraal 33 KQ with three marked localities (1970:2427AA Klippan). On the Waterberg Plateau the farm name Goergap (Van der Ryst 1998a) occurs on two maps, (1985:2428AB Sondagsloop) and (1985:2328CC Blinkwater) respectively.

8.3 INTRASITE USE OF SPACE AT OBP

Space is cross-culturally broadly similarly structured. O'Connell *et al.* (1991:73) maintain that we should not try to find activity areas and tool kits, but must ask how and why behaviour is organized as it is within sites, how that organization is reflected in the distribution of refuse, and whether our knowledge can be applied. The bounded space and physical characteristics of a shelter locality such as OBP impose constraints on the utilization of the living space (Yvorra 2003:341). The excavated levels from confined spaces commonly comprise the accumulation of debris from numerous visits that were of different durations (Gorecki 1991:255). As one of the few large shelters in the area, it is likely that OBP represented an important focal point on the landscape. The setting next to the river, and also close proximity to a mosaic of resource zones, offered sustainable support for large groups for some time. The floor space here is smaller than the camps of modern Kalahari San (Parkington & Mills 1991:359), which made for close juxtaposition of individual nuclear families. The data in the earlier chapters demonstrated the intensive utilization of OBP, and also that the spatial arrangements resulted from behavioural patterns structured along a similar use of space over time. An adherence to a formal layout pattern, as well as the consistent patterning of structural features at OBP, does not suggest behavioural *continuity* over a period of more than 2000 years, but more likely results from universally analogous site structure patterns.

Analyses of site structure must be based on theoretically and empirically justified sets of expectations about behaviour and corresponding archaeological implications (O'Connell *et al.* 1991:73). The many processes influencing spatial distributions at OBP were accordingly considered in depth. The local topography, post-depositional factors, including environmental processes and other agents of site use, and the social structure of the people who lived here, were considered in this reconstruction of the site's history. The role of site formation processes is important in determining behaviour within a given locale. At OBP densities of artefacts in the open area on the talus to some extent also resulted from natural deflation and leaching of the deposit, with resultant blurring of episodic occupation. Whereas the formal division of space

explains seemingly lower rates of deposition in the central part of the excavation grid, the preservation, recovery and analysis from this particular section were inhibited by water percolation depositing minerals, as well as accelerating the decomposition of organics.

A basic internal and universal spatial patterning (Odell 2000:281) manifested at OBP in an area-focussed communal space contiguous to the talus, with a conflation of the private hearth-focussed and structure-focussed spaces against the wall (detailed in chapter 3). The relative percentages of the aggregate for all lithics clearly demonstrate this division, as 62.6% of lithics clustered in the communal area, 9.4% in a middle zone created by the grid, and 28% originated from the private space. The spatial analysis, which partitions areas according to their proportional assemblage composition, shows robust patterns at OBP. The findings underscore the central role of fireplaces in structuring activities (Galanidou 1997:5). Over many generations the continued use of fireplaces, as structured features within a confined space at OBP, ensued in the deposition of dense concentrations of tools and waste. Various considerations, including cultural formation processes that contribute to the structure of modern hunter-gatherer campsites (Yellen 1976, 1997; Bartram *et al.* 1991; Kent 1991; Stevenson 1991), were explored to explain observed spatial patterning at OBP. Continuities in the structuring of space at OBP, which extends to the ongoing use of fireplaces over more than 2000 years, demonstrate not fossilised behaviour, but comparable cognitive patterns. An understanding of the organization of activities at the OBP shelter largely centres on the distributions of fireplaces.

The subdivision of a band into conceptually identical units corresponds with the nuclear family, and determines the layout of an encampment (Yellen 1976:131; Gregg *et al.* 1991:194). Lorna Marshall (1976a:86) says that a camp can take almost any shape, and although the fires 'are not placed in a fixed pattern ... except nearness together ... the fires are constant — the shelters are whims'. At OBP a linear arrangement for fireplaces and bedding hollows conforms to the pattern for caves, shelters and special activity camps (Yellen 1977; Bartram *et al.* 1991; Parkington & Mills 1991; Mitchell *et al.* 2006). We do not know whether there were avoidance rules that separated sexes or how it influenced the structuring of space (Marshall Thomas 1959:41; Barham 1992:47). Privacy was probably easier achieved through brush screens (Clark & Walton 1962:1-4, figs 1-2, plate 1; Wadley 1979:29). Related families have been observed to construct connected windbreaks at open camps, yet each with its own hearth (Bartram *et al*.1991:105). The family area affords the only privacy in a bounded space and controls access.

The immediate fireplace space — similar to open camps — is thus a spatial prompt for correct social behaviour (Heinz 1966:46; Marshall 1976b:354; Silberbauer 1981:235; Widlok 1999a:393-4, 1999b:160-1). Fireplaces are likewise the main structural features to separate private and shared living space. At OBP an adherence to highly standardised site organization (Yellen 1976, 1977; Bartram *et al.* 1991; Parkington & Mills 1991; Galanidou 1997; Henry *et al.* 2004), as well as a recurring use of fireplaces, created palimpsests within this patterning.

Tools are the main indicators for spatial structuring. The UCA diagrams in chapter 3 were applied to detail activity places reflected by discrete cluster formations (see Appendix F, and UCA overlays). Many activities of hunter-gatherers take place in domestic contexts. In these spaces multi-purpose tools were used to undertake diverse activities by both men and women (Yellen 1976:72; Silberbauer 1996:24). It is therefore not surprising that fireplaces at OBP remained focal in structuring activities, even when the composition of groups and the use of this locality changed, as discussed in previous chapters. Remains from longer occupations mostly reflect behavioural patterns and not activity areas (Nicholson & Cane 1991:264). The UCA cluster formations reveal patterns of long-term site behaviour at OBP. Changing configurations in site use and in relative density-frequencies within these discrete activity areas signal continuities and change at OBP. A sustained use of fireplaces for private and shared tasks is demonstrated by the data, but in differential intensities.

The single most obvious activity around the OBP fireplaces appears to have been intensive bead making as reflected by the thousands of OES beads, blanks and related tools. On the Waterberg Plateau this task was similarly scheduled, yet beads were not recovered in such overwhelming quantities (Van der Ryst 1996, 1998a). The social and symbolic meanings signalled by beads provide insights into social concerns such as gender, individual and group identities, cosmology, status (Pietak 1998:136) and group relations (Wiessner 1983; Wadley 1987). The prominent role of beads (Marshall Thomas 1959; Marshall 1976a; Silberbauer 1981; Wadley 1987, 1996, 1997b; Biesele 1993; Valiente-Noailles 1993) is mirrored by beadmaking activities at OBP. The high numbers of recovered OES represent a fraction only (Jerardino 1995:23) of the incalculable numbers of beads worn around the body, neck, legs and arms, tied into the hair, and sewn onto headbands, clothing and carrying bags (Stow 1910:46; Marshall 1976a:304-8; Silberbauer 1981:226). It takes approximately 20 minutes to rub 120 to 150 strung pieces to an even size, whereas a beaded apron of 220 by 280 mm with 4000 discs

represents 200 hours of work, and a baby harness, 60 hours (Silberbauer 1981:227). These figures not only place more perspective on the OBP statistics by showing the enormous quantities of beads in circulation, but also the many hours of beadmaking around the fireplaces in contexts which enhanced the meaning and value of beads (Marshall 1976a:304-6; Yellen 1977:91; Wadley 1987:15). Groups in the Kalahari value gifts that take time and care to make (Marshall 1976b:364-70).

Increased frequencies of OES in two pulses correspond with the general pattern of intensified activities at OBP. OES beadwork is esteemed as gifts in reciprocal relations (Wadley 1987:15). At OBP high frequencies suggest a production of goods during multi-band visiting to meet social obligations. Exchange is primarily a social rather than a purely economic transaction and goods remain in circulation through reciprocal networks (Mitchell 1996:38). The two production peaks at OBP, moreover, conform to the movement of other communities into the region. Marked intensification in production of this particular commodity can relate to early interactive situations. OES beads still remain popular in barter and trading with farming communities (Silberbauer 1981:227; Guenther 1996a:69). OES and mollusc shell beads were moreover much more commonly worn when glass trade beads were limited, as demonstrated by a large sample from the EIA village at KwaGandaganda in KwaZulu-Natal (Beukes 2000:104). Comparable high levels of bead production, albeit in lower frequencies than at OBP, are found during the initial interactive relations on the Waterberg Plateau. A marked decline of OES beads in the upper levels at OBP can relate to the use of this locality by small, dispersed groups only, and also diminishing value with the increasing availability of trade beads. It is also notable that glass and metal beads at OBP mainly cluster within the most private sleeping space directly against the wall. Beads are much appreciated and privately owned possessions (Marshall 1976a:307; Silberbauer 1981:235). In narratives recorded by Marais (1964:9, 13, 28), metal bracelets and glass beads were put on for festivities and a dance.

OES fragments decorated with rows of drilled dots were recovered from OBP. Mason (1962:321) also found several with incised lines at OBP. Some of the most obvious differences in the MSA at OBP are an apparent absence of decorated OES fragments, which are ubiquitous throughout the LSA sequence. Most of the decorated fragments were clustered around fireplaces. They most probably originate from broken OES flasks, as no OES beads are similarly decorated. Some of the designs seem random, whereas others are arranged in geometric

patterns. Recent San groups decorate OES flasks as a mark of ownership (Hoffman & Baard 1969; Marshall 1976a; Valiente-Noailles 1993).

The UCA diagrams reflect some strongly patterned differences between site-use over time. The different types of tools, and their relative densities, reflect a broad range of tool-using activities. Tasks can include maintenance of gear linked to site function, for example during aggregation when a greater range of activities such as hunting requires maintenance of weapons. Keeley (1991:258) points out complicating factors in tool use from domestic contexts. Accumulations can cluster as by-products of maintenance or disposal and *not* tool use. The proximal portions of projectile points, for instance, tend to collect in domestic refuse in evident contrast to their offsite use. The multi-purpose functioning of tools allows no separation into specific activities at OBP as most tool categories form clusters in all spaces, albeit with more emphasis on the open, communal area during the earlier part of the sequence. I earlier pointed out that clustering of bladelets, including backed bladelets, directly against the wall may reflect storage in containers in the sleeping space of individuals. Because the complete segregation of activities is also unlikely, the data should demonstrate only that some activities were performed in some areas more often than in others (O'Connell *et al.* 1991:73). This is clear in the scheduling of many activities around fireplaces, and in particular tasks such as the sewing of skins, which required the manufacture and use of both lithic and bone piercing tools. Such tasks continued to take place around fireplaces, but they are also prominent in the communal area and clearly more so during the phases of intensification.

The spatially discrete cluster formation of tool types such as blades, shaving and graving tools (adzes, spokeshaves, burins) and large flakes are clearly task-related. High-density clustering of these tool types around fireplaces correspond with distribution patterns for wooden implements, including a sharpened peg and wood-shavings, a digging stick and worked wood fragments. Equipment, and in particular quivers with poisoned arrows, is hung for safekeeping on pegs fixed into cracks on the wall. This area, which is contiguous to the test trench, contains generally high densities and a diverse range of tools and artefacts. Densities from the test trench itself, with a diameter of only 500 mm, are comparable and frequently even higher. It is likely that the configurations at OBP account for this trend, as the test trench is close to the greatest overhang and consequently largest available space for activities during multi-band visits. This important part of the site was not excavated as Mason's nearby trench had not been

backfilled and the collapse of his sections likely impacted on the integrity of this space.

Hearths as the loci of private space are in general conspicuous at encampments and in archaeological contexts, whereas the identification of communal activities can be fairly problematic. The ǂKade central Kalahari San considered everything beyond the fire as public space (Valiente-Noailles 1993:114). At OBP the communal activities are the furthest removed from the shelter wall. The open, shared space contains a peripheral refuse zone located on the talus. The spatial structuring corresponds broadly with open encampments and also sites with bounded space(Yellen 1976, 1977; Parkington & Mills 1991; Galanidou 1997). As the central section of the grid abuts the two formal areas, there are clear overflows from tasks. The central squares contain several expediently-used fires, which again are comparable with modern Ju/'hoansi encampments (Marshall 1976a; Yellen 1977). A much narrower range of activities is performed by often single-sex groups in the special-activity area (Yellen 1976, 1977; O'Connell *et al.* 1991). At OBP this space is conflated with the peripheral shared space.

The discussion took into account factors impacting on discard. Cleanups of intensively-used private areas around fireplaces, dumping on the outer space, and also special disposal considerations are broadly structured along similar patterns in ethnographic contexts (Marshall 1976a; Yellen 1976, 1977; Silberbauer 1981; Bartram *et al.* 1991; Keeley 1991; O'Connell *et al.* 1991). At OBP both the utilization of the shared space, and the discard pattern, which resulted in very high densities, have functional explanations in conforming to the drop and toss zone principle (Binford 1978:344-8,1983:153). Whereas waste was discarded in the open area, it is likely that significant quantities would have been removed beyond the dripline.

The overwhelming abundances of all materials in the shared space — and lithics in exceptionally marked degrees — are demonstrated by the UCA diagrams in chapter 3, and only special activities are detailed here. The co-occurrence of larger stone slabs used as anvils, punches and hammer stones confirm that knapping and lithic reduction was primarily carried out in the communal area, and in particularly during visits of extended bands. The aggregate of formal tools, which forms major clusters in the shared area, suggests a variety of tasks during which virtually the entire range of Holocene microlithic tool types (Deacon 1984a, 1984b) was manufactured, used and maintained. Only the densities and spatial patterning of tool types change during the various occupations, since similar tools continued to be produced.

The largest part of the OBP assemblage conforms to classic Wilton Holocene assemblages south of the Limpopo (Mitchell 1996:371). A key feature in Holocene assemblages is greater regionalisation of material culture (Mitchell 1997:388-90). At OBP it is expressed in a focus on distinct raw materials for lithics, singularly high accumulations of colouring materials, backed scrapers, and a well-developed non-lithic sequence. The OBP assemblage exhibits close parallels with lithic and non-lithic components of assemblages from Botswana (Walker 1998a:76) as pointed out in chapter 2. In the Shashe-Limpopo region most assemblages are chert-dominated, and their formal component shows emphasis on endscrapers (Van Doornum 2005:84-156). At OBP end- and sidescrapers are present in equal proportions, and backed scrapers are a significant scraper type within the formal assemblage. The lithics and frequencies of worked bone, OES beads and decorated OES flasks at OBP differ noticeably from the Shashe-Limpopo sequence. In spite of the regional differences, the two areas share more similarities than are apparent between OBP and the Waterberg Plateau. The character of especially the lithic assemblage on the plateau is more closely matched with assemblages from the Gauteng highveld (Wadley 1986a, 1986b, 1987).

Only the endscrapers from OBP have adzing, which confirms a differential use of scraper forms (see also chapter 4). Different kinds of scraper backing may not signal social identity, but instead differences in hafting, use or resharpening (Barham 1992:48-9; Mitchell 1997:389). Backed scrapers, like all other artefacts, were made and used in social contexts. It is also significant that this scraper type has the highest relative frequencies (50%) of ochre residues (Williamson 2006). The spatial patterning of backed scrapers at OBP is diverse, but mostly shows a strong correlation with fireplaces. The fact that endscrapers are not spread out in homogeneous low densities across the living space, confirms specific task-related activities. An emphasis on stylistic elements often reflects changing social boundaries (Barham 1992; Mazel 1992; Wadley 1992; Bartram 1993). This is not particularly clear in the temporal distribution of scrapers at OBP. Marked exponential increases in their production and use earlier in the sequence conforms to the general pattern of social and economic intensification.

A locational trace refers to the position where an artefact was last used. It is closely related to relational/associational traces, which describe different interactors that co-occur (Schiffer & Miller 1999:53). Such associations of artefacts can aid the reconstruction of activities. At OBP an anvil with several hammer stones co-occurred with a scatter of lithics in primary contexts,

affording a rare instance of a single task-related recovery on a living floor (see Appendix N). The variety of tools and debitage is interesting. The primary materials consist of chunks, chips, cores and flakes. Cores are on quartz, crystals and haematite. The pieces of debitage are all quartz. The flakes are felsite and CCS. The formal tools are made on quartz, crystals and CCS. The scraper forms comprise 10 backed specimens, 1 double-sided tool, 2 sidescrapers, and 1 side-and-end scraper with adzing. There are 6 segments, 4 bladelets, 1 borer and a backed, utilized tool. I explained in chapter 3 how only lithics clustering around the anvil were selected to prevent a conflation of different activities. The data reflect a sequence of production activities from primary reduction to retouch into formal tools, and the use of formal tools in manufacturing a stockpile of tool types.

The manufacture and use pattern for bone tools is somewhat different from lithic production. This is particularly evident in grooved stones as components of the manufacturing process. Their cluster formation is less homogeneous, with distinct high densities forming around activity-based areas within the shared space, yet also very evidently around fireplaces. The patterning suggests that most of the primary production processes were against the talus where the generated waste was less troublesome and easily disposed of. The subsequent retooling of blanks and roughly shaped bone tools into arrow components and awls, and also uses of the latter in stitching clothing and other articles while sitting around the fireplaces in more social contexts, are also apparent as discussed in chapters 3 and 6.

Material remains cannot always separate out precise functional aspects because there is virtually no dichotomy between practical and non-utilitarian practices in forager social and economic organization. Haematite is associated with supernatural powers as discussed in chapter 5, and an eminent focal role for the site in the procurement and processing of pigments most likely contributed to ideological perceptions analogous to ethnographic observances. Whereas OBP is cited for the exceptionally high incidences of ochre and specularite from MSA levels (Mason 1962; Watts 1998, 2002; Mitchell 2002; Wadley 2005a), a great deal of specular haematite and other colouring materials were collected throughout the LSA sequence. The extensive functional purposes, and also the universal ritual use, of pigments are discussed in chapter 5. Whereas haematite is common within the area as is evident from ore bodies that were extensively mined by indigenous farming communities (Van der Ryst 1998c:8:100-2, map 2.3), the energy expended on collecting and transporting these heavy material would have been

high. Trips were often scheduled to collect pigments from a rich source (Bleek & Lloyd 1911:379; Dunn 1931:110). This was likely also a consideration at OBP. The sheer quantities argue for more than domestic use. Mitchell (1997:390) cites Bleek and Lloyd (1911:379) to illustrate that pigments moved on a larger scale than most other commodities since rich sources were localised and subject to territorial ownership (Gordon 1994; Guenther 1996a). Watts (2002:8) suggests a nearby source in view of the very high volumes of specularite from MSA levels at OBP. The valued role of pigments for exchange — and intensified trade with indigenous farmers — can go some way towards explaining the very large quantities collected and hoarded. Active participation in trade routes is well documented (Wilmsen 1995:90-1).

Ochre is commonly pounded to a powder to be mixed with fat (see chapter 5), yet striations on many ochre chunks also suggest direct applications. Watts (1998, 2002) believes that ochre was generally ground. By linking analytical results a pattern is revealed of the roasting, processing and probable storage of haematite in the central space at OBP. Here chunks, a large anvil stone with shallow depressions, hammer stones and also carbonized seeds were recovered in close proximity to a discrete charcoal patch on fire-reddened soil. This is similar to task-oriented fires in a communal space, where snacking of plant foods (and especially snacking of meat after a successful hunt) can take place (Marshall 1976a; Yellen 1977). It is significant that most of the recovered seed fruiting structures are *Strychnos*, since some species contain a viscous, red oil. Exceptionally large quantities of carbonized *Strychnos* were recovered from fireplaces. In chapter 6 the extensive functions of similar plant oils were outlined, and it is suggested that the red oil extracted from baked seeds was mixed with ochre. The fact that the seeds are not reduced to ash reflects anaerobic conditions (Sievers pers. comm.). It suggests roasting in piles where seeds exposed to higher temperatures became charred and unusable, and therefore left in the fire.

The mixing of ochre with fat for storage is customary, and a similar practice can explain the very high frequencies of haematite together with the many seeds of this species from fireplace deposits. Also, a nearby tortoise carapace scute suggests use as a container, and fragments of ochre-stained *Strychnos* shells at some distance from the fire can be linked to storage of processed pigments. Processing of ochre would be an eminently economic way to facilitate transport of the otherwise bulky, heavy substance for domestic use, exchange and barter. The many ways in which ochre were used at OBP are also evident from a cylindrical piece of ochre

paste from a deeper layer, which was stored in a horn sheath (Appendix N). The results of the residue analyses on microliths (Williamson 2006) and lithic rings (Lombard 2001, 2003) confirm the ubiquitous use of ochre at OBP. One of the lithic rings was moreover manufactured on haematite.

Finds from Layer 3 in close proximity to two small fire patches, where a range of tasks was carried out, are used to demonstrate the diversity of tasks carried out in the shared space. A perforated baboon canine pendant (Appendix N) clustered with several molars in one spot. OES beads and fragments were noticeably abundant. A bone spatula, three grooved stones, a rubbing stone, awls and cylindrical sections of composite arrows were also found on this level. Another example comes from layer 7 in the central space where two modified metacarpals heavily stained with red ochre were recovered (Appendix N. The cannon bones were probably used as pestles in the grinding and mixing of ochre, as suggested by Mason (1988:229) for similar tools with glittering ochre residues on the abraded terminals from Kruger Cave. A modified cowrie was in the same spatial contexts, but lower down in layer 8 (Appendix N). As arbitrary levels were used, a close association is likely. The dorsal part of the cowrie is commonly removed for sewing onto articles of wear. The OBP specimen could have been passed on through exchange, or directly obtained from the nearby farmers. Favourite ways of wearing cowries are to tie them into the hair or on headbands (Schultze 1907:643; Notcutt 1935:64; Marshall 1961:241 & fig. 5). A lithic ring section was also recovered from level 8 in the shared space against the talus (Appendix N).

Although the ceramics are discussed under 3.5.1, the interrelatedness of pigments and Bambata needs to be addressed. The spatial distribution of Bambata is highly distinctive in clustering around the fireplaces. In contrast, the other ceramics have a more homogeneous distribution, yet with clusters of high densities in the communal space. Their discrete spatial use reflects restricted functioning, or storage as privately own gifts. Since Bambata ceramics were the earliest exotic introductions, it is likely that limited access enhanced their value for exchange similar to glass beads and metal ornaments (Arbousset & Daumas 1968; Wadley 1979; Silberbauer 1981; Guenther 1994; Mitchell 1996). I suggest that some Bambata could have been holding vessels for ochre in various domestic contexts, but also during transitional and ceremonial events. Such singular functioning in ritualized contexts was likely to impart special meanings to the vessels analogous to gifts made in social contexts (Yellen 1977:91;

Wadley 1987:15).

Whereas there is some vertical displacement at OBP, several ceramic clusters, the dispersal patterning of distinctive materials from tool manufacture, and single-activity events, are consistent with a high degree of site integrity. The discourse about the visibility of activity areas, and whether behaviour can adequately be known from material remains, generated models with a focus on artefact clustering and on the refitting of lithics (Kent 1991; O'Connell *et al.* 1991). Short-term, single occupation events that are more amenable to intrasite spatial analyses, are mostly not applicable to shelter sites. At localities with bounded spaces, such as OBP, deposits collecting over long periods reflect patterns in site-specific behavioural events. Discard patterns or caches are important in the spatial reconstruction of activities. At OBP a surface find of a cache of pegs from the northern section allows the reconstruction of a specific event. The pegs were recovered within a setting of both edible and unpalatable charred seeds (Appendix N). *Strychnos* in the sample can indicate processing for direct application of the oil on a pegged-out hide similar to the use of *Ximenia* (Valiente-Noailles 1993:60). The presence of edible fruiting structures probably indicates roasting for snacking while working on the hide. The Kua say that '[t]he work we most enjoy is the scraping of the skins' (Valiente-Noailles 1993:59). During hide-working the conversation of Ju/'hoansi men is all about the hunt, which is a topic they never tire of (Marshall 1976a:289). The 50 complete and broken whittled pegs (see chapter 6) conform to their use in pegging out a skin and discard on the spot, resulting in piles of from 40 to 50 pegs (Yellen 1977).

Finally, the spatial structuring with a conceptual inside/outside layout creates a central communal space, which at open camps, is used for dances (Parkington & Mills 1991:357). Although this space at OBP is extremely confined and dances could well have taken place outside the shelter, it is also feasible that especially small groups could have used this space to harness the potency of the many painted images on the wall. The dance is the focus of their ritual life (Lee 1998b:54). Whereas there is no firm evidence of such activities at OBP, a panel on the Waterberg Plateau of a group dancing in a circle demonstrates the universality of the dance and its importance in the functioning of group dynamics. Dornan (1917:53) says that the Hietshware, like all of their kind, were passionately fond of dancing and then specially under a full moon, when the nightlong activities were accompanied by songs of the dance.

8.4 GENDERED ACTIVITIES AND TOOL USE

Mitchell *et al.* (2006:90) caution against the unsubstantiated identification of gendered activity areas, and the pitfalls of assuming continuities from the ethnographic present. However, some rules and norms regulate the work division of men and women in any society (Jarvenpa & Brumbach 2006:97). Gender is a cultural construct (Johnson 1999:123), and segregation by sex is of limited significance among hunter-gatherers. Lee and Daly (1999:5) in their discussion of commonalities and divergences among hunters and gatherers, emphasize that gender is another dimension where considerable variation is found. Even the common basic gendered division of hunting and gathering, and the different gender roles as emphasized in rites of passage, are not strictly adhered to (Marshall 1960:335; Heinz 1966:26; Tanaka 1976:101; O'Connell *et al.* 1991:74; Barnard 1992:60; Guenther 1996a:78; Lee 1998a:xxvi). Economic dependency links genders. Women contribute the bulk of the foods which are not only of daily importance, but critical for their long-term survival. The activities of men in delivering the much valued meat are of a more public nature (Kelly 1995:267-70; Bird & Bird 2005:87-8). Specific tasks following from such a basic division are carried out in gendered contexts. Specialization is not a feature of hunter-gatherer organization, yet the separation of tasks allows the development of greater expertise and a more economic allocation of the typically limited labour resources of small bands. This interrelatedness is demonstrated by Megan Biesele (1993:196) when she says that '[t]he equal-but-different male and female symbolic roles extend to many events and items which interact in the tales'.

Jarvenpa and Brumbach (2006:101-3) argue that hunting is a total enterprise from which women are not excluded, but that their role is underestimated. They are involved in preparations for a hunt, help to redistribute and process the meat into food, and rework products of the hunt into ornaments and tools (see also Valiente-Noailles 1993:83-6 for gendered activities among the Kua). A study conducted among a recent San group consisting of primarily G/wi, G//ana and Kua confirms the active participation of women in hunting practices. Several women set traps, accompanied their husbands on a hunt, participated in tracking, or hunted opportunistically by killing and collecting small animals (Guenther 1996a:78; Kent 1996:130; Biesele & Barclay 2001:67-84). The interrelatedness of gendered activities is perhaps best illustrated in the functioning of a dance. It begins with the women taking on a seemingly more static and supporting role in singing and the rhythmic clapping of hands, except that their acts are essential for the men to reach a state for trancing and healing, and

then the women are also drawn into the circle (Marshall 1976a:175-6; Valiente-Noailles 1993:84-5).

Activity organization is a primary source of spatial patterning. Thus, gender-related remains are commonly associated with male and female locations around fireplaces (Rigaud & Simek 1991:200; Stevenson 1991:289). The binary arrangement of gendered space around a fire, structures social relations (Marshall Thomas 1959; Marshall 1976a; Yellen 1976, 1977; Bartram *et al.* 1991; Kent 1991, 1998; Parkington & Mills 1991; Wadley 1997, 1998; Guenther 1999). It is also a theme within narratives (Biesele 1993). Ethnographies confirm that gender delineation is more pronounced in the formal private spaces. This applies specifically to seating positions. In the absence of a formal hut sticks the Ju/'hoansi used vertical sticks for the required orientation and to conform to avoidance rules (Marshall Thomas 1959; Marshall 1976a; Wadley 1987). At OBP no brushwood or other materials employed in demarcating space (apart from the bedding patches between fireplaces) were recovered. Prescriptive behaviour is also more formally structured during alliances (Wadley 1987:9). The strongly defined gender roles translate into more single-sex groupings when carrying out tasks (Mitchell 2002:165).

An apparent different organization of space in MSA and LSA contexts (Wadley 1987) extends to differentially structured gendered activities (Wadley 1996, 2000a, 2000b). Analogous spatial organization is evident from Robberg levels and continues throughout the Holocene as detailed by the UCA at Rose Cottage Cave in the Free State (Wadley 1996:73, 2000a:23-8, 2000b:94-7). Formal structuring of space at OBP is along similar lines. At open sites fireplaces serve as a focus for single family activities by members of both sexes, but also single-sex tasks by several parties during aggregation (Yellen 1976, 1977; Bartram *et al.* 1991; O'Connell *et al.* 1991:66). Work is cooperative, integrated with socialization and also rituals, and people enjoy sitting together when carrying out activities (Marshall 1976a:181; Lee 1998a:xxi). In explaining the circular fire formation, the Kua say '[i]t's thus because we love each other. We make this sort of circle so that the voices can collect in a sort of one place' (Valiente-Noailles 1993:114). The Hai‖om use different terms for fires within and outside huts (Fourie 1965:22). Single-sex and mixed groups may carry out tasks in the communal space, yet rarely concurrently (Yellen 1976:192-5; O'Connell 1991:62). Whereas these spaces at OBP offer the greatest potential to separate gendered activities, their repeated use obscures finer details. Also, the close

juxtaposition of individual fires doubtless conflated materials deposited through opposing men/women tasks.

The reuse of fireplaces by quite different social groupings contributes to a conflation of deposited materials. The UCA model can be used to infer separate episodic events by defining cluster formations and relative density values. Cluster overlaps between distinct classes of material (e.g. OES/bone), tool types used (e.g. borers, grooved stones, anvils, punches) and completed goods (beads/awls) suggest activities performed in social contexts (see Appendix F, and UCA overlays). The more recent occupations conform to informal behaviour during dispersal. Joint activities by hearth groups are primarily focussed on private fireplaces. The fact that the scraper aggregate forms density clusters in both major zones likely shows separate tasks, with messy chores such as skin working carried out in the peripheral space. Backed scrapers were similarly used by core groups while sitting around the fire (see Appendix F). Earlier in the sequence, when groups were large, these tools were used around the fires, but in much higher proportions in the shared area. Space constraints doubtless dictated some of this patterning. The overwhelming focus on the shared zone during intensified activities is accompanied by discrete cluster formations of virtually all classes of cultural material around fireplaces. This patterning suggests more formal separation into single-sex activities during alliances (see Appendix F).

Whereas beadmaking, skin working and the production of arrows are probably the most segregated activities, tools used in these activities are interchangeable. Grooved stones have a particular interesting configuration (see Appendix F:124). Their spatial distribution is mirrored by analogous patterning in the distributions of worked bone and, especially, beads. Grooved stones were exclusively used around fires when only nuclear groups frequented OBP during the more recent period. Informal behaviour, where tasks by both sexes are carried out around the fire, can be illustrated by types of finds recovered from around fireplaces. Recovered objects, which include a bone cylinder with finely incised geometric lines, a carnivore tooth, bone arrow sections and awls, four grooved stones, abundant OES beads, decorated OES fragments, nacreous shell fragments, shell beads and numerous scrapers, suggest a wide range of tasks carried out in private family-oriented spaces.

During the earlier underlying occupations the UCA diagrams defined random, yet discrete, patches of high-density cluster formations for grooved stones. The formation of high-density clusters of grooved stones in both formal spaces can reflect single-sex task groups (see Appendix F). Valiente-Noailles (1993:124) says that the Kua like close contact, and that '[w]omen and girls often bundle together'. The proportional compositions of bone tools or beads indicate where sets of equipment, consisting of grooved stones, anvils, hammer stones and punches, were likely used by different sexes (see Appendix F). The overall pattern is one of bone tool production carried out by men in the open communal area, with beadmaking by women taking place around the different fires of the inner space. The pattern can be ambiguous, as OES is not the prerogative of women only, since men use fragments in making dancing rattles. They also make the OES containers. Some mixing of materials likely resulted from different types of activities that took place around the fires at night. The final stages of production, such as straightening wooden shafts, decorating bone tools and sewing, are tasks commonly carried out with a hearth group. Although men are responsible for curing the skins, women pound fresh bone into powder for cleaning and softening karosses (Marshall 1976a:414). Men make and use awls in sewing skins into clothing, but women similarly need awls in their beadmaking and when they sew beads onto skin clothing and receptacles (Marshall 1976a:415; Valiente-Noailles 1993:84).

At OBP an interdependence of male-female use, but in quite different tasks, accounts for a proportional clustering of the most commonly used formal tools around fireplaces (Sassaman 1992:249-62; Odell 2001:78-9; Jarvenpa & Brumbach 2006:99). Food processing and maintenance activities by women often require the expedient use of stone tools. The autonomy and conscious decision-making of women over their own activities are similar to that of men (Leacock 1998:140-1; Jarvenpa & Brumbach 2006:98). Throughout the sequence scrapers, awls, borers and bladelets, as the most commonly used tools, functioned in tasks carried out around the fires. The small anvils in the private space were likely used by both sexes. Men are primarily the makers of the tools, yet the ethnography is also clear on their use in domestic settings, where women can also make some as needed. It depends on the context, for instance making fire is the work of men and although there is no prohibition against their using firesticks, women seldom need to (Marshall 1976:82; Valiente-Noailles 1993:85). At OBP recovered fragments of firesticks of the thicker, objective (female) sections, are on a soft wood (Silberbauer 1965:53, 1981:229; Heinz & Maguire 1974:37; Van Wyk & Gericke 2000:282-3).

Even in such a basic tool the use of hard/soft woods, as well as labelling the different pieces as male/female, underlines the pervasive interrelatedness of social and economic elements found among hunting and gathering groups. The sections are likewise described as male or female in narratives dealing with the origin of fire (Marshall 1962:232-3). A digging stick fragment at OBP was retrieved from the inner area where private goods are stored. Among the Ju/'hoansi a man makes his wife's digging stick, but she herself sharpens it with her husband's knife or axe (Marshall 1976a:98-100), and both Kua men and women use digging sticks (Valiente-Noailles 1993:85).

The most common single activity in tool maintenance is arrow making (Bartram *et al.* 1991:69). Cluster formations in the communal area of all three tool types with likely uses as arrows (segments, bladelets and bone points) can be attributed to men's activities. Whereas the production of segments , as arrow inserts (Deacon 1992:5; Deacon & Deacon 1999:150, 159), was mainly located here, numbers are too low to be significant. Backed bladelets are also prominent. However, the ethnographic record is not clear on their possible use as arrow components. The residue analysis confirms the presence of ochre on bladelets, which can relate to hafting practices or merely to use with ochre. Quartz and crystals were favoured for these tool types. Points of white quartz for arrowheads were interpreted as probably crystals: 'The Grass *Bushmen* //kàbbo says, make arrowheads of white quartz points (crystal points, as far as could be understood)' (Bleek & Lloyd 1911:227).

The many bone arrow sections and majority of grooved stones from the communal area undoubtedly reflect arrow manufacture. Hunting is hard work, and subject to magical control (Lee 1998b:52). Women are mostly excluded from the preparation of hunting equipment and rituals as femaleness negates hunting prowess (Marshall 1976a:177). When a hunt is planned, the men endlessly talk about it while poisoning their arrows and preparing equipment (Dornan 1917:45; Marshall 1976a:130-40, 289; Silberbauer 1981:209; Liebenberg 2001:55). High-density clustering of tool types suggesting manufacturing and maintenance of hunting equipment, is more common at OBP in the communal space during the preceding, earlier use of this locality by large gatherings (see Appendix F). This pattern conforms to scheduling for communal hunts during the aggregation phase. Arrows are strongly associated with hunting and men (Barham 1992:45), yet we do know that women can own arrows and also that arrows feature in exchange (Marshall 1976b:366; Wiessner 1983:253-76). The fine engraving on an

example from OBP (Appendix N) reflects the intrinsic value of arrows. Whereas the distribution patterns of bone awls and other piercing tools suggest that working skins and sewing into garments and bags are structured for both formal spaces, there is also clear emphasis on the shared area in the much higher densities shown by the aggregate for these tool types. Activities typically requiring more space were doubtless carried out in the open area, and most of the retooling took place around the private fires.

Manufacturing implements and larger-sized passive support pieces of anvils and nutting/ore processing stones, as well as the bulk of informal lithics (cores, chunks, chips, flakes), form high-density clusters in the open shared area (Appendix F). This suggests that the communal space was focal for tasks usually carried out by men (chapters 3 and 4). The natural constraints of a shelter site require that a large enough area is investigated to identify gendered tasks within the communal and private space as distinctive sets of refuse-producing activities. This applies in particular to the peripheral area at a site, which commonly contains the greatest diversity in special activities that generate waste (Yellen 1976:108-9, 130-1; O'Connell 1991:62, 73-4). I demonstrated earlier how high-density formations defined by the UCA identified tool types with potential gendered associations, and which were used for specialized tasks. However, secure gender attributions to the *use* of tools can be difficult to substantiate (Kent 1998:39-67; Wadley 1998:69-81). For instance, segments which I attribute to the domain of men, have been shown to retain residues of both animal and plant origins that suggesting differential use (Wadley 1998:80-1). The lithic rings, for which gendered use is expected, also occur in both major zones, and residue analyses demonstrate reuse for subsistence-related and functional tasks (Lombard 2001, 2003).

In the next section the subsistence pattern is discussed. Economic and social changes brought about by the relative contributions of gathered, hunted and domestic foods gradually create imbalances that also impact on gender equality (Webley 1997:179; Leacock 1998:156-160; Lee 1998a:xxvi; Wadley 1998:77). We increasingly turn to gender variables for the interpretation of technologies and labour organization to account for variation that cannot be explained by other means (Sassaman 1992:249-62). At OBP no such incipient changes — usually discernible in degrees of change — are obvious as the changing patterns that have been observed can result from many other factors.

8.5 COLLECTION, CONSUMPTION AND DIETARY IMPORTANCE

Fire, water, and food hold our lives (Marshall 1976: 85)

The impoverished archaeological remains can never reflect the rich resource base available and used (Yellen & Lee 1976:38; Fox & Norwood Young 1982:26; Hitchcock *et al.* 1996:162-3). Studies among 20th-century forager populations demonstrated not uniformity, but great diversity. Foraging populations do not fit into a single pattern in most aspects of their organization, including food preferences and mobility patterns (Odum 1972:150; Kent 1996:1). Optimal-foraging models, based on the premise that people attempt to maximize energy returns for energy expended, are commonly used to understand subsistence strategies (Kelly 1995:14, 73; Bates & Lees 1996:14-5). Accordingly, some of the criteria used in collecting entail a set of constraints and a set of options (Lee 1965; Yellen & Lee 1976; Fox & Norwood Young 1982).

Although all hunter-gatherers practise a generalist strategy (Lee 1998b:43-50; Yellen 1998:227), consumption patterns show adaptations on regional levels. Decision-making is bound by regional differences of especially plant resources. At OBP marula (*Sclerocarya birrea*) is one of the staples. Plant resources as a major focus of recent hunter-gatherer subsistence (Kelly 1995:14) are not always that evident in archaeological contexts. At OBP good preservation allows some reconstruction. The primary fireplaces of individual households are marked by densities of associated bone and waste from the processing of plant resources. In open camps there is no clear distinction between food waste and production activities around a fire (Marshall 1976:84-9; Yellen 1977:87, 95-7). At OBP there are similarly no direct correlates between food resources/waste and single-task tools. Because mobile groups carry a limited range of multi-purpose tools (addressed in chapter 4), even some of the circumstantial evidence at OBP such as digging stick remains and grindstones are tools known to function in a multitude of other subsistence tasks.

In chapter 6, where data on the faunal and archaeobotanical remains are detailed, it is apparent that a wide range of animal and plant foods was hunted, collected and consumed. The Nharo distinguish between the bush environment (!*kaa.ka*), which supplies all their subsistence requirements, and their physical camp settlement (*tsou*) (Barnard 1988:11). Although regional variability in subsistence is more apparent in plant resources, poor

preservation generally inhibits reconstruction. The preservation of mainly charred seeds at OBP confirms intensive utilization of key local resources. Food patterns in the Soutpansberg over a similar time range reflect a reliance on the trapping and collection of mainly small bovids, tortoises and hares, and with communal hunts perhaps reflected by some larger bovids (Van Doornum 2005:163). There fresh water mussel, crabs and fish also formed part of the diet, and relative increases in fish vertebrae with conversely lower numbers of small game can reflect a different focus in subsistence strategies in an increasingly full landscape. At OBP mussels elements are rare and, although used for other purposes, clearly not a major food item.

8.5.1 Meat is the real food

The nature of a faunal assemblage provides an idea of the protein packages brought to OBP because tools alone cannot adequately reflect the breadth and techniques used in off-site hunting, trapping and fishing (Reitz & Wing 1999:262). The faunal assemblage at OBP represents most of the megaherbivores, large browsers and grazers, medium to smaller ungulates and fur-bearing animals. The extent of the assemblage suggests specialized bow-and-arrow hunting, snare and pit trapping, doubtless meat robbing and fishing. The extensive faunal remains at OBP confirm hunting of game with diverse habitats, and also animals with differential dispersion patterns (Estes 1991). The diverse faunal assemblage demonstrates forays into environments from outside the immediate locality. The mammals include black rhino, hippopotamus, giraffe, buffalo, eland, both blue and black wildebeest, roan, waterbuck, kudu, tsessebe, impala, reed buck and mountain reedbuck, bushbuck, steenbok, klipspringer, grey duiker and Sharpe's grysbok. Animals with underground lairs are springhare, porcupine, aardvark, hares and various others. Suids are well-represented.

Faunal remains form one of the most significant classes of information available. Deposition patterns and formation processes are, however, ambiguous without recourse to ethnoarchaeological and documentary evidence on hunting and processing practices (Bartram *et al.* 1991:139). The larger game animals are mainly obtained through bow hunting during the wetter season when fresh larva arrow poisons are most effective (Bartram *et al.* 1991:99-104). The plant sample included *Commiphora* spp., which host the *Diamphidia* beetle larvae, which is extensively used to obtain arrow poison. *Strychnos* is another probable source of poison. Since snaring and trapping of the many smaller mammals ensured better hunting returns,

these animals undoubtedly constituted a consistent contribution to the diet. Patterns in human activities, and how people interact with their environment, can express cultural behaviours and beliefs (Hyder 2004:85-6). Among hunter-gatherers '[s]haring is the rule' (Heinz 1966:33), and hunted meat is shared subject to distinctive rules. The high social value placed on sharing strengthens and affirms ritual relationships (Biesele 1993:91). The mammals represented in the OBP faunal assemblage are mainly adults. The superior hunting and tracking abilities of the hunters that lived at OBP are demonstrated by the fact that black rhino and mature buffalo were hunted. Only two neonate Bov I, and nine juvenile animals of Bov I, II and III specimens are in the collection, which reflect planned and not opportunistic hunting. Smaller food parcels account for most of the dense bone accumulations around private fireplaces because small, snared animals are not shared and distributed to the same extent (see also chapter 6; Appendix F for the UCA diagrams on bone distribution and Appendix J for the faunal lists).

Animals killed through persistence hunting, and represented in the OBP assemblage, are antbear, porcupine, warthog, bushpig, springhare and badger (Lee 1998b:46-7; Liebenberg 2001:59; 2006:1017-25). Opportunistic hunting practices can account for immature animals, which are often run down. This practice is common in the rainy season when wet sand forces open the hoofs of game such as duiker. Poorly nourished animals are easily killed with clubs. Fragile bird bones become even more brittle after roasting or cooking. Similar practices can account for low numbers of birds at OBP, which include francolin and hornbill, the elements of one bird of prey and several of small to medium-large birds.

The easily collected riverine resources from the nearby Riet Spruit and Mokolo River are represented by cane and vlei rats. With the river so close it is not surprising that fish bones from small, medium and also large taxa, such as barbel (*Clarias gariepinus*), occur consistently throughout the LSA and MSA deposits. A single bone fish hook was recovered from Goergap on the Waterberg Plateau (Van der Ryst 1996, 1998a). Seasonal intensive collection of shellfish (Parkinson *et al.* 1992; Jerardino 1998; Orton & Compton 2006) and in the interior, large-scale harvesting of fish during spawning runs (Mitchell *et al.* 2006) or freshwater fishing (Denbow 1986; Hall 1990), are well documented. A decrease in the relative size of bone elements from more recent levels at OBP may relate to capture techniques, as these determine the yield and age profiles of fishes (Reitz & Wing 1999:269). Various technologies are evident in the fishing of barbel and different-sized fish at OBP. Trapping with baskets and

plant substances used as fish poisons (see chapter 6) were possibly the main means of fishing, as reflected by the many small fish bones in some layers.

The abundant remains of leopard tortoise individuals are indicative of their important contribution to the subsistence base. The carapaces are also suitable as containers for food, pigments, and curing medicines for ritual use (see chapter 6). Both the terrestrial and water species present in the assemblage are linked with rain (Bleek 1933:303; Solomon 1989:55; Biesele 1993:109). The many juvenile tortoises in the OBP faunal assemblage can reflect their collection for making small, often profusely decorated vessels for carrying sweet-smelling herbs, and which are moreover widely used in gift exchange. Their ubiquitous function as containers in domestic contexts is likely confirmed by the single preserved carapace scute.

Diet-breadth is important, and the prestige and value attached to hunting is linked to the fat contents of meat (Kelly 1995:65-110, 266; Liebenberg 2001:54). Animals with fat-rich bodies are often dietary staples since game animals are relatively lean (Deacon 1995:124). Mammals in the assemblage with territorial habits do have quite high levels of fat, as well as the dassies doubtless collected at the many rocky outcrops and ledges around the shelter. Large animals are usually under-represented, but elements of zebra, hippopotamus and eland show their contribution to the diet and likely social practices at OBP. The relative meat package of large animals is important in social sharing during large gatherings. The Ju/'hoansi highly value eland fat as a gift to rub on implements and the body, to eat, and for use in transition rites scheduled to coincide with large gatherings (Marshall 1976a:276, 307). The Ju/'hoansi also compare the perennially fat zebra to women (Biesele 1993:123), this animal is endowed with potency, and young girls and women often have zebra scarification (Marshall Thomas 1959:42-3; Biesele 1993:117). I discussed in chapter 6 the notion of luck and how it can be transposed onto foods high in fat, such as the grubs in honey combs, termite alates, and specific animals. Honey also has a relatively high calorific value (Hart & Hart 1996:74-5). The Okiek of Kenya used to rely on a diet of mainly meat and honey supplemented by grains bartered from farmers (Kratz 1999:222). In the Waterberg contemporary accounts and narratives report on the collection of locusts (Baines 1877), honey and also grass seeds (Dornan 1917:76, 78, 83; Cunningham & Davis 1997:480), and the chunks with termite chambers at OBP confirm that these much relished foods, although always under-represented, were also certainly collected in the past.

Differential patterns in the representation of skeletal elements and cut-marked bones between small mammals and small carnivores reflect disparate consumption and other uses for the two categories of animals (Parkington & Fisher 2006:71-80). Although fur-bearing animals are well represented, no detailed analysis has yet been done on the faunal remains from OBP. Spotted hyaena, aardwolf, badger, dassie, Jameson's red rock rabbit, caracal, serval, black-backed jackal, Cape fox, civet, African wild cat, slender and banded mongoose, tree squirrel, bushveld gerbil and indeterminate small to medium carnivore species reflect the extensive use of fur-bearing animals for their pelts, but also food and rituals. The fattiness of viverrids is also appreciated. The Hietshware liked to wear the skins of the silverbacked jackal (Dornan 1917:85). A rainmaker wore tassels of mongoose skin tied into his hair (Marais 1964:12-9; Van der Ryst 1996), and caps of this animal were worn for good luck in the Cape (Parkington & Fisher 2006:78). Small reptiles and bullfrog can be intrusive in the OBP deposits. However, the fatty flesh makes good eating (Dornan 1925:114-5; Cane 1996:45), and reptiles can be deliberately collected. Lizards also have ritualistic and specific attributes. Lizard-like images feature extensively in the late Waterberg art and are associated with rain control (Prins & Hall 1994:174-80; Van der Ryst 1996, 1998a). The fat was used medicinally and also in iron smithing (Marais 1920:5, 1964:16).

8.5.2 The subsistence base: plant foods

When archaeobotanical remains do preserve, they can contribute to the study of intrasite spatial patterning (Balme & Beck 2001:157). Whereas attrition of perishable plant foods results in under-representation, the mostly charred remains and tools of plant origin at OBP merely hint at some of the very extensive uses. Their distribution of plant fruiting structures in the main follows the general site organization (Appendix F:131). The broad subsistence base offered by the immediate savanna biome and nearby subunits meet the economic determinants for multi-band alliance visits. As sharing rules do not apply, and waste accumulates where plants are processed, a co-occurrence with locational use of tools defines localities of single-task activities, such as in the processing of pigments discussed above. Approximately 60 plant species were identified (Sievers 2006; Appendix K); however the *Strychnos* seeds from fireplaces comprise the bulk of the assemblage.

Apart from the many other uses discussed in chapter 6, the circumstantial evidence suggests that the thick oil from the seeds was used as an ingredient in ochre paste. The widely used *Ximenia* oil is processed by baking the seeds (Valiente-Noailles 1993:60), which indicates that a similar process could have been used to extract oil from *Strychnos*. Storage pits with oil-containing seeds at other sites suggest that vegetable oils were commonly used (Rudner 1982:18). Processing of paste can account for the abundant *Strychnos* from the fireplaces, and also explain the huge quantities of pigments imported onto the site. *Strychnos* and several other species are among the few plants that do feature in delayed consumption as detailed in chapter 6.

Marula is also present at OBP in appreciable quantities. Oil-rich plant foods are universally used as regional staples. Marula, a major energy-dense plant food with high fat and protein contents, has higher calorific values than many commercial nuts (Quin 1959:85-90). It is also much appreciated for its very high yields of fruit. More than 600 kg of fruit (Cunningham & Davis 1997:476) can be harvested from individual specimens from December through to March. Foods in the assemblage such as *Xanthocercis zambesiaca*, *Pappea capensis*, *Bridelia mollis*, *Tylosema* spp.,*Vangueria infausta*, tsamma, cucurbits and many others underline the diet-breadth and species diversity at the regional scale. A diversified food base is essential for nutritional success (Cunningham & Davis 1997:477; Lee 1998b:48). Abundant lean meat is not a replacement for carbohydrates as a source of energy. The Mbuti distinguish between protein hunger and calorie hunger (Hart & Hart 1996:57-9, 73).

The acute field observation skills and impressive plant lore knowledge of hunter-gatherers are still acknowledged (Biesele *et al.* 1996:12; Widlok 1999b:79). Underground foods leave virtually no traces, yet are of high dietary importance. A high level of use at OBP, similar to the Kalahari, is assumed. We have documentary evidence for a mere handful of plant species with symbolic, religious and magical meanings. There must have been many plant substances used to control events, in the quest for supernatural power, for curing, out-of-body travel, and other related tasks usually undertaken by shamans. Aromatic plants collectively known as buchu would have been widely used, and for this region such plants include the true buchu of the various *Agathosma* spp., and also *Heteropyxis natalensis*, *Croton gratissimus* and herbal teas such as *Atryxia* spp.

The premise that OBP was a preferential location in the wet season when open camps can be very unpleasant, and also when local resources are abundant, is supported by some of the seasonal plant taxa. Still, just because a certain season is not visible, this does not necessarily mean lack of occupation (Blankholm 1996:55). Movement is important to take advantage of seasonal, and often disjunctive, food parcels. The seasonal scheduling of gatherings is a mechanism to avail bands of a greater diversity of economic, but also social resources. Post-contact interactive relationships also can greatly affect patterns of movement (Bates & Lees 1996:15-6). Reconstruction of seasonal rounds is fraught with difficulties and is dependent on sampling strategies and the differential archaeological visibility of annual activities (Yellen 1977:133). Several of the available foods can be utilized or stored for extended periods. These include marula, *Citrullus* spp. (February to November), *Cucumis lanatus* (December to February), *Ziziphus mucronata* (April to August), *Boscia albitrunca* (December to February), *Vangueria* spp. (December to March), *Ximenia americana* (December to March), *Cordia* spp. (December to June), *Vitex* spp. (January to June), *Strychnos* spp. (December to January) and *Apodytes dimidiata* (December to June) (Silberbauer 1965:46; Tanaka 1976:108; Wadley 2001a:44). In the Waterberg the pulp and seeds of *Mimusops* spp. (October to April) are formed into cakes, dried and stored. The data therefore lend some support to a summer occupation. Collection of plant foods of dietary importance, and in particular soft fruits, has to be scheduled to coincide with their ripening to prevent baboons and other animals from completely depleting resources. Reproduction data concerning small mammals, the mainstay of the OBP meat diet, are impractical for inferring seasonality as seasonal breeding is not pronounced in duiker, klipspringer and steenbok (Estes 1991:31, 44, 56).Tortoise eggs hatch after the rains begin. The remains of many young tortoises in the assemblages suggest collection in mid-summer (Wadley pers. comm.).

8.5.3 Tool use in the processing of plant and animal substances

The extensive use of preferred species of wood for subsistence implements and domestic utensils and fuel wood, as well as roots, bark, dyes, reeds and grass, cannot be reflected in any one assemblage. A separate residue study confirmed that the bulk of a sample of more than 60 microliths — of mostly formal tools — that was drawn from across the site was employed in plant processing (Williamson 2006; see also chapter 4). Blood film, animal tissue, fat and bone collagen on a backed bladelet and sidescraper do reflect butchering or the processing of raw meat (Williamson 2006:2). All the scrapers have accumulated residues of

plant origin, resin and ochre. Some scraper types seem to have been used more intensively for plant processing, as sidescrapers and side-and-endscrapers contain relatively more starchy deposits. Starchy residues on tools mostly relate to plant food processing (Balme & Beck 2002:158). Processing starch-based staples such as bulbs and tubers of the abundant *Cyperus* and *Nymphaea* spp. would leave similar accumulations. The pattern is clearly one of multi-functional tool use, so that only a few instances of locational and specific utilization could be inferred from the co-occurrence of types of artefacts, raw materials, completed tools and waste.

8.5.4 Post-contact change in economics

Moving frontiers can impact on the availability of food resources. It is argued that hunter-gatherers with immediate-return systems are perfectly capable of coping with the technical aspects of agriculture and pastoralism, except that the social implications from rules governing sharing, ownership and association inhibit such change (Whittle 1996:35; Widlok 1999b:73-9). All the domestic faunal remains at OBP are from adult specimens. Low numbers of domestics are common for LSA assemblages. The consumption of domestic meat is infrequent among farmers themselves, and mainly non-reproductive animals are culled (Beukes 2000:31-2). Such meat as hunter-gatherers acquired, was likely consumed on the spot. Cattle are valued, and a longer life expectancy in cattle means that this source of meat would be rarely available to hunter-gatherers. Dornan (1917:39) reports that the Botswana hunter-gatherers sometimes resorted to poaching.

The presence of both cattle and sheep/goat remains at OBP suggests a degree of integration into farmer economic and social systems. We know that they were seasonally coerced in contributing to farmer activities such as hunting, house building and tilling of the lands (Schlömann 1898:66-70). During the late contact phase some of the Waterberg hunter-gatherers resorted to a sedentary lifestyle and no longer lived in open and shelter settlements, with the result that the remains of domestic animals will not be found at shelter sites. They planted and kept domestic animals, such as goats and even a few cattle (Marais 1920:3-5). Baines said that the Basarwa frequently lost goats to the many crocodiles in the Limpopo. It is, however, not clear from the context whether they were herding their own stock (Wallis 1946:746). One Basarwa was particularly proficient in the smelting of iron and produced tools from the smelt — a trade acquired through his former African farmer master (Marais 1920:4-5,

see also chapter 5). In Botswana and the Kalahari some groups cultivated beans, melons and sorghum (Breutz 1958:52), whereas others planted nothing (Dornan 1917:44; Schwarz 1928:132).

Food is a marker of social boundaries, and the adverse impacts of changing hunting practices in the Kalahari are reflected in consumption (Widlok 1999b:73, 91). Large game densities, especially, correlate with distance from cattle posts (Bartram *et al.* 1991:100). Goats graze on mongongo, and the Hai‖om now collect nuts from the droppings of penned stocks (Widlok 1999b:95). Communal hunting with farmers was likely to transpire in differential and uneven deposition patterns of faunal remains at OBP. This may have impinged not only on their own hunting patterns, but also on their share of meat, as they received the less choice parts. In addition, hunter-gatherers in the Waterberg paid tribute to farmers, and exchanged meat for domestic grains (Stech1885; Schlömann 1886, 1898; Keane 1900:73, 1920:120-1; Dornan 1917:35, 49; Marais 1920:3-51; Kistner 1952:238; Van der Ryst 1998a; see also chapter 6). Post-contact uses of vessels increasingly resulted in differential preservation; for example, cracking of long bone elements before cooking impacts on faunal preservation (Yellen 1991:172). All of these practices as outlined doubtless impacted on deposition patterns at OBP.

Access to other resources often has little effect on procurement strategies (Kent 1996:138). Hunter-gatherers are known to employ opportunistic and flexible relationships as and when needed (Vierich & Hitchcock 1996:110). Data on activities during the late contact phases in the Waterberg confirm a generalist strategy, with a reliance on plant foods while following game (Stech1885; Schlömann 1886, 1898). Near the Limpopo an old women and a girl were seen gathering locusts (Baines 1877:65). However, restricted mobility and access to favoured foods, but also increasing dependence on farmer economies for goods outside their own economy, enforced a change towards smaller food packages. Availability of, for example, carbohydrates can influence the choice of gathered foods (Bates & Lees 1996:15-6). At OBP small-sized fish bones in the more recent deposits suggest the intensified use of local resources. The reported starvation of hunter-gatherers in the lowlands resulted in the final disintegration of their social structure as families and groups were placed on European farms, indentured or settled at villages of indigenous farming communities (R2689/59; R2715/59; R3129/59; R3543/60; R4310/61; Kistner 1952:232).

8.6 CHANGING IDEATIONAL BELIEFS

8.6.1 The ceramics

8.6.1.1 Bambata

At OBP the incorporation of ceramics into a deposit with clear hunter-gatherer affinities leaves no doubt that they were certainly the users of many Bambata vessels. That other groups may have introduced some of the Bambata to this locality, is also highly likely. I discussed in chapter 6 how the techniques, styles and contents of the different rock arts at OBP can be used to demonstrate that at least three different groups used the shelter for painting and social rituals centred on the rock arts. The OBP rock art sequence corresponds to the traditions recognized for the Central Limpopo Basin (CLB). The numerous and often faded earlier paintings at OBP can be unequivocally tied to hunter-gatherers. Their mainly monochrome fine-line classic paintings dominate at most of the painted localities across the region (Eastwood & Smith 2005). Next in the sequence is the Geometric Tradition, which contains finger-painted representative and non-representative imagery and also handprints. This distinctive art form is now assigned to early herder groups, and in the CLB appeared during the first millennium AD (Smith & Hall 2000; Smith & Ouzman 2004; Eastwood & Smith 2005). The more recent and mostly finger-painted images that co-occur with classic San art at most of the painted sites in the Waterberg can be positively linked to indigenous farming communities. In this art of northern Sotho-speakers three sub-divisions are recognized, namely an art of boys' initiation, an art of girls' initiation, and an art of political protest (Moodley 2004; Namono 2004; Van Schalkwyk & Smith 2004; Namono & Eastwood 2005; Eastwood & Tlouamma 2006). Whereas the farmer imagery at OBP can be associated with the rituals of initiates of both genders, there is no protest art. The farmer ceramics from at least four different periods (discussed under 8.6.1.3) support the use of the shelter by both early and later farmer groups.

Many small collections or isolated sherds of Bambata are known from cave, shelter and some open sites in Botswana, Zimbabwe, Namibia and South Africa (Cooke 1963; Robinson 1966; Walker 1983; Sadr & Smith 1991; Huffman 1994, 2005; Smith & Jacobson 1995; Wadley 1996a; Reid *et al.* 1998; Van der Ryst 1998a; Hall & Smith 2000; Van Doornum 2005), but there are only a few representative collections. It is therefore significant that at the Biennial Conference of the Association of Southern African Professional Archaeologists (ASAPA) held at the National Cultural History Museum in Pretoria in April 2006, the OBP Bambata

assemblage was recognized to be one of the more comprehensive collections.

The typically thin-walled, densely decorated ceramics are referred to in the literature as herder pottery, EIA Bambata (Denbow 1986; Huffman 1994; Smith & Jacobson 1995; Reid *et al.* 1998; Sadr 1998, 2005; Hall & Smith 2000; Van Doornum 2005), and more recently, Bambata A and Bambata B (Huffman 2005). Bambata has no possible antecedent in southern Africa. As one of the earliest pottery expressions in southern Africa, it is present in deposits that date to the 1st and up to the 5th century AD. These distinctive ceramics commonly occur in contexts where the faunal remains from domestic animals are also present. The identification of previously unknown Early Pastoral ceramics in shelter contexts at an early date of approximately >3000 BC in the Libyan Sahara provides interesting data on technological variability and adaptation patterns from the early to later pastoral phases (Garcea 2003:111-6). Pastoral Neolithic ceramics were also recently recognized In southern Tanzania, and likely similarities between the East African Pastoral Neolithic material culture and finds from herder localities in southern Africa offer new avenues to be explored (Mitchell & Whitelaw 2005:216). It is clear that the development and spread of pastoralist economies are still imperfectly understood and that such new discoveries may alter current interpretations.

The debate on Bambata revolves around the establishment of a firm identity for the makers and users of the distinctive vessels. There are various viewpoints as discussed in chapter 7 (see 7.2.1 for the dates and contexts in which Bambata ceramics were found). This particular pottery tradition could have developed through incipient pastoralism. Others advocate migrations, diffusion and trade or exchange networks that introduced vessels and domestic animals into the southern regions. Herders could be involved in some of these processes, but it has been proposed that the ceramics were produced by indigenous farming communities. Most of the larger assemblages originate from cave or shelter localities in association with a forager signature that includes lithics and bone tools, but also low numbers of mainly sheep. Although sherds have been recovered from open sites, the cultural affinities of assemblages from the rare village sites are not clear.

The relationship between the makers and the users of Bambata remain unresolved. The different Bambata assemblages display technological similarities, yet there are clearly stylistic variations within regions (Huffman 1994:7; Reid *et al.* 1998:93). Several decorative elements

correspond to EIA farmer pottery, and in particular the Kalundu Tradition (Huffman 1994:7, 2005:57-79). Still, the distinct finish, thin walls and high density of motifs do not show a similar congruency. There is no doubt about interactive relationships with IA farmers at most of the sites, for example in the Magaliesberg where Bambata was present, but also a rare EIA Phase 2 sherd (Wadley 1996:209- 11). The mere fact that Bambata and early farmer ceramics are recognized as such at sites where they co-occur, demonstrates the underlying dissimilarities between these pottery traditions. The various arguments for the origins and affiliations of the ceramics are set out in chapter 7, so that only the data that directly relate to OBP are now integrated.

8.6.1.2 Bambata at OBP: constructing identities

The decorative elements of the Bambata at OBP — and in all the larger assemblages — are so diverse that it is unlikely that these thin-walled ceramics represent an internal development among hunter-gatherers. The vessels made by hunter-gatherers themselves are mostly grass-tempered and quite coarse (Bleek & Lloyd 1911:343-7; Sampson & Sadr 1999:3-16; Thorp 2000; Mitchell 2002:255, 366). The small quantities of pottery produced by some hunter-gatherers in Botswana were also observed to be coarse (Dornan 1917:46). Although it is accepted that sherds were used and complete pots not always obtained, the reconstruction of at least 31 different vessels from the OBP assemblage (Biemond 2006a) suggests that complete vessels were available. Whether complete or broken vessels were imported to the site, the large quantities reflect functional and/or ritualized use by hunter-gatherers. The UCA diagrams demonstrate a strong correlation between the Bambata and pigments, suggesting that the vessels could have been used as containers to hold liquid pigments for the production of rock art or in secular/ceremonial activities. Several of the OBP Bambata have powdered ochre residues on the insides of vessels, and also on the outer surfaces, thus strengthening the argument for such a function.

The site evidence shows no long-term occupation by either herders or farmers. That this locality was nonetheless intermittently frequented over at least the last 1000 years by groups with different world-views and economies, is confirmed by the ceramics and the contents of the rock art. A count of 1043 sherds represents Bambata as well as four regional phases of indigenous farmer ceramics, namely Happy Rest, Eiland, Broadhurst and Icon. The introduction of farmer ceramics is discussed in more detail in the next section.

The domestic fauna comprises *Bos taurus* (cattle) and O*vis/Capra* (sheep/goat) (Beukes 1997, 2001). It is not clear *where* herders first acquired goats, but linguistic (Argyle n.d.:17-8; Barnard 1992:30) and other data suggest that herders first acquired goats from indigenous farming communities (Schapera 1930:292, 298; Epstein 1971 (vol. II):258-61; Walker 1983:89). Secure early dates for goats in association with Bambata wares can accordingly strengthen arguments for an IA origin. By the 4th century AD goats were certainly present at farmer villages in the Shashe-Limpopo (Plug 1996; Badenhorst 2006). It is, however, not always possible to distinguish morphologically between sheep and goats on account of the fragmented nature of LSA faunal assemblages (Reid *et al.* 1998:84). The faunal elements from OBP are consequently assigned to ovicaprines. An earlier presence for sheep is suggested by the many paintings of both thin- and fat-tailed sheep in the Waterberg, Soutpansberg and Zimbabwe (Jones 1949; Van Rijssen 1994; Eastwood *et al.* 1995; Garlake 1995; Eastwood & Fish 1996; Van der Ryst 1998a, 2003; Eastwood & Smith 2005). Images of goats in rock art are rare. In the research area a finger-painted goat in black pigment near Lephalale/Ellisras is associated with the late farmer art (see also chapter 7).

In view of the fact that the OBP lithic and organic assemblages continue to show such clear hunter-gatherer affinities through time, I propose that the bulk of the Bambata was used by hunter-gatherers themselves. A premise that they could have produced the ceramics themselves is not supported by the majority of archaeologists, and also not by the data from OBP (see also chapter 7). I would therefore argue that hunter-gatherers obtained most of the ceramics through exchange networks and/or trade. I also propose that it is likely that the Bambata imported to OBP could have been used by hunter-gatherers themselves as containers for liquid foods, but also as also paint-holding vessels during various rituals including the production of rock paintings. Ochre has to be in a liquid medium for the production of hand stencils such as those placed in a panel at a height of five metres immediately above the excavated area. It is also likely that other groups such as early herders and/or early farmers brought some of the Bambata to OBP, where the vessels were probably used to hold not only pigments to produce their own particular rock arts, but also as containers in rituals and the offering of substances during rain production ceremonies and puberty rites (Rudner & Rudner 1970:103; Boshier 1972:206-8). Although the identity of the makers of Bambata remains in dispute, the different strands of evidence are now drawn together to

suggest a possible identity for the makers of the Bambata vessels and/or sherds imported to OBP:

- Biemond (2006a) in his assessment of the ceramics at OBP identified four different ceramic traditions apart from Bambata. This ceramic sequence corresponds to the chronology established for the settlement of indigenous farming communities in the region (Aukema 1988, Unisa field notes; Huffman 1990, 2000, 2002). Some of the farmer ceramics were doubtless acquired by hunter-gatherers themselves through exchange networks and/or trade. The composition of the OBP assemblage also points to the presence of both early and later farming groups within the area and at this locality. The symbolic roles of ceramic vessels in farmer rituals are besides well documented (Junod 1927(I):45, 191, (II):135, 318-9; Mönnig 1978:67; Hammond-Tooke 1981:112-4; Aukema 1989:70-2; Van Schalkwyk *et al.* 1997:61-77; Steyn & Ohinata 2001:59; Mitchell & Whitelaw 2005:225) and the site's utilization by farming communities is borne out by some of the rock art imagery that can be linked to ancestral and more recent northern Sotho-speakers. However, Biemond (2006) also noted an earlier presence for herders on the landscape during the first millennium as suggested by their Geometric Tradition rock art. This can strengthen the argument for the Bambata, as the earlier pottery, to be assigned to the herders.

- Robinson (1966) believed that all the different ceramic facies present in LSA assemblages are not always recognized. In LSA contexts the sherd counts in the pottery samples are often too low, with the result that the narrow range of stylistic types and motifs cannot be used to define separate ceramic units. Moreover, assemblages with thin-walled pottery can also contain the somewhat thicker rippled rim ware (Smith & Jacobson 1995, Van der Ryst 1998, 2003; Hall & Smith 2000; Vogelsang *et al.* 2002; Huffman 2005). Following on Walker's (1983) proposition that pastoralism probably arose in western Zimbabwe or adjacent Botswana, Jacobson (1984) has suggested a separation of such early ceramic samples into thinner (possibly herder) and thicker Bambata (with EIA affinities). Wadley (1979:14) also recognized different pottery styles at Big Elephant Shelter, Namibia, where early dates for levels with ceramics predate the earliest IA pottery in southern Africa. At the time sites with such early ceramics were uncommon, and she also noted that the complex stratigraphy of the site should be borne in mind.

- Accordingly, the division by Huffman (2005) of such early assemblages into Bambata A and B can be valid. Bambata A is proposed for the earlier and thinner vessels in forager contexts where they ended up through trade and exchange networks. The thicker, later Bambata B with more restricted distribution is assigned clear farmer affinities. His suggestion (Huffman 2005:68) that farmers may have customized Bambata A vessels for trade to fit a mobile lifestyle is more contentious. Whereas the clear diversity in assemblages can be used in support of his argument, the current absence of farmer villages with Bambata A, and also apparent differences between the earlier Bambata and EIA farmer ceramics, argue against such a proposition.

- The style and contents of some of the rock art images at OBP suggest that the ceremonial practices performed here by farming groups included rain control and rites of passage as discussed in chapters 2, 6 and 7. Interactive behaviour with imagery after the initial production of the rock paintings was shown to be pervasive in the practices of both hunter-gatherers and farming communities in the Waterberg and Soutpansberg regions (Schlömann 1896, 1898; Aukema 1989; Hall & Smith 2000; Peters 2000; Van Doornum 2005; Schoeman 2006). Acts that included dancing in front of the panels, the touching of images or smearing of pigments, and even repainting, served to draw out the potency of the art (Yates & Manhire 1991; Hollmann 1993; Lewis-Williams 1995). Similar symbolic practices continue to be acted out in painted localities across southern Africa (Mitchell 2002:204-10). We also noted in chapters 2 and 6 how increased ceremonial activities and ritual specialization by hunter-gatherers in, for example, controlling rain and in healing performance acts for farmers, served as a vehicle for negotiating both spiritual and political power and to assert their claims on the landscape (Prins & Hall 1994; Van der Ryst 1998, 2003; Laue 2000; Peters 2000; Van Doornum 2005, Schoeman 2006).

- Whereas hunter-gatherers themselves could have introduced the metal and glass beads at OBP, a pattern of distribution against the shelter wall is analogous to well-attested practices of farming communities where offerings are placed in front of painted images as we saw in chapter 6 (Wilcox 1963; Rudner & Rudner 1970; Loubser & Dowson 1987). The regional ethnographic data certainly support the performance of communal ceremonies and rituals by farming groups at painted localities (Schlömann 1896; Boshier 1972; Aukema 1988, 1989; Prins & Hall 1994; Van der Ryst 1998a; Hall & Smith 2000; Peters 2000;

Moodley 2004; Namono 2004; Namono & Eastwood 2005; Schoeman 2006).

- Paintings of sheep are common in the Waterberg, Makgabeng and Soutpansberg (Eastwood & Fish 1996; Van der Ryst 1998a, 2003; Eastwood & Smith 2005). Cattle and goat paintings are generally rare, and only one panel that contains a goat has been firmly identified within the research area. Domestic animal paintings are found in both farmer and herder art. The data for the domestic fauna are similarly ambiguous.

- The argument for herders as the makers of the Bambata pottery seems somewhat stronger than the argument for the production of these ceramics by farming communities. OBP lies on one of the proposed southward routes along which pastoralist groups or domestic animals could have entered the sub-Saharan region (Ehret 1998:219; see also chapter 7). The sequence of dates for levels with Bambata at OBP corresponds with dates for Bambata and domestic animals from Zimbabwe, Namibia and the south African localities, which suggests Botswana as one of the main routes of introduction for domestic stock and the dispersals of herding peoples to the southernmost regions.

- A herder presence is, however, notoriously difficult to establish as nomads move lightly on the landscape. Scattered herder populations were reported to occur in the Shashe-Limpopo and Botswana regions in prehistoric and early historic times (Smith 1836:408-13; Breutz 1958:50; Lye 1975:269). Whereas linguistic evidence (Ehret 1998:219; Mitchell 2002:228-30; Eastwood & Smith 2005:73) lends support for the presence of a proto-Khoekhoe population from within this general region, more research and positive findings are required to substantiate such claims.

- The multi-dimensional model developed by Huffman (2000, 2002) for the graphic representation of ceramics was applied to compile stylistic design structures for the OBP (see Appendix G, figs 9-12) Bambata assemblage and for the herder ceramics (Biemond 2006a). In his ceramic analysis of the Bambata from the site, Biemond found more affinities with herder pottery than with indigenous farmer ceramics.

- Spouted ware similar to the example from OBP (Appendix G, fig. 10) is integral to early

Bambata assemblages elsewhere (Schofield 1940; Jones 1949; Smith & Jacobson 1995), and is found in the earlier herder ware of the western Cape (Sadr & Smith 1991) This strongly suggests herder affinities. Whereas some spouted vessels do occur in farmer contexts (Fouché 1937), for example at Schroda, this site also has geometric rock art ascribed to herders (Eastwood & Smith 2004). If farmers intentionally adapted ceramics for trade with mobile groups as Huffman (2005) tentatively suggests, it is unlikely that fragile (and probably unnecessary) elements such as spouts would have been added.

- The various rock art expressions at OBP include a representative series of motifs and geometrics assigned to early herders (Vogelsang 2002; Vogelsang *et al.* 2002; Ouzman & Smith 2004; Smith & Ouzman 2004; Eastwood & Smith 2005; Lenssen-Erz & Vogelsang 2005).

- Although Bambata has not yet been confidently assigned to a specific group, allowance is made for a herder identity by various researchers (Hall & Smith 2000; Ouzman & Smith 2004; Smith & Ouzman 2004; Eastwood & Smith 2005; Lenssen-Erz & Vogelsang 2005). A reasonable degree of congruence between herder rock art and Bambata can signal a herder presence at OBP. This argument also applies to the farmer art, except that this tradition is later in the regional sequence (Eastwood & Smith 2005:71).

- No village settlements with Bambata are known. Aukema in his comprehensive survey of the Waterberg Lowlands (1980-1989) found no farmer sites with pottery comparable to Bambata. His excavations at the early IA village of Diamant, which lies at a distance of less than 100 km from OBP, yielded an exceptional early African farmer ceramic assemblage, but no Bambata whatsoever. On the Waterberg Plateau, however, Aukema readily recognized the different character of the two Bambata sherds recovered from the interface between a farmer and LSA occupancy, and assigned them to an earlier period in the ceramic sequence (Van der Ryst 2003). In the Gauteng area Wadley (1996:210) similarly found no Bambata villages to account for the Bambata assemblage from Jubilee Shelter. It is therefore significant that the substantial excavations conducted at the nearby Early Iron village of Broederstroom too yielded no Bambata ware.

- The available data therefore do not support a settlement of sedentary villagers who

produced the distinctive Bambata ceramics. The data strongly support the premise that mobile groups moving through the area supplied the Bambata and domestic stock acquired by the hunter-gatherers of OBP. Some of the vessels may have been passed on through gift exchange (Bleek & Lloyd 1911:372-5; Deacon 1996:263). Trade for pots by San with other social groups is known to have been common. However, the movement of so many of these fragile vessels through entirely reciprocal ties and barter is not very likely.

- Whereas most of the occupation debris at OBP can clearly be attributed to hunter-gatherers, the short duration and episodic use of the shelter by other groups over a period of more than 1000 years is clearly attested by the contents of the rock art and ceramics. Such intermittent and ephemeral use cannot result in the build-up of major deposits apart from the incorporation of inorganics. The occupation debris from alternating visits by small core of forager families, who continued to frequent OBP, resulted in a conflation of the different events.

From the above it is evident that questions concerning the identity of the makers of Bambata have not yet been satisfactorily resolved. What is lacking? From the clear hunter-gatherer signature of the OBP assemblage we have to accept that hunter-gatherers themselves doubtless acquired and used many of the Bambata ceramics. Sadr (2003a:207) refers to the occupants of sites with Bambata and ovicaprine remains as hunters-with-sheep (see also chapter 7). The stylistic attributes of the Bambata and a lack of farmer village sites with Bambata ceramics seem to favour a herder origin for the Bambata (see Appendix G, figs 9-13). The distribution pattern of Bambata clearly reflects their use in the space directly close to the shelter wall. If both herders and hunter-gatherers used the Bambata as paint-carrying vessels for ceremonial practices and in the production of paintings, it will not be possible to separate out the various events from the archaeological remains. Apart from the ceramics, any cultural materials deposited during episodic visits by herders and farming groups would become conflated with the much higher frequencies of materials resulting from a more sustained use of the locality by hunter-gatherers. What is not clear from the current data are the routes of introduction. No localities where ceramics were manufactured have yet been found. A decisive identity for the manufacturers cannot, therefore, be determined. The different facies of IA ceramics clearly show that the Africa farmers also visited the locality for ceremonial purposes

and practices over hundreds of years. The various rock art traditions thus confirm a positive presence for herders, and also the clear use of the shelter by farming groups.

We therefore might have to turn to the rock arts to find more definitive answers to questions relating to the origins and dating of Bambata and the routes of introduction of ceramics and livestock. Direct dates from the rock art are urgently required to refine the painting sequences already established for the different groups (Hall & Smith 2000; Smith & Ouzman 2004; Eastwood & Smith 2005). Shelters where herder art dominates must be excavated to see if we can find a distinct archaeological signature for herders and clarify how they used shelter sites. In the southern Cape, differences in artefact and faunal contents between assemblages were used to determine the identity of the inhabitants of shelter and open sites (Smith 1998a:210; Mitchell & Whitelaw 2005:213). We cannot entertain too much hope to find open herder sites as pastoralists do not leave behind many features or marker artefacts associated with their way of life (Sadr 2002:472, 2003a:295-209). Even in the southern Cape, where herder movements and settlements were historically well-documented, their open sites are notoriously difficult to locate (Sadr 2002:474). Most important, we need to find open or village sites with unequivocal evidence for the production of these ceramics to test the proposal put forward by Huffman (2005) that indigenous farmers produced different ceramics for trade and therefore made the thin-walled Bambata for hunter-gatherers with a nomadic lifestyle.

8.6.1.3. Indigenous farmer ceramics

From the estimated vessel equivalent (EVE) based on diagnostic elements, at least 92 different vessels of Indigenous farmer origin were imported (Biemond 2005, 2006). The ceramics fit broadly into a time frame of approximately AD 400 to AD 1500 and include all the major regional ceramic traditions from the Early to the Late Iron Age. It is a widely accepted principle that material culture express group identity (Mitchell & Whitelaw 2005:220), and this certainly applies to the ceramics of indigenous farming communities. The data on the distribution of different facies within the LSA sequence as discussed in chapter 7 demonstrate that most of the ceramics were recovered from the upper layers. The UCA of the ceramics reflecting differential cluster formations in the sequential use is discussed in chapter 3.

The overall patterning does not support the use of vessels in domestic contexts by hunter-gatherers as the inner private space shows virtually no cluster formations. The inverse focus

on the shared space suggests that vessels were deposited when farmers sought to control rain and adverse socio-political circumstances through ritualized behaviour at powerful painted localities similar to the ceremonies discussed in chapters 2 and 6. It is also not very likely that the vessels contained food and drink as the only good account that we have emphasize that they had to abstain from eating and drinking throughout the day (Schlömann 1896). On the other hand we do have evidence for the deposition of pots with rainmaking medicine and offerings (Jackson 1982:46; Aukema 1989:70-2).

That the spatial pattern is clearly different from Bambata can indicate that the use of this locality to perform the rituals and ceremonies was by relatively larger groups. The data on rain control (chapter 2) in the lowlands and plateau do indicate that all the inhabitants of a village were required to gather at the painted sites where they took part in what was clearly a communal ceremony (Schlömann 1896; Van der Ryst 1996; 1998b). The appropriation of hunter-gatherer sites and rituals are discussed in more detail in the following section.

8.6.2 Interactive relationships and the reinterpretation of OBP

Because the string has broken for me (Bleek & Lloyd 1911:237)
Jy hoor dinge, en jy siet ander dinge wat nie is nie. Dit is jou dinksnare (Marais 1964:28)

A string is a cognitive symbol used universally by hunter-gatherers for the emotions, thoughts and experiences that resonate through their lives. A broken string cannot be played to carry sound and accompany the mood songs. In his annotations to the Waterberg recorded narratives Marais (1964:8, 28, 31) explains that the metaphor reflects what they think and dream and believe. Kabbo used the poignant image of a broken string for the processes of dispossession and alienation when he recounted the fundamental changes that contact effected in their relationship with the land (Bleek & Lloyd 1911:236-7; Taçon & Ouzman 2004:50). The transformations that ensued from the first contact with immigrant Indigenous farmers, and much later white settlers, were gradual, but unrelenting. There is underlying irony in the words of some Masarwa in Botswana when recounting how the waggons of the settlers looked like white elephants to them and '[w]e thought they had left it to graze, but we saw that its feet did not move' (Dornan 1917:85). Silberbauer (1996:31) says that although hunter-gatherers display great ingenuity and resilience in their responses, they were at other times so overwhelmed that they lost most or all of their social, political and economic autonomy.

Archaeological investigations demonstrate the extent of networks of interaction and exchange between Khoekhoen, San and farmers (Denbow 1984; Wilmsen 1989, 1994; Guenther 1996a). Excavations on the Waterberg Plateau (Van der Ryst 1998a), Botswana (Sadr 1999), Soutpansberg (Van Doornum 2005; Schoeman 2006) and now at OBP, confirm that relative changes in the frequencies of cultural remains reflect the degree of intensity of pre-contact and post-contact occupations. Some of the constraints and new opportunities that can derive from interactive relationships (Moore 1985:94-5; Eder 1996:85-6; Thorp 2000:9-25), are detailed in chapter 6 where the data on economic and social practices are presented.

8.6.2.1 Changes in the ideational landscape

The ideational landscape incorporates sacred as well as other kinds of meanings that a place represents (Knapp & Ashmore 1999:12). The landscape position of rock art is important (Ouzman 1998a: 34-9; Chippendale & Nash 2004:21; Lenssen-Erz 2004:131-2). Group identity can be expressed through rock art, and in the Waterberg manifests in the recurrence of distinctive postures and motifs (Laue 2000). The permanency of art as a fixed point on the landscape universally marks places endowed with potency and spiritual importance, but also emphasize emotional ties with the landscape as pointed out at the beginning of this chapter (Deacon 1988, 2001; Kinahan 1999).

Religious beliefs, social concerns and economic considerations coincide closely (Flannery 1998:248). OBP created a venue for aggregation where intensified ritualized behaviours managed the concerns of the larger group and promoted social harmony. Emphasis on communal ritual activity is marked during aggregation. Communal participation in rituals extends to the creation, but also consumption, of rock art (Kinahan 1999:340, 353). When the social scheduling of multi-band visits was disrupted, ritual behaviour by mainly small groups of families was likely to be different. Temporal overlaps between San and geometric art, and also overlay studies (Eastwood & Smith 2005:71), confirm intermittent uses of localities where the different rock arts are frequently the only signs of some of these.

The rock art as a visual medium conveys changes in site use at OBP in the different motifs used, the linking of motifs, and the paint techniques. Lewis-Williams (2006:108) says that rock art is a context. Specific images communicate different meanings to groups with dissimilar cosmologies. The contents of the art likewise support the archaeological data of changes within

continuity of site use. The recognition of different kinds of farmer and hunter-gatherer relationships in the Limpopo and Shashe regions illustrates how the rock art and religious practices were focal in the ways hunter-gatherers negotiated power and prestige (Schlömann 1896; Van der Ryst 1998b, 2003; Hall & Smith 2000; Peters 2000; Eastwood 2003; Ouzman & Smith 2004; Eastwood & Smith 2005; Van Doornum 2005; Schoeman 2006). There are no direct data on similar practices at OBP, but the contents of the arts, the ceramics, and also data captured through studies of the ritualized use of painted localities, confirm the integration of the inhabitants within a wider social landscape. Ritual performance is a form of communication that emphasizes the particular concerns of a group, and is not always connected to religious beliefs (Bradley 2003:6-12). The discussion of the rock art in chapter 6 that is mainly based on ethnographies illustrates how some motifs and the conjunctive placement of images refer to liminal events and rain control practices. In a story on rainmaking an old woman spread out the black kaross that she was wearing *([e]n bo-op die bult siet hy ... Nasi-Tgam en sy sprei die swart karos wyd uit ...)* '(Marais 1964:18). Iconography shared in all three regional rock art expressions are present at OBP in images of karosses, loincloths and aprons, signature animals, and the handprints.

The production and consumption of goods can acquire new functions and meanings (Bender 2000:xxi). This can be applied to the ritual use of rock art localities and the multi-vocality of rock art that allows such diverse groups to frequent a place with potency and powerful meanings as happened throughout the Limpopo and Shashe regions (Boshier 1972; Aukema 1988, 1989; Prins & Hall 1994; Walker 1997; Manhire 1998; Van der Ryst 1998a; Hall & Smith 2000; Namono & Eastwood 2005; Van Doornum 2005; Schoeman 2006). The physical attributes and meanings of a landscape are often actively transformed (Layton & Ucko 1999:12-4). Eastwood and Smith (2005:74) suggest that the different rock arts were part of the processes in which cosmologies and practices that held different meanings to different people across time and space 'were repeatedly contested, manipulated and changed'. It was inevitable that the intensive use of the locality by the different groups imposed not only restraints, but also that visits by hunter-gatherers themselves were apparently planned around such events. Such responses were even more likely during more recent use by indigenous farmer groups when hunter-gatherers were greatly marginalised. My initial research on the plateau supports findings of hunter-gatherers at the periphery of society during the terminal phase of interactive relationships (Smith & Jacobson 1995; Smith 1998a). At OBP the rock art, cultural remains and

spatial structuring demonstrate differential intensities on the scale of change.

Such reinterpretations of the ideational value of the site were likely to change the content of the ritualized behaviour, but not the underlying structure of the ideologies of hunter-gatherers. Material culture changes more rapidly than belief systems (Deacon & Dowson 1996). The cognitive and cultural flexibility of hunter-gatherers (Barnard 1992:236, 240; Aldenderfer 1993:1-40; Biesele 1993:14; Guenther 1994:25; Kent 1996:9 -13; Whittle 1996:35) empowered the groups in the Waterberg to make themselves into ritual specialists. The Basarwa in the Kalahari have over a long period demonstrated remarkable flexibility in coping with newcomers (Silberbauer 1996; Lee & Daly 1999). The use of rock art sites to control adverse economic, social and political environments was firmly entrenched in the interactive relationships the Waterberg (Schlömann 1896; Van der Ryst 1998a, 2003; Peters 2000). That five distinct ceramic traditions and all three rock art expressions common to the area and associated with particular groups are present at this locality, clearly underline the powerful role of this locality for the social and religious well-being of the different groups.

Ultimately the hunter-gatherers of the Waterberg were overwhelmed by change and lost their social, political and economic autonomy in a gradual process similar to that of many such groups (Silberbauer 1996). To farmers the ritual powers of hunter-gatherers were mainly vested in their control of rain and the environment. Transformations in the ritualized behaviour of both groups are expressed through the structure of the ceremonies carried out to control adverse social and physical environments (Schlömann 1896; Peters 2000).

The political and economic power of farmers resulted in the gradual, but conscious appropriation of places of power to accommodate farmer cosmologies and practices until hunter-gatherers were excluded from the religious practices as demonstrated in the Soutpansberg (Schoeman 2006). Whereas their control of healing and natural forces is powerful for negotiating social power (Kopytoff 1987; Widlok 1999b), these are the specific abilities that made them dangerous (Schlömann 1898:70; Burkitt 1928:120; Katz *et al.* 1996:12; Schoeman 2006:256). Baines (1877:59) reports that near the Little Tuli '[w]e caught a glimpse of a Masara woman, and sent some of our boys to persuade her to come, but they feared her husband would bewitch them, and made no effort to induce her'. The final and full appropriation of the former hunter-gatherer landscape is shown by the ongoing rituals and supplication acts

by indigenous farming communities that involve the deposition of gifts and ornaments at painted sites (Wilcox 1963; Rudner & Rudner 1970; Loubser & Dowson 1987).

8.7 CONCLUDING REMARKS

As hunter-gatherers leave ephemeral traces only in their movements across a landscape, a shelter site such as OBP represents a depository of inert data to be used in the process of inferring behaviour in relation to a multitude of activities and tasks (Nicholson & Cane 1991. Our knowledge of these will always remain incomplete. The original spatial organization may be maintained in large parts, but here will always be a loss of resolution through attrition, physical disturbances and other processes that transform a former living place into an archaeological location (Gregg *et al.* 1991:195).

In the discussion I demonstrated how reoccupation can, and later occupational episodes may, conflate evidence of earlier events and also produce palimpsests of accumulations from different occupations (Kent 1991:35). Behaviours of repeated occupations by groups with different social practices, and the ongoing reuse of space make identification of clear, unequivocal artefact patterns on living floors impossible to detect. A more general pattern of continuity in site structuring is confirmed by data from the excavated assemblage. The intense utilization of the formal spaces was highlighted with reference to particular tasks and types of activities in the private space around the fireplaces. The more communal space contains data on special activities, but also a primary role for tool manufacture, primary processing and waste discard. UCA applications were eminently suitable to define some instances of individual activities, and detailed contextual distribution patterns where a combination of tool types was used for specific tasks. By combining sets of data a few rare instances of actual episodic activities could be reconstructed.

That economic exchange is commonly the main reason for associations with neighbouring groups (Valiente-Noailles 1993:142) is illustrated by exotics and changing frequencies in several types of cultural material that can relate to production for barter. The ceramics singularly illustrate how the people at OBP were clearly part of the economic and social processes taking shape. The earlier and quite extensive Bambata ceramics suggest that not only indigenous farmers, but likely also herders, were involved in interactive relations with hunter-gatherers. This is confirmed by the rock art traditions of all three groups then on the

landscape. Increased social tensions and competition for natural resources as the area became contested, manifested in the transformation of ritual and social resources to negotiate power relations. The recovered materials and contents of the rock art not only demonstrate changes in the intensity of landscape use, but corresponding changes in the ideational landscape. The flexibility characterizing the organization of hunter-gatherers allowed the occupants of OBP to adapt to changing economic, social and political environments. To survive in the rapidly changing landscape of the final phases the last hunter-gatherers were left no choice but to become integrated and adopt the economic and social practices of the indigenous farming communities.

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THE ARCHAEOLOGY OF OLIEBOOMSPOORT : CONCLUSIONS

> These people survive like the birds in heaven: they do not sow, they do not cultivate and yet they stay alive; they do not build and yet they exist. A few roots and almost always a piece of game, which they kill with the greatest skill, and they have an appetizing and complete meal (Stech 1885:390-391).

9.1 CONCLUSIONS

A decade ago Mitchell (1997:359-424) remarked on a paradigm shift in LSA research whereby the study of social organization, ideology and changes over time became topical. The archaeological record shows that at approximately 2000 BP other populations started to move into areas south of the Limpopo. The findings reveal that the general trend towards social and economic intensification, which had begun after 5000 BP, became even more pronounced in post-contact forager strategies. The Waterberg Limpopo area and Shashe-Limpopo region of the Soutpansberg saw some of the earliest contact between immigrant groups and hunter-gatherers. The development and shifting nature of interactive relationships recognized in archaeological contexts are also explicit in the much more visual medium of the rock art.

The findings encouraged new approaches to detail the role of the hunter-gatherers in a landscape of emerging socio-political complexity that resulted in changing patterns of regional demography (Van der Ryst 1998a; Hall & Smith 2000; Peters 2000; Smith & Ouzman 2004; Eastwood & Smith 2005; Namono & Eastwood 2005; Sadr 2005; Van Doornum 2005; Schoeman 2006). Through my previous research at shelter sites on the Waterberg Plateau it became clear that only broad investigations into the history of the hunter-gatherers could reconstruct the chronology of Stone Age occupation for the area, as well as regional subsistence patterns and stylistic differences in assemblages. The findings in addition highlighted some of the complex interactive relationships between hunter-gatherers and immigrant groups.

Olieboomspoort was selected for study because initial investigations by Mason (1962) demonstrated not only a complete Stone Age sequence, but also evidence for interactions between hunting and gathering groups and indigenous farming communities as set out in chapter 2. The main objective of this study was to extend the cultural chronology for the region (see also chapter 1 for the aims), since the sequence for the Waterberg Plateau indicates a late, but intensive, hunter-gatherer occupation corresponding with the expansion of indigenous farming communities. At OBP the variety and quantity of materials recovered from the

excavation of a 500 mm x 5 m test trench up to bedrock affirmed the potential of this locality. The OBP assemblage provides a benchmark for the cultural chronology of this region. Under a superficially disturbed modern surface, the stratigraphy reveals the broad sequence established for southern African prehistory.

It was significant that the upper levels of the test trench not only contained a representative suite of the regional indigenous farmer ceramics, but also several sherds of the ambiguous thin-walled Bambata. The Stone Age sequence reflects ephemeral use in the uppermost levels preceded by intensive production throughout the LSA as evidenced by the lithics, as well as extensive archaeobotanical and faunal remains. Before approximately 14 000 BP (Pta-8662) the data suggest a sparse population, and thick lenses of spalled rocks correspond with the onset of cooler conditions leading up to the Last Glacial Maximum (Scott *et al.* 1997:70; and see chapter 2). Olieboomspoort's setting on a bend along the Riet Spruit means that during very wet climates the shelter, although high enough above the water level, would be inaccessible as was evident during the exceptionally heavy rains of 2000. Low levels of utilization of the site around the interface between the LSA and MSA are underlain by the extensive and notably rich MSA. The recovery of a human tooth (as identified by Bob Brain 1998) underlines the scope for MSA research. The sequence concludes with several ESA tools on bedrock.

The subsequent excavations of an area of 25 square metres, as described in chapter 3, were aimed at obtaining larger samples and detailing the spatial configuration and patterning of site use over time (see also chapter 1). Whereas the extended excavations continued up to the LSA/MSA transition, only the data from the last 2000 years are analysed in this study. Various time-frames for the above transition have been suggested, and at some sites typologies with a MSA nature are still found at approximately 30 000 to 20 000 BP (Wadley 2005c:59). At OBP an AMS date on bone (GrA-13537) from the MSA levels gives a calibrated reading of 20 303(20 187)20 065 BC. The chronological succession uncovered by the extended excavations conforms to the sequence revealed by the initial investigations, but adds detail. Opening up a larger area at OBP enabled a reconstruction of the organization of space as well as continuities and change in the structuring of activities, and enabled me to find behaviourally meaningful patterns. Following on the ephemeral more recent occupation by apparently nuclear hunting and gathering groups, the deeper levels exhibit pulses of high production

within the 2000 year period. Exceptionally rich occupation levels formed at approximately 2000 BP and again at approximately 1500 BP.

The interpretation of any material record and processes of deposition can be daunting (Shott 1998:299). The impact of geogenic, biogenic and anthropogenic factors on site formation processes, as well as vertical and horizontal movements in the deposit, are detailed in chapter 3. Establishing spatial integrity (Henry *et al.* 2004:19) is essential if the behavioural patterns and the site organization during sequential occupations at OBP are to have any meaning. Post-depositional processes adversely affecting preservation are mostly water percolation and runoff (Stein 1992; Paton *et al*. 1995; Reitz *et al.* 1998; Karkanas *et al.* 2000). These processes continue to impact on the deposit, and required stabilisation and the construction of a semi-permanent roof-covering to inhibit damage to the opened-up area (see Appendix N). The most marked anthropogenic disturbances are patterns of refuse removal, of which the cleaning of fireplaces is the main contributor (Woodward & Goldberg 2001). Overall good archaeological integrity is evidenced by the presence of mycohyphae on tools submitted for residue analysis (see chapter 4, and Williamson 2006), distributional patterns of sherds from single vessels (Biemond 2006a), conjoining lithics within close proximity of raw materials, as well as locational and relational traces (Schiffer & Miller 1999:53). Differential weathering and episodic spalling of the roof and walls are corroborated by palaeoclimatic data (Scott *et al.* 1997).

In setting out the objectives of this study, I explained in chapter 1 that the research is primarily a site-specific investigation aimed at extending a very limited database on the Stone Age for the region. A major aim was therefore to consider whether the environmental setting contributed to regional differentiation in subsistence and other lifeways. The construction of forager identities largely derives from their characteristic ways of dealing with their economic and social environments (Silberbauer 1996:26; Taylor 1997:351-63). An underlying theme of access to resources in many narratives underlines a preoccupation with subsistence (Marais 1964; Biesele 1993; Guenther 1999; Widlok 1999b:60-2). Families and extended groups schedule their movements around immediate economic requirements and also to fulfil social needs (Marshall Thomas 1959; Wadley 1987; Kelly 1995; Guenther 1996a; Lee 1998a, 1998b). In chapters 3 to 6 the findings demonstrate how the setting of OBP within a particular environment meets the requirements of diversity and long duration of resource availability to

support larger groups as these are factors dictating seasonal movements and the scheduling of multi-band alliances.

The data on the lithics (chapters 3, 4 and 5) and non-lithics (chapter 3, 6 and 7) are used to reconstruct the regional subsistence pattern, a major theme of the study. In as much as the bushveld environment was more sustainable year-round, the social role of OBP as a powerful place was probably more important. Knapp and Ashmore (1999:16) say that where 'landscape is identity and memory, a tangibly marked landscape is memory-enhanced'. All the evidence points to OBP as a place of referents where social practices, myths, stories and memories served to bind people together (Tilley 1994:27; Smith 2005:267). The physiographically more diverse Limpopo region, with its greater variety of biomes, supports a more extensive animal biomass. In addition, the Limpopo Sweet Bushveld exhibits higher diversity in plant communities than the plateau where the Waterberg Mountain Bushveld is more suitable for seasonal use (Acocks 1953; Estes 1991; Low & Rebelo 1998; Driver *et al.* 2005; Skinner & Chimimba 2005). Establishing seasonality is fraught with difficulties as demonstrated in chapter 8 where the data from the previous chapters are integrated to reconstruct the way of life at OBP. A broad pattern for subsistence practices and seasonal collection is constructed based on evidence from the faunal and archaeobotanical assemblages, since only several sets of supporting data can assign unequivocal seasonality, and then mainly from episodic events. The deposition of seeds of many seasonally restricted plant taxa (Sievers 2006, Appendix K) supports the premise that OBP was a preferential locality during the wet season. Singular localised conditions promoting the preservation of organic materials allowed for the reconstruction of textured economic behaviours, and confirmed extensive collection of regional plant foods. The faunal assemblage comprises virtually all the large, medium and small game from within the Limpopo Basin (Beukes 2001; Appendix J). The ecological and seasonal diversity represented in this collection supports the material cultural evidence for multi-band visits and also for occupation by small family groups. The taxa diversity suggests that a variety of hunting and fishing technologies was not only applied in organized strategies, but was doubtless also used in opportunistic circumstances to capture game for food, to prepare clothing and to carry out subsistence tasks.

The quantitative unconstrained clustering analysis (UCA) approach was applied to define spatial structuring of the site (Whallon 1984; Gregg *et al.* 1991; Wadley 1996b; 2000a, 2000b

Galanidou 1997) (see Appendix F). Change over time took into account the high density of material types and the probable relationship between classes of material. Since the archaeological deposit is a conflation of many overlapping occupational events, the merits of UCA are obvious in smoothing the data and accentuating general trends in behaviour and site structuring. The data from the UCA are compared with archaeological studies on social organization at shelters and ethnographic accounts of the use of encampments by more recent groups. Ethnoarchaeological data and implicit ethnography (as contained in historical accounts) are extensively used to guide inferences on subsistence practices, which influence deposition and intrasite spatial patterning. The data demonstrate how OBP complies with the economic — and social — attributes of an aggregation or multi-alliance site (Wadley 1996:206-7). The frequencies and nature of the lithic and non-lithic components of the assemblage, as well as density of depositions and structuring of space as delineated by UCA, were shown to conform to expectations of the model for aggregation and dispersal (Wadley 1987). It is also argued that locational (Hyder 2004:85-101) and ideational (Knapp & Ashmore 1999:12-3) meanings attached to OBP made this locality central in the scheduling of long-term aggregations corresponding with intensive site use.

The reconstruction of a regional settlement pattern calls for the identification of analogous or differential patterning between the Limpopo Lowlands and the Waterberg Plateau. The spatial configuration of shelters throughout the Waterberg is very similar. However, the OBP shelter is much larger, and the greater extent of the excavations and the longer occupation sequence at OBP complicate comparisons with Goergap on the plateau. The sequence on the plateau shows a relatively extensive MSA occupation, followed by a very long period of non-occupation as established from excavated shelter sites. Intensive occupation of the plateau by hunter-gatherers is found only at approximately 800 years ago. The OBP sequence contains an ephemeral ESA followed by a very extensive MSA and again a break in occupation until hunter-gatherers began to use the shelter intensively from at least the early Holocene onwards.

The OBP lithics of the last 2000 years conform to the definition of a classic Wilton assemblage (Appendices A to F), whereas the contemporary assemblages from sites on the Waterberg Plateau are characteristic of late or post-classic Wilton. The lithics of the two separate regions additionally exhibit marked differences in not only the use of raw materials, but also in the relative frequencies of all classes of cultural material. In chapter 4, where I discuss the lithic

component of OBP, it is evident that opalines sourced from the nearby Limpopo River were clearly preferred for scrapers, and that quartz materials dominate all other formal types at OBP. Quartz crystal is also extensively used, whereas the larger-sized felsite chunks were apparently reserved for the bulkier tools. On the plateau felsite and quartz dominate and crystals were used to a lesser extent. A narrow range of raw materials suggests limited mobility within small territorial boundaries (Wadley 1987:67).

Elements such as backed scrapers and decorated OES at OBP, differential use of raw materials and site-specific behaviour emphasize the cultural and social diversity that is characteristic of the lifestyles of southern African forager groups (Kelly 1995; Guenther 1996a; Kent 1996; Silberbauer 1996; Flannery 1998; Lee 1998a, 1998b). It is significant that the OBP lithics show close similarities with assemblages from Botswana and the Shashe-Limpopo area (Walker 1994, 1998; Van Doornum 2005). Distinctive technological elements found at the Tuli Lodge and Magagarape sites in Botswana (Walker 1994, 1998) are also recognized at OBP. The presence of geographically constrained stylistic tool types such as backed scrapers at localities dating to after 2000 BP in the northern areas of South Africa, southeast Zimbabwe, and adjacent areas in Botswana, as well as other parallels in formal organic artefacts and processing equipment, signify group movements and inter-band contact. The plateau assemblages (Van der Ryst 1996, 1998a) conversely have more parallels with sites on the highveld of Gauteng (Wadley 1986a, 1986b, 1987).

The site structure and activities at the small Goergap site, which exhibit a similar formal spatial organization that can be attributed to multi-group scheduling, are ascribed to the sort of change that took place after contact when hunter-gatherer groups moved onto the plateau to take advantage of farmer economies (Van der Ryst 1998a). Elaboration and intensification of subsistence and production activities with a clear emphasis on goods for trade or barter at the smaller sites can be linked to the more fully occupied landscape that had to be shared with farmers. Demographic constraints are reflected by the longer-term use of localities during late stages of contact when hunting and gathering groups were gradually being incorporated into the social economies of indigenous farming communities. The range of strategies employed by hunter-gatherers on the Waterberg Plateau in their interactive relationships included deliberate scheduling to take advantage of the economies of neighbouring farmers (Van der Ryst 1996, 1998a, 2003). At OBP the data show much clearer continuities in site use and

organization of activities, but with change over time in intensities of site occupation and variations in the spatial structuring of activities.

A division of the OBP shelter into two formal areas of private and communal spaces, as detailed in chapter 3, conforms to patterns at open-air camps documented among the Ju/'hoansi (Marshall 1976a; Yellen 1976, 1977), Kua (Bartram *et al.* 1991; Valiente-Noailles 1993), Hai‖om (Widlok 1999b) and in historic records (Hollmann 2005), and as found at cave and shelter sites (Clark & Walton 1962; Wadley 1979, 1987, 2000a, 2000b; Parkington & Mills 1991; Mitchell *et al.* 2006). Within such a formal division, the physical configuration of OBP and bounded shelter space were accommodated in the organization of production and subsistence-related activities. The only structural features are the series of fireplaces located on a linear axis along the shelter wall. The placement of fireplaces and the several preserved bedding patches at OBP demarcate the inner, private family area from the open, shared communal space. The general organization of space at OBP is consistent with underlying principles structuring physical and social formations at hunter-gatherer sites in southern Africa (Parkington & Poggenpoel 1971; Yellen 1976, 1977; Wadley 1979; Bartram *et al.* 1991; Parkington & Mills 1991; Galanidou 1997; Henry *et al.* 2004).

The recognition of gender relations, the ways in which people structured their living space, and the sharing of food are issues that increasingly feature in research programmes (Wadley 1987, 1997a, 1997b, 1998; Mitchell 2005:64-71; Mitchell & Whitelaw 2005:209-241; Mitchell *et al.* 2006:81, 90). Variations in densities and proportional compositions of lithics and other cultural materials through time, as delineated in chapter 3 by the UCA diagrams (see also Appendix F), are used to infer disparate patterns for gendered activities within the two main spatial arrangements. It seems likely that the fireplaces served as focal points for single-sex activities during larger group gatherings. This is borne out by evidence for the prolific production of beads around fireplaces and the recovery of beadmaking paraphernalia such as the many grooved stones, stone piercers and small anvils. Complete segregation of activities is unlikely. Production and maintenance activities relating to arrow components on bone, as well as bone awls for the sewing of tanned skins, were carried out around fireplaces, but also in the communal area. Patterning in tool types, task-related artefacts, waste materials and the UCA diagrams suggest that some gendered tasks were undertaken in the shared open space that fronts onto the talus. The open communal area was doubtless used for the same range of

activities that took place around fireplaces, but with marked emphasis on production and maintenance of a range of subsistence tools. However, it is not possible to determine gendered tasks throughout the sequence as many different activities were carried out around fires as suggested by discrete clustering of the most commonly used formal tool types.

There is clear variation in the intrasite spatial organization used by hunter-gatherers during more recent visits to OBP. Virtually all activities were scheduled around fireplaces corresponding with lower-intensity use of the open space. This marked differential intrasite structuring underlines the fact that space is organized according to social needs. Cooperative single-sex activities were more common during formalized aggregation gatherings, whereas mixed hearth groups, when dispersed, carried out most tasks around their fires in the private space. This marked emphasis on the private space during more recent visits is attributed to a disruption in social and demographic dynamics. Disintegration of seasonal multi-band aggregation patterns, which resulted in the intermittent use of OBP by mainly small family groups, is attributed to limited mobility and a lack of autonomy amongst remnant hunting and gathering groups.

Some of the premises for this study derived from earlier research, and the recent fieldwork, as might be expected, modified several of the previous findings. A particular aim of the working hypothesis was to investigate whether the influx of early herder and farming communities brought about demographic pressures forcing some bands onto the Waterberg Plateau, or whether the contact situation initially led to intensified occupation with a corresponding increase of people in the Limpopo Lowlands. Some of the observed differences between the two areas certainly ensued from the eminent ecological suitability of OBP, which also seems to have represented a more prominent and powerful place within the landscape for extended multi-group aggregations. The diversity and much higher frequencies of all types of materials at OBP, compared with those on the plateau, can be ascribed to different intensities in economic, social and ritual behaviour of large groups during more extended visits. The extensive occupation sequence at OBP confirms such an important role for the site over unknown generations.

The two pulses of intensification at around 2000 BP and 1500 BP at OBP also coincided with the series of movement by herders and indigenous farming communities into the lowlands of

the Limpopo. Intensification in the early post-contact levels (chapters 3 to 7) can be linked to initial symbiotic relationships with the immigrants, and the production of goods for barter. The evidence for intensive occupation of the plateau during the past 800 years, as discussed in chapter 2, can suggest the conscious movement of some groups out of the Limpopo Basin simultaneous with farmer expansions. However, stylistic differences in the lithic and non-lithic assemblages from the two regions, as well as the differential use of raw materials for lithics, do not support such a model.

The characteristic narrow range of multi-purpose tools carried by nomadic hunter-gatherers does not allow much scope for differentiation in the relatively circumscribed forager inventories. Regional stylistic differences are thus mainly expressed through tool morphologies. Prominent elements in the OBP assemblage include backed scrapers as well as extensively worked bone and OES bead assemblages (see Appendices). The lithic and non-lithic inventories give some indications of the range of activities undertaken. Residue and edge-wear studies on lithic rings (Lombard 2001, 2003) and microliths (Williamson 2006) confirm multiple use of tools, and the processing of plant, animal and mineral substances. The relative frequencies of all OBP tool types, when compared with those from the plateau, confirm intensified production. Large group compositions are indicated by the extent of production activities. Increased production can, in addition, be linked to the manufacture of commodities for interband reciprocal exchange and to be used in direct barter with neighbouring communities (Marshall 1961, 1976a; Silberbauer 1981; Gordon 1984; Guenther 1994; Wadley 1987; Wiessner 1992). High frequencies of scrapers, bone tools and awls used in the preparation and sewing of skins and intensive production of OES beads, which were cross-culturally favourite exchange and trade items, emphasize changes in post-contact economies at OBP.

A particular feature of OBP is the superabundance of haematite that is present in all levels and throughout the sequence. In chapters 5 and 8 the singular role of the site in the procurement and processing of haematite is pointed out (Appendices A - F). The substantial quantities of haematite suggest the control, collection and movement of valued pigment and ore resources (Gordon 1994; Guenther 1996a). Pigments were more intensively mined and traded during the LSA (Bleek & Lloyd 1911; Dunn 1931; Burchell 1967; Thackeray *et al.* 1983; Beaumont & Morris 1990; Robbins 1990; Mitchell 1997, 2002; Barham 1998, 2002; Robbins *et al.* 1998). At OBP procurement and the processing of pigments were also remarkably intensive during

the MSA (Watts 1998, 2002). My own test excavation at OBP confirmed the collection of substantial quantities — and notably larger chunks — during the MSA. Specific context is crucial to inferences about spatial organization (Adams 2002:47). At OBP several instances of the locational use of different tools reflect the structuring of special activities within a specific space. Haematite, processing tools and the roasting of *Strychnos* to extract the viscous oil are associated with the processing of pigments to facilitate their storage in containers, easy transport, and possibly for barter and trade. It is surmised that the supernatural associations attributed to pigments contributed to perceptions of OBP as a powerful place, and that these beliefs were central to the performance of ritualized events at this locality.

Another example of locational trace (Schiffer & Miller 1999:53) is a surface find of 35 complete and approximately 20 broken pegs used to stake out hides. The cache was recovered from the northern section of the shelter, a location which confirms ethnographic observations according to which hideworking takes place at some distance from the main encampment (Yellen 1976, 1977; Valiente-Noailles 1993). The find suggests production, use and discard at the spot, yet can also reflect storage of pegs for future use. In the shared space, contextual finds of an anvil with punches, a range of formal microliths and manufacturing debris were uncovered intact on a living floor dating to approximately 2000 BP (see Appendix L for the dates). These relational traces originate from within the shared space, and from levels with very high production. Such discrete spatial clustering confirms that task-specific activities of retooling of blanks into formal implements were also carried out in the communal area during band alliance visits.

The technology of the hunter-gatherers at OBP changed very little over the 2000 years of social and economic interaction. In the Limpopo Basin the initial (early) contact with and likely intermittent exposure to small immigrant communities of herders and farmers probably resulted in mutually beneficial symbiotic relationships. The relative changes in frequencies of different sets of archaeological data confirm incremental demographic shifts and a constantly changing ideational landscape until abandonment of this locality. Contact with herders or farmers would have impacted on what was likely an originally sparse hunter-gatherer population with access to diverse resources within a large territory. Sharing of the landscape resulted in the relocation of hunter-gatherers to safe places (Schlömann 1896, 1898).

Written observations on the people of the Waterberg (Baines 1872, 1877; Stech 1885; Schlömann 1896; Keane 1920; Marais 1928; Kirby 1940; Wallis 1946; Breutz 1958) have been used in chapters 2, 6 and 8 to give meaning to some of the patterning suggested by the archaeologically recovered data. The deleterious impact of contact cannot be conclusively determined, but it is clear from the data at OBP that the hunter-gatherer way of life, and especially their land-use patterns, were greatly altered with escalating pressure on environmental and socio-economic resources brought about by the expansion of mainly African farming communities. Overall changes are more clearly marked in the utilization of the OBP shelter, as reflected in the frequencies of all classes of material and the structuring of space.

The archaeological data support literature and archival sources on the economic and social position of recent hunter-gatherers in the Waterberg during the 19th and 20th centuries (Stech 1885; Schlömann 1896, 1898; Dornan 1917; Marais 1928; Kistner 1952). Relationships with newcomers governed their movements, and impacted on scheduled cyclical movement and land-use practices. Hunter-gatherers on the Waterberg Plateau employed differential strategies to cope with changes brought about by interaction and the expansion of farming groups. Initial symbiotic relations based on the hunter-gatherers' function as ritual specialists and the importance attached to their painted localities were accompanied by intensification to take advantage of socio-economic opportunities offered by the newcomers. On the plateau, the chronicled uneven power relations ensued in gradual encapsulation, enslavement, incorporation and displacement of hunter-gatherers. The devastating impact of these processes on hunting and gathering groups was accelerated when European hunters and farmers moved into the Waterberg, and particularly focussed on the Limpopo lowlands where they hunted extensively. Changes in the archaeological deposit at OBP, accompanied by differential organization of activities and intrasite spatial structuring, but also the rock art sequence and the deposition of ceramics, chronicle some of the transitions effected to the economies and social relations of the Waterberg hunter-gatherers.

Biemond's analysis (2005, 2006a) of the OBP ceramic assemblage yielded a sherd count of 1043, which translates into an estimated vessel equivalent of at least 123 vessels (chapter 7; Appendix G). The extensive utilization of the economic and social resources of OBP by groups other than hunter-gatherers is demonstrated by the deposition of vessels from five different pottery traditions. In chapters 7 and 8 the unresolved affinities of Bambata are debated. A

pervasive farmer presence is recognized in the Happy Rest, Eiland, Broadhurst and Icon/Moloko facies that span the Early to Late Iron Age of the local regional ceramic sequence.

The construction of the identities of the manufacturers and users of Bambata ceramics is more complex. Archaeologists have not been able to achieve a consensus on the position of Bambata (Denbow 1986; Huffman 1994, 2005; Smith & Jacobson 1995; Reid *et al.* 1998; Sadr 1998, 2005; Hall & Smith 2000). Whereas the incorporation of these ceramics into the OBP deposit is accompanied by domestic fauna, the non-ceramic assemblage retains a clear hunter-gatherer signature. Various scenarios are proposed for the introduction of Bambata and all of these have some merits. Ceramics could have been passed on through interband exchange relationships (Wiessner 1982, 1992; Wadley 1987), but also through direct trade or barter with other ethnic groups (Schapera 1930; Denbow 1984, 1986). Some Bambata ceramics were possibly acquired from herders to the north through exchange networks (Huffman 1994, 2005). Since pastoralism is often 'an episodic adaptation, limited both in space and time' (Sadr 2002:471), it is probable that sheep-owning hunter-gatherers produced some of the ceramics (Sadr 1998, 2003a, 2005). The diversity found in Bambata assemblages supports Sadr's argument, but can also be used to argue for an internal development of the ceramics by incipient herder populations (Denbow 1986; Turner 1987a, 1987b; Reid *et al.* 1998). In view of the acknowledged diversity of Bambata, the proposal by Huffman (2005) that some Bambata were produced by indigenous farming communities for trade with hunter-gatherers, cannot be ruled out. However, current data also support a herder presence on the immediate landscape at the time of the appearance of the Bambata ceramics in the OBP deposit (Hall & Smith 2000; Ouzman & Smith 2004; Smith & Ouzman 2004; Smith & Eastwood 2005; Biemond 2006a).

The premise that the Bambata vessels at OBP were obtained either through interactive exchange dealings among bands, or directly from herders, yet used by hunter-gatherers themselves, is based mainly on the forager signature in levels with Bambata, the dates, and the contents of some of the rock art (see Appendices G, H, L and M). The relatively recently recognized theme of herder art in the Limpopo promises new insights into the movement of herders into the region and their interactive relationships with hunter-gatherers (Ouzman & Smith 2004; Smith & Ouzman 2004; Eastwood & Smith 2005). As no farmer villages with Bambata-type ceramics have yet been found in this region, it seems most likely, but not

certain, that the Bambata ceramics at OBP have herder origins. The authorship of Bambata can only be satisfactorily resolved with more firm dates for the herder art, supported by archaeological data on the time-depth and extent of the proposed herder utilization of resources in the Waterberg and the Shashe-Limpopo regions.

Whereas many of the farmer ceramics were certainly acquired through trade or barter, the written records of interactive relationships in the Waterberg clearly demonstrate the use of shelter localities by farmers themselves for ritualized behaviour. The use of hunter-gatherer localities by different groups not only transpired in disparate art expressions, but also in the deposition of ceramics in direct association with ceremonies and rituals that incorporated San, herder and farmer rock arts. The powerful rock art of the San served as a vehicle to negotiate power relations. The reinterpretation of San rock art by African farmers, and the production of paintings relating to specific ceremonial behaviour by the farmers themselves, were discussed in chapters 2, 6, 7 and 8 (Roberts 1916; Rudner & Rudner 1970; Boshier 1972; Prins & Hall 1994; Van der Ryst 1998a, 2003; Hall & Smith 2000; Laue 2000; Peters 2000; Eastwood 2003; Moodley 2004; Namono 2004; Ouzman & Smith 2004; Smith & Ouzman 2004; Eastwood & Smith 2005; Namono & Eastwood 2005).

At OBP, classic San paintings common to the Limpopo area are numerous, but badly preserved and defaced. Next in the sequence are the strikingly different Geometric Tradition finger paintings assigned to Khoekhoe herders. We know that there is a temporal overlap between herders and hunter-gatherers because of overlay sequences in the Soutpansberg (Hall & Smith 2000; Smith & Ouzman 2004) where approximately one-fifth of geometric paintings underlie San art (Eastwood & Smith 2005:71-2). The range of geometric symbols in the early herder art at OBP is typical for the region. The art contains non-representational motifs of karosses, loincloths, aprons and numerous handprints in red and yellow (Appendix M). The unquestionably late arrival in the sequence comprises African farmer art that overlies both of the other traditions (Eastwood & Smith 2005:71). At OBP the imagery contains white abstract geometrics and animal representations relating to the utilization of the shelter by groups of mixed descent and by farmers. Rites of passage are major themes within the more recent farmer art (Roberts 1916; Rudner & Rudner 1970; Boshier 1972; Prins & Hall 1994; Moodley 2004; Namono 2004; Eastwood & Smith 2005; Namono & Eastwood 2005).

Analogous motifs, which feature in all three rock art expressions, can be associated with the different social formations on the basis of the techniques used, and with reference to the contexts in which the arts were produced. These include handprints, which at OBP are visually dominant. The many monochrome positive handprints in red, orange and yellow ochres are placed in clusters, and include a panel in red within a frame formed by spalling at a height of approximately five metres above the excavated area. Handprints represent a universal theme in rock art. In southern Africa handprints are linked to ritualized behaviour and the ownership of sacred places (Lewis-Williams & Dowson 1989; Manhire *et al.* 1983; Manhire 1998; Ouzman 1998a). Handprints represent one of the central motifs in the regional arts of the Limpopo Basin, the Waterberg Plateau and the Soutpansberg (Wilcox 1963; Rudner & Rudner 1970; Van der Ryst 1996, 1998a; Eastwood & Cnoops 1999; Laue 2000; Peters 2000; Ouzman & Smith 2004; Eastwood & Smith 2005). Aprons constitute another recurrent motif in the rock art of the Waterberg, LSCA and Makgabeng (Eastwood 2003, 2005; Moodley 2004; Namono 2004; Namono & Eastwood 2005; Eastwood & Tlouamma 2006). At OBP the multi-vocality of rock art is demonstrated by several depictions of aprons ascribed to San, herders and also northern Sotho. Throughout the subcontinent many of the changes and diversity in religious symbolism, which derived from contact between the various societies, are expressed through the visual medium of rock art (Jolly 2005:96).

The hunter-gatherers who frequented OBP have left a most enduring mark in the form of rock paintings. In chapter 2 the selective borrowing of elements of religion across ethnic boundaries and their subsequent incorporation into the cosmologies of the different societies resident in the Waterberg, Makgabeng and the LSCA regions was demonstrated (Prins & Hall 1994; Van der Ryst 1998a, 2003; Hall & Smith 2000; Eastwood *et al.* 2002; Eastwood 2003; Ouzman & Smith 2004; Eastwood & Smith 2005; Van Doornum 2005; Schoeman 2006). Throughout the three regions rock art was a powerful resource that enabled hunter-gatherers to negotiate their relationships with farmers through controlling aspects of the political and social environment, and also their spiritual well-being. Similar processes were involved in the production and consumption of rock art in virtually all rock art regions of southern Africa. At OBP the marking of motifs with fingers dipped in pigments to harness potency (Yates & Manhire 1991; Hollmann 1993; Lewis-Williams 1995) as well as the contents of the different rock art expressions, underscores some of the commonalities, but also demonstrates the multi-layered meanings attributed to the rock arts by different indigenous communities. The extensive use of the OBP

shelter for ritualized and ceremonial behaviour by different groups over time demonstrates the complex interactive history of the region. I discussed in chapter 8 how the reinterpretation and transformation of the ideational landscape resulted in the ultimate displacement of hunting and gathering groups from this locality. Most of the Waterberg hunter-gatherers who were not assimilated into African farmer hegemonies were displaced to other regions.

9.2 FUTURE DIRECTIONS

An aim of this study was to establish a broad outline of the prehistory of hunters and gatherers of the region, and to give cultural values and meanings to the archaeological data. The focus was placed on OBP as a place of importance in the landscape where diverse activities shaped the social, economic and political lives of the people to whom this place held special meanings. Future research on an expanded regional scale will augment the data presented here. My research on the LSA of the Limpopo Basin and Waterberg Plateau (Van der Ryst 1996, 1998b) and Van Doornum's (2005) research in the Shashe-Limpopo region confirm regional differences in raw material use, and also subsistence practices. When the materials from the deeper levels at OBP are analysed, the data will probably modify some of the current findings. The occupation before approximately 2000 years ago falls outside the scope of this study. However, high intensities of production activities in the pre-contact deposits suggested through the test excavations at OBP are analogous to Van Doornum's (2005) data. It is becoming clear that population movements from early on impacted on forager land-use and subsistence, and reconstructing regional intercultural developments requires more substantive research.

In the Shashe-Limpopo region an increasingly complex socio-political landscape and the appropriation of places of power by indigenous farmers resulted in an apparent abandonment of the region by hunter-gatherers by AD 1300 (Van Doornum 2005:198). Her research is complemented by Schoeman's (2006) research in the Shashe-Limpopo, which focussed on conceptual and constructed landscapes. Rain control and ritual activities by indigenous farming communities were centred on powerful hilltop and shelter localities associated with hunter-gatherers. Their findings reveal complex interactive relations, which required hunter-gatherers to change their traditional behaviour in order to retain their somewhat tenuous hold on the land and also to negotiate power relations. A continued presence of hunter-gatherers up to historic times in the Waterberg — although in changed economic and socio-political circumstances — shows different mechanisms at work (chapters 2 and 8). It is suggested that the displaced

hunter-gatherers from the Soutpansberg moved to adjacent regions (Van Doornum 2005), and the close proximity of this region to OBP makes some movement into the OBP study area entirely feasible.

Mitchell (2005:64-71), in a recent article entitled *Why hunter-gatherer archaeology matters*, says that studies on southern African groups have a global relevance. The comparative anthropological and ethnoarchaeological data, which underpin reconstructions of past social relations, ideologies, settlement and subsistence in hunter-gatherer studies, have been collected for little more than a century. Mitchell (2005:65), therefore argues that it is only 'archaeology that can situate that knowledge in a broader historical perspective'. Also, to pursue and explore interactive relationships between the various societies is of immense value for comparative studies worldwide. My own research, the regional study by Van Doornum, and directions identified by Mitchell (2005), demonstrate that a construction of the regional history of hunter-gatherers has the potential to add to the wider hunter-gatherer record. To that end we need to address the following:

Studies of interaction between the different social groups within the region need to be expanded to include more data on the earlier nature of intercultural relationships. In his discussion on the importance and relevance of studies of hunter-gatherers in the southern African context, Mitchell (2005:66) notes 'that *nowhere else* (his emphasis) can so many kinds of interactions between hunter-gatherers and other societies be investigated in such detail or over such a relatively recent time-depth...'. Data on the development of pastoralist economies are notoriously difficult to uncover, but recent discoveries of early pastoralist ceramics in areas to the north (Garcea 2003; Mitchell & Whitelaw 2005) can help to inform on the origins and development of the southern African Bambata ceramics.

The rock art of the area is not a major theme of this study, but it is clearly something that needs research in the future. Rock art signals social cohesion and a sense of identity. Thus, an in-depth study with the focus on more firm dates for the lowlands sequence can contribute towards establishing unequivocal authorship of the regional art expressions. This, in turn, could help to settle the dispute about the origins and identity of Bambata ceramics. I have previously suggested (Van der Ryst 2003), and also discussed in chapter 2, the probability that some of the recent rock art was produced by people of mixed descent, but with a foraging lifestyle. This

is implicit in the study by Peters (2000) when he ascribes some of the later art to the contact period. The remnant Waterberg groups would have carried a knowledge of the art (Van der Ryst 1998a, 2003), and in other regions the offspring of such marriages took an active part in painting events (How 1962:31; Jolly 1995:69). We have no way of knowing whether some of the people who painted the earlier post-contact art were by then culturally mixed, or whether hybridized communities were involved only in the production of some of the very late art.

Only a selective part of the OBP sequence has been explored in detail. The excavated materials of the earlier part of the LSA sequence need to be studied to construct a more complete history of the Holocene. The replacement of the MSA by diverse LSA assemblages is another major theme. Mason's preliminary investigations (1962) and my test excavations found a rich MSA succession at OBP. The southern African MSA represents a unique window on the physical, cultural and social developments within this time frame (Thackeray 1992; Wadley 1993, 2001, 2005a, 2005b, 2005c; Deacon & Deacon 1999; Wurz 1999; Deacon & Wurz 2001). The excavation of the MSA levels at OBP to establish regional developments is a matter of high priority.

In conclusion, the intensive and continuous utilization of this locality, as suggested by Mason's preliminary investigations and my own test excavation, were confirmed, but also surpassed, by data recovered over the six seasons of excavation. The past importance of OBP and the site-specific behaviour of hunters, gatherers and fishers at the shelter allow us to place the people who lived here in the larger context of LSA land-use, procurement patterns and technology (Henry *et al.* 2004:19). The research will provide descendants of the hunter-gatherers of the Waterberg still living there (Van der Ryst 1998a) with some measure of access to their cultural heritage and make allowance 'for the past to be released from abstract specialist theory into the realms of everyday human understanding ...' (Hodder 1992:188). In the names of several localities both in the Limpopo Lowlands and on the Waterberg Plateau (see also chapters 2 and 8) traces of the language and history of the Waterberg hunters, gatherers and fishers are retained, and the rich rock art of the region documents their presence on the landscape.

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Site diagrams

Diagram 1	**Olieboomspoort landscape section**
Diagram 2	**Olieboomspoort site plan**
Diagram 3	**Olieboomspoort sketch plan: layer 10**
Diagram 4	**Southern stratigraphic section A1 - A5**
Diagram 5	**Southern stratigraphic section F1 - F5**