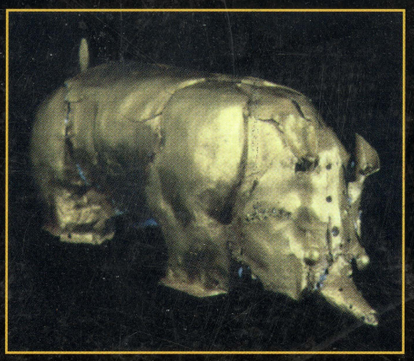

The Archaeological sites of Greefswald

Stratigraphy and chronology of the sites and a history of investigations



Mapungubwe Hill

A Meyer

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UNIVERSITEIT VAN PRETORIA



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To the inhabitants of Mapungubwe and K2

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PREFACE

The metropolis today known as Mapungubwe, on the southern bank of the Limpopo, declined during the thirteenth century, and it disappeared from the annals of the mainstream of the history of Southern Africa for many centuries thereafter. Periodically, small groups of people settled in the area, but the world heard nothing more of a community whose political and economic sphere of influence had reached as far as the east coast of Africa. It was to be seven centuries before this community found its rightful place in history.

Mapungubwe came to the attention of the world again in the same way as many other archaeological areas and early civilisations in other parts of the world did – there was a phase of legend and tales about the erstwhile capital, followed by secretive visits by fortune hunters, and eventually by the arrival of scientific researchers with a scientific mission.

Mapungubwe was discovered in the early 1930's on the farm Greefswald. Researchers operating under the auspices of the University of Pretoria began excavations to illuminate the remains of a vanished culture. Graves with golden beads and other gold objects, the remains of dwellings and stone walls and unfamiliar glass beads – these led to much speculation and many romantic notions. The archaeologists and ethnologists on the project, however, attempted a more considered and balanced interpretation of the finds.

The researchers of the 1930's deserve praise for their pioneering work. They worked under difficult and unhealthy circumstances, they had to operate with inadequate funding, and the rapid turnover of people involved meant that continuity was impossible. They deserve thanks for the vast task they undertook. Nevertheless, we must admit that, by modern standards, their research reports were somewhat lacking in precision.

This is not the place to criticise earlier research, especially since these early researchers operated at a time when standards and guidelines for the study of Iron Age remains did not yet exist. Furthermore, these researchers were so impressed by the gold objects and glass beads found in the graves that they were eager to find more exotic cultural goods of similar value. Consequently, the excavations were done in haste, and stratification and other features in the deposits were not accurately recorded.

Further research was only possible after World War II. In the early 1950's, a decision was taken to resume excavations on a limited scale. The primary aim was to determine the stratigraphy, chronology and cultural content of the deposits by means of systematic excavation and accurate documentation. Although the field work was completed over only two seasons, this research phase marked the beginning of methodical and accurate field work and accurate documenting.

When Archaeology became an independent and specialised subject in the Department of Anthropology in 1961, it was decided that Mapungubwe would be a priority in the training and field work of new students. During the first few years after the rise of Archaeology as an independent field of study, various students from several academic disciplines registered for the subject. Some of them already had another degree. The main reason for their registering for Archaeology was, according to them, their desire to participate in the Mapungubwe project. It was a privilege to work with these enthusiastic students.

A student who made a particularly strong impression on his lecturers was a final year student in Fine Arts. He was not only a devoted student, but he was also a particularly systematic,

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organised and neat worker, as well as a good observer and illustrator. This student was Andrie Meyer, who compiled this report. An award by the Human Sciences Research Council made it possible for a full time Mapungubwe project to be launched, and Meyer was appointed as a field work assistant. He completed his task most successfully, and it is an honour for me, on behalf of his colleagues, students and other interested parties, to thank him for the excellent work he has done.

This report summarises the research completed since the end of the 1960's. Funding by the Human Science Research Council and the appointment of a full time field worker enabled a clear research goal to be formulated to serve as a guideline for this research. This meant, in short, that the data gathered by earlier researchers and their conclusions had to be verified and supplemented, that the cultural features of the various human communities which had lived on Greefswald and the relation to these communities to other communities had to be established, and that the age and chronology of the cultures and the racial context of these people had to be determined.

To achieve these aims, excavations and documentation had to be systematic and accurate. The processing of the factual data had to be presented in such a way that the reports could serve as a useful basis for further research.

The research of the 1970's resulted in a number of specialist reports, including two excellent MA dissertations, that of Andrie Meyer of the Greefswald pottery and that of Elizabeth Voigt on an interpretation of faunal remains in the area. Other researchers, such as Hanisch and Van Ewyk, illuminated the significance of the Greefswald culture south of the Limpopo even more.

Meyer's comprehensive report meets the research goals and follows the guidelines formulated at the start of the research. Students and researchers alike will find in this report an example of good research and documentation. It is a particularly helpful basis for further research on the Greefswald cultures.

It is clear that further research is needed. A reliable chronological basis has been developed, and valuable data has been gathered with regard to specific cultural aspects, but more research is needed on the overall ways of life, the interaction with other cultures, the significance of Greefswald in Southern Africa in those times, and on various other issues. Future work must be performed with the same precision as that which characterises this report.

Until recently, Greefswald has been approached purely from a research perspective. This is justified, because the origins, nature, content and mutual relations of the various cultures and their historical significance had to be studied before they could be presented to the public. Today, a stage has been reached where the knowledge which science has unearthed can be applied in educational and conservation programmes and in the management of heritage sites. Greefswald has become part of a conservation area which will eventually stretch across the Limpopo River into Zimbabwe and Botswana. For the management of the natural and cultural resources in these areas, reliable scientific data are essential.

The Greefswald cultures completed an historical cycle when this phase in the research was reached. These cultures began as an insignificant and unknown community. These cultures rose to political and economic eminence, then declined and disappeared from the stage. Today, they are accorded their rightful place as the group of cultures that occupied one of the most important Iron Age sites in Southern Africa.

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I would like to conclude on a personal note. In 1934, as a young school boy, I stood on Mapungubwe Hill. Little did I dream that one day I would return to that spot and that I would eventually be honoured by being asked to write this introduction. I trust that research on Mapungubwe will continue to be pursued in a scientific manner and that the way in which Greefswald and its people will be made known to the people of Southern Africa and the rest of the world will give due recognition to this important cultural centre.

J. F. Eloff
February 1998

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ACKNOWLEDGEMENTS

The involvement and interest of the University of Pretoria in the archaeological sites of Greefswald resulted in the Greefswald Archaeological Project and the development of Archaeology as a science at the University. The continued administrative, logistic and financial support of a number of staff members of the University has made a considerable contribution to the current research and site conservation programme. The interest and support of the previous Rector of the University, the late Professor D. Joubert, and of his successors, Professor P. Smit and Professor J. van Zyl, as well as of the Vice Rector (Human Sciences), Professor C.R. de Beer and their staff have made both research in recent years and this publication possible. The financial support for the preparation and publication of this report was generously provided by the Vice Rector (Natural Sciences), Professor T. Erasmus. The photographs were provided by Ms H.J. Visser and her colleagues. The maps and stratigraphic drawings were produced by Ms M.M. Geringer and her assistant in the Department of Geography. Much of the typing was done by Mrs C.S. Quinn, secretary at the Department of Anthropology and Archaeology, and Mrs A. Bellingam. Mrs I. Noomé of the Department of English at the University undertook the language editing of the English text in the report. The enthusiastic contribution of various students to the field work made much of the research possible. The technical and educational support by Mr J. Fouché of the Educational Technology service at the University for the production of an electronic educational programme on the Greefswald sites and artefacts is highly valued. Professor N. Roos of the Department of Visual Arts painted Mapungubwe Hill specially for the cover of this book.

A research grant by the Human Sciences Research Council to the University of Pretoria made the greater part of the excavations performed from 1971 to 1973 possible. This grant also resulted in the Eloff Report of 1979. The assistance of the staff members of the National Monuments Council and the excavation permits issued by the Council are sincerely appreciated.

The specialist contributions of a substantial number of scientists made the interdisciplinary research possible. In this regard, special thanks and appreciation are due to Dr J. Vogel and his staff, Mr J. van Aardt and Mr P. Loubser at the Council for Scientific and Industrial Research; Dr I. Plug, Mrs E.A. Voigt, Dr I. Rautenbach, Dr A. Kemp and Mrs M. Kemp of the Transvaal Museum; Prof. H. de Villiers and Prof. M. Henneberg of the University of the Witwatersrand; Dr C.C. Davison of the University of California; Ms S. Saitowitz of the University of Cape Town; Mrs M. Wood of Johannesburg; Prof. C. Plug of the University of South Africa; Mr J. Pienaar and and his colleagues at the Research Institute for Botany; the late Mrs E. du Plessis of Pretoria; Mr E. Hanisch, formerly of the National Cultural History Museum; Mr W. Fish of the Schoemansdal Museum; Prof. P.J. Robbertse, Mr A. Jonker, Mr G. Germishuizen, Mr G. Pienaar, Mr J. Becker, Dr C. Smit, Mr H. Prinsloo, Prof. M. Steyn, Prof. J. Meiring and his staff at the University of Pretoria. The sites were surveyed by Mr T. Roux, Mr P.W. Labuschagne and their assistants.

The South African Defence Force made a significant contribution to the protection and conservation of the Greefswald sites and their environment, and made it possible for countless visitors to see the sites. The most important contribution by the Defence Force was its logistic support to the research project, including life-saving water, cooling facilities, accommodation during unexpected bad weather and the interest of individual members of the South African Defence Force in the archaeological sites of Greefswald.

The involvement and assistance of the Department of Nature Conservation of the Transvaal Provincial Administration before April 1994, the Department of Environmental Conservation

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and Tourism of the present Northern Province, and currently the National Parks Board, have already contributed significantly to the present course of the project.

The interest in and concern of archaeologists, conservationists, news media and the general public with regard to the Greefswald sites and their cultural remains make the research and conservation programme a worthwhile project. The Transvaal Branch of the South African Archaeological Society deserves appreciation for the organized participation of its members in field work and visits to Greefswald. Mr D. Pretorius, member of the Committee of the Transvaal Branch and also a well-known photographer from Pretoria, generously supported the project with outstanding field photographs, advice on field photography and encouragement.

The late Lemmer family on the neighbouring farm La Reve and the Moerdyk family on Samaria were always available with generous help wherever it was needed. They provided information on local history and on the archaeological sites and gave permission for and encouraged research.

Professor Ray Inskeep, whose concern for the quality of the research on Greefswald is greatly valued, acted as referee and editor of the contents of this report. Professor J.F. Eloff, who visited the early excavations as a boy with his father in the 1930's, returned later as an archaeologist and lecturer with his students to continue the Greefswald project from 1968 and to direct it till his retirement in 1984, when he left his students with a vision of future research and conservation on the key archaeological sites of Greefswald. The interest and active support of Professor R.D. Coertze as head of the Department of Anthropology and Archaeology since 1988, and recent support by Professor J.B. Hartman, new head of the Department, made the conclusion of the current project and the start of a new project possible. The restoration and permanent exhibition of the gold artefacts and a selection of other cultural objects is supported by the interest and initiatives of Mrs C. Kaufmann of the National Art Gallery in Cape Town, Dr D. Miller of Cape Town University and staff members of the National Cultural History Museum in Pretoria.

The support and understanding of the family members of the archaeologists who spent much time on archaeological trips to Greefswald and many hours in the laboratory and behind their desks, deserve greater thanks than can be expressed in words.

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INTRODUCTION

The Greefswald Archaeological Project is a research project on the archaeological sites on the farm Greefswald 37 MS, which is situated in the Northern Province of South Africa, adjacent to the international borders between South Africa and two of its neighbouring states, Botswana and Zimbabwe. The project, initiated in 1933, went through several phases of research, including both basic research and various interpretations of the sites, conservation activities and numerous exhibitions, lectures and publications on the sites and their cultural contents.

This report is intended as a project report and field data source for archaeologists, site managers and educationists. It focuses on the field work done from 1970 to 1995 on the main sites, called Mapungubwe and K2, and on observations on several small sites on Greefswald. The report is a translated summary of the research report by J.F. Eloff on excavations between 1971 and 1975, and of supplementary research done from 1992 to 1995. This period of research, from 1970 to 1995, is called Phase Three of the Greefswald Archaeological Project of the University of Pretoria and was carried out by A. Meyer under the overall direction of J.F. Eloff. The early excavations, now referred to as Phase One of the project, lasted from 1933 to 1940. The subsequent small scale test excavations between 1950 and 1970 are referred to as Phase Two, and prepared the way for Phase Three.

The discovery of prehistoric gold objects and other cultural remains with human skeletons in rich archaeological deposits on Mapungubwe, a flat-topped sandstone hill in the bushveld wilderness of the Northern Transvaal Lowveld, from 1932 to 1934, attracted attention world wide. Subsequent archaeological investigations on this site indicated that it was the settlement site of a community of some importance belonging to an Iron Age cultural complex of subsistence farming communities which lived in the central Limpopo River valley between seven hundred and a thousand years ago. Mapungubwe Hill is situated near the confluence of the Limpopo and Shashe Rivers. Near Mapungubwe, in a small valley amongst the sandstone hills, is another large Iron Age site now known as K2. K2 was inhabited by a prominent Iron Age community between eight hundred and thousand years ago. Smaller Iron Age sites are situated in the sandstone hill landscape near Mapungubwe and K2.

The purpose of this field report is to provide information on the stratigraphy and chronology of the main sites on Greefswald with reference to associated material cultural remains. An overview of previous research, set against the background of contemporary trends in archaeological research, leads to the conclusion that the excavation reports of Phase One of the Greefswald Archaeological Project were presented as general field diaries rather than as stratigraphic reports, and that the reports and explanations of archaeologists over time were often influenced by then current trends in archaeological thought.

Consequently, there is a pressing need for an accurate and detailed data base on the archaeological sites and their cultural contents to facilitate basic research and theoretical explanation, as well as management programmes. The stratification of the excavated deposits and their cultural contents is described, emphasising stratified features and site chronology. The cultural contents of the sites were identified as the settlement remains of prominent indigenous Iron Age communities with a subsistence economy, based on mixed farming and trade with foreigners via the east coast of Africa. It has been established that settlement at Mapungubwe and K2 occurred at the same time, from ca 1030 AD to ca 1220 AD, after which time intensive settlement continued on Mapungubwe till ca 1290. After Mapungubwe Hill was abandoned, the surrounding Limpopo Valley was not deserted as has previously been thought, but

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small Iron Age communities settled in the Greefswald environment on several occasions during the next few centuries.

This report concludes that continued specialized and interdisciplinary research is required to reconstruct cultural sequences and settlement patterns as well as environmental conditions on Greefswald; to understand the development of social structures and the process of intercultural contact in the area; to piece together the nature of the agriculture and technology of the site inhabitants; to develop a theoretical base for the relevant research; to improve data management procedures; to continue with data collection, research and management; to develop a relevant educational programme and to publish a shorter book for popular use.

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1 THE GREEFSWALD ENVIRONMENT AND ITS ARCHAEOLOGICAL SITES

1.1 Subsistence farming communities, their cultural heritage and natural environment

The Greefswald subsistence economy, community settlements and their natural environment

The archaeological and historical evidence of a subsistence economy and of the settlement complex of subsistence farming communities during the Iron Age in the central Limpopo River valley during the Iron Age indicates the existence of favourable environmental conditions during the middle phase of the Iron Age. These subsistence practices supported a growing Iron Age population and its developing social structures. On Greefswald, the site locations, settlement remains, remains of agro-pastoral products, traded glass beads, fragments of ivory, gold, and Iron Age artefacts found in the archaeologically rich deposits of the sites reflect the dependence of the site inhabitants on their own particular natural environment (cf. Figures 1.1 and 1.2).

The dramatic increase in mixed farming, together with increased trade in gold and ivory, during the five hundred year period from ca 800 AD to 1300 AD was followed by a five hundred year period of apparently less active farming and trade from 1300 AD to 1800 AD. This decline may be ascribed to the influence of fluctuating environmental conditions similar to those of the historically known fluctuation in tsetse fly infestation, malaria and conditions of higher rainfall or drought in the area during the nineteenth and twentieth centuries.

The location and cultural contents of the settlement sites clearly reflect a preference for settlement locations on and among the sandstone hills of the central Limpopo valley (cf. Figure 1.12). It also suggests the local need for pasture for herds of cattle and small livestock as well as for agricultural land. These settlement tendencies and the remains of cultural products may be interpreted as material evidence of Iron Age values, survival skills and achievements, and of the patterned and innovative relationships of the human population with the environment[1].

Research, conservation and the environment

Both the universal and the unique characteristics of the Iron Age cultural remains on Greefswald and their relationship with the environment must be identified, studied and interpreted within the local, historical, geographical and temporal contexts of Greefswald. An interdisciplinary approach to research and to the management of these cultural resources in relation to their environment is required to ensure meaningful research. This report includes a brief overview of the current environment of the Greefswald archaeological sites. The man-environment relationship of the Iron Age people of the Central Limpopo River valley does not fall within the scope of this report, but constitutes a separate future research topic.

1.2 Aspects of the current natural environment

Geology

A prominent feature of the present environment of Greefswald is the number of steep-sided sandstone hills on top of mudstone deposits, with numerous small dolorite dykes. These

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geological formations are part of the Karoo System, and developed during the Triassic period, approximately 200 million years ago[2].

The oldest exposed formation is the alluvial red mudstone which contains the fossilized remains of reptilian fauna[3] and deposits of light yellow mudstone. Overlying the red mudstone, there are sandstone deposits which accumulated as wind-blown desert sand deposits[4]. The sandstone deposits are now breaking up into huge rocks on the slopes of the hills and are weathering away into the fine grained sand which covers the valley floors. Scattered across the landscape there are small dolorite dykes, penetrating the mudstone and sandstone deposits as a result of volcanic action during the Late Triassic, Jurassic and Cretacious periods over a period of 100 million years[5]. Mudstone and dolorite gravel from the weathered hill slopes were often used as building material for hut floors and external floors on the Iron Age settlement sites on Greefswald.

Climate

Today, the climate of the environment is arid sub-tropical. The summer temperatures are high and often in excess of 30 degrees C. The winter temperatures are mild, with infrequent frost along the river valleys. The region enjoys summer rainfall, but rainfall tends to be erratic, varying between 140 mm and 500 mm per annum. The arid landscape has been shaped by thunder showers, combined with rapid run-off and the poor water retention capabilities of the shallow topsoil, and with often extended periods of dry, hot weather[6].

Flora

The veld type of the Greefswald region is classified as the north-western variation of Mopani Veld, which is a type of Savannah Bushveld found in the Limpopo Valley area north of the Soutpansberg mountain range[7]. Vegetation in this region includes the fairly dense, shrubby growth of *Colospermum mopane* together with other species of trees rising from sparse, tufted grassveld. In parts, the Mopani trees are dominant, but in the valleys there tends to be a mixture of various species of trees. The Baobab tree, *Adansonia digitata*, is typical of the area. A list of the plant species found on Greefswald is given in Appendix 8.1.

Fauna

Even today, a wide variety of animal species is present on Greefswald. Distinctive mammal species in the area include *Aepyceros melampus* (impala), *Tragelaphus strepciseros* (kudu), *Tragelaphus scriptus* (bushbuck) and *Panthera pardus* (leopard). The local bird population includes *Francolinus natalensis* (Natal francolin), *Aquila verreauxi* (black eagle), *Haliaetus vociter* (fish eagle) and *Turtur chalcospilos* (emerald-spotted dove). A report on mammals occurring on Greefwald is given in Appendix 8.2.

1.3 Humans in the landscape: Past and present

Stone Age

Stone implements belonging to the Early, Middle and Later Stone Ages have been found and sometimes collected in the Greefswald area[8]. Rock paintings in rock shelters on Greefswald (cf. Figure 1.13) and elsewhere in the area are evidence of hunter-gatherer communities in the local prehistoric landscape. The Sarwa were hunters and gatherers in the area[9]. In recent times, the Sarwa were still living alongside farming communities such as the Ngona in the north-western Transvaal[10].

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Iron Age

Iron Age sites and pottery predating Mapungubwe and K2 have been found in the surrounding central Limpopo Valley. A few potsherds found in the lower deposits at Mapungubwe were identified as Early Iron Age pottery similar to the pottery from Happy Rest near Louis Trichardt[11]. Iron Age sites with material cultural remains known as Zhizo are concentrated in this part of the central Limpopo valley and have been dated to the period between 800 AD and 1000 AD. A particularly large Zhizo site was excavated on the farm Schroda, east of Mapungubwe[12]. A small site which contains Zhizo pottery, recorded as Map 18, has been located to the west of Mapungubwe (cf. Appendix 8.11).

The archaeological sites, known as Mapungubwe and K2, are currently the most prominent and best known Iron Age sites in the Limpopo River valley. They represent the K2 and Mapungubwe Iron Age cultures which existed in this region between 1000 AD and 1300 AD. Sites culturally related to K2 are situated to the west of Greefswald. One of these sites was excavated by Hanisch at Pontdrift[13]. Sites culturally related to Mapungubwe have been found to the east of Mapungubwe. One of the latter sites was excavated by Van Ewyk[14].

Small Iron Age sites postdating Mapungubwe and K2 have been recorded on Greefswald[15]. Stone-walled sites on hill tops, including some identified as Khami type ruins, have also been found in the region[16].

Historical times

According to oral tradition, communities belonging to the Lea and Twamamba tribes, which were related to the Venda and the Shona-speaking people, settled in the Greefswald region. They were followed by Sotho-speaking people after ca 1700 AD[17]. Following the settlement of the first Europeans in the Soutpansberg District during the nineteenth century, frontier economic activities were established, in particular agriculture, hunting, forestry and mining[18].

The seasonal presence of tsetse fly in the Northern Transvaal Lowveld during the nineteenth century[19] made cattle herding difficult for local Iron Age communities. Malaria made living conditions even worse. As a result, the Greefswald region was primarily used for hunting from around the turn of the century until after the 1920's. Following the discovery of gold in stone ruin sites north of the Limpopo River, prospectors and treasure hunters searched for similar sites south of the Limpopo River. This treasure hunt eventually led to the discovery of Mapungubwe in 1932.

Toward the end of the nineteenth century, the first Europeans to reach this part of the Limpopo valley heard rumours of buried treasures in the Limpopo valley. A local hermit, known as Lottering or Lotrie, was reported to have lived in a rock shelter close to or at Mapungubwe and to have found gold beads there. Lottering was claimed to have given a clay pot, which he said he had found on Mapungubwe Hill, to a farm worker. The worker, in turn, told a member of the Van Graan family. The trail eventually led the Van Graans to Mapungubwe Hill and the discovery of the gold artefacts in graves on the Hill[20].

1.4 The archaeological sites of Greefswald

The Mapungubwe complex

The Mapungubwe complex consists of Mapungubwe Hill, the Southern Terrace at the southern foot of Mapungubwe and a settlement complex on a sandy plateau to the north-east of Mapungubwe Hill (cf. Figures 1.1, 1.2 and 1.3). Mapungubwe, its lower slopes and the

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Southern Terrace are all components of a single habitation site of approximately 10 hectares.

Mapungubwe Hill is a sandstone hill with vertical cliffs and a flat summit. It is approximately 30m high and about 300m long. A sandy valley enclosed by rocky outcrops surrounds the Hill (cf. Figures 1.3, 3.52 and 3.53). In contrast to the summits of surrounding hills and ridges, the summit of Mapungubwe is covered by a substantial archaeological deposit. There are stone terrace walls and isolated free-standing stone walls on the Hill (cf. Figures 2.4 and 2.5).

The archaeological deposits on Mapungubwe Hill contain a vertical succession of gravel floors and the rubble of burnt huts. Small, rough stone platforms and mortar stones were found in the central levels of the deposit. Potsherds, animal bones, traded glass beads and other cultural remains were commonly found throughout the deposit.

The Southern Terrace consists of stratified deposits and stone terrace walls at the base of the southern slope of Mapungubwe Hill (cf. Figure 3.53). Below the western ascent of Mapungubwe Hill, isolated, very large boulders lie close together. The remains of rough stone walls and steps can be seen between and adjacent to these boulders, forming a stone entrance (cf. Figure 1.6). The occupation deposit between these boulders and the Hill is exceptionally deep.

The stratification of the Southern Terrace is similar to that of the Hill, consisting of a vertical succession of gravel floors and burnt hut rubble. Numerous small stone platforms and mortar stones are present, especially in the middle levels. The most common finds are potsherds, animal bones and traded beads.

The K2 complex

K2 is situated approximately 1 km to the south-west of Mapungubwe Hill in a small valley surrounded by cliffs of Bushveld sandstone (cf. Figures 1.1 and 1.2). The valley floor is step-shaped, with a somewhat higher level in the centre of the valley, where the main settlement deposits of K2 are situated, and a lower level on the eastern part of the valley floor (cf. Figure 1.8). The most conspicious feature of K2 is the huge, central midden or mound of ash and household refuse (cf. Figure 1.10).

The K2 site is the extensive settlement site of a mixed farming community. The main settlement site of approximately 5 hectares consists mainly of the remains of a homestead complex, deposits of cattle and small stock kraals and middens. Judging by the arrangement of the prominent site features, K2 apparently consisted of a central homestead area surrounded by peripheral homestead areas.

The central homestead area of the site is situated more or less in the centre of the valley floor. It is today represented by the prominent dung deposits typical of a kraal for domesticated animals, stratified deposits of a homestead area on a low ridge to the east of the kraal, and the remains of smaller middens in the proximity of the central homestead area.

The peripheral settlement remains are located around the central living area, closer to the sandstone cliffs and entrances to the valley. The most prominent of these are the north-eastern homestead and the midden area on the southern slope of Bambandyanalo Hill (cf. Figure 1.9). An eastern midden, known as K1, is situated on a lower level of the valley floor, close to the eastern entrance to the valley. Settlement remains also occur close to the cliffs to the west of the central settlement area.

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The central kraal

The central kraal is preserved as a thick deposit of light-coloured, almost white matter, mixed with fine-grained sand, small quantities of potsherds, bones and charcoal. The kraal might have been rebuilt at least once during the occupation of the site, as the lower levels of the kraal deposit seem to be apparently partially overlapped by and to have been eventually covered by the large central midden which developed from the eastern side. This deposit can be observed in part in the collapsed wall of Gardner's large excavation of the south-eastern part of K2[21].

The central midden

The most prominent feature of the site is a huge midden or ash and refuse heap in the centre of the site. A midden overlies most of the kraal's dung deposits. A huge test trench, No 1, excavated by Gardner in 1935[22], cuts through the midden and can still be clearly seen half a century later (cf. Figure 1.10). In the collapsed walls of this trench, a large number of bone fragments and potsherds are exposed. Test Trench Ts 3, which was excavated in 1972, proved the midden to be stratified to some extent and to contain a vast amount of discarded household materials, especially bone fragments, potsherds and glass beads.

The central homestead area

The central homestead area is situated on a slight rocky ridge in the centre of the valley floor, on the eastern side of the central midden and kraal. It consists of a stratified deposit of mudstone gravel floors, burnt hut rubble, household refuse, concentrations of ash and layers of sandy soil. The central homestead area was identified during the 1972 excavations[23]. Gardner reported that layers of gravel had been observed in his test pits in this area[24], but he considered these layers to be natural phenomena or to be settlement remains left there by later occupants of the site.

Middens adjacent to the central homestead area

Close to the homestead area, deposits containing ash were exposed in recent animal burrows. The contents and the extent or circumference of these deposits are unknown, although pottery similar to the pottery elsewhere on K2 and bone fragments can be observed on the surface of these midden deposits.

The north-eastern homestead area

To the east of the central settlement area, the remains of a gravel floor are still visible in excavation Rn 1 (cf. Figures 3.2 and 3.31) and the presence of potsherds and of ash deposits on the slope at the foot of Bambandyanalo Hill provide strong indications of Iron Age settlement.

The north-eastern midden area

The lower slope of Bambandyanalo is covered by an ashy midden deposit which contains mainly discarded household materials (cf. Figure 1.9). During test excavations here in 1934, the graves of four children and a variety of artefacts were found[25]. During 1972, the graves of three children as well as a variety of household materials were found in Test Trenches Ts 1 and Ts 2[26].

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The eastern midden (K1)

The eastern midden is situated on the lower, eastern level of the valley floor. Gardner called it K1 and described it as a sandy mound of unconsolidated debris. Upon initial observation, the mound appears to be a midden containing cultural material similar to that found in the central midden of K2. At present, the valley floor close to K1 seems to be sterile, although a few potsherds have been found on the surface.

Small sites

Several small sites have been observed on Greefswald and in the surrounding environment. Some of these have been briefly investigated and they are recorded as Map 5, Map 9, Map 10, Map 11 and Map 12 (cf. Figures 1.1 and 1.12; Appendix 8.11). For the most part, these sites consist of shallow ash mounds, of what appear to be animal kraal deposits, of household refuse such as potsherds and bone fragments, and of a small number of stone walls which are usually situated on rocky surfaces.

1.5 Summary: The archaeological sites of Greefswald and their environment at a first glance

The archaeological sites of Greefswald are regarded as the remains of settlement sites of subsistence farming communities which existed in the central Limpopo River valley during periods when environmental conditions were favourable to subsistence agriculture and animal husbandry. The technology of the communities has been identified as representative of the prehistoric Iron Age. The main sites are K2 and Mapungubwe.

In the current phase of the Greefswald Archaeological Project, a number of features of the archaeological sites and the natural environment have been observed and commented on, including the plant and animal life present in the area today (Appendices 8.1 and 8.2). The presence of Stone Age stone tools, and rock shelters with rock paintings and microlithic stone artefacts indicate that prehistoric hunter-gatherer communities moved across the local landscape from time to time. Pottery found at Mapungubwe and elsewhere on Greefswald belonging to earlier phases of the Iron Age in the region, predating K2 and Mapungubwe, indicates that small communities belonging to early subsistence farming populations were once attracted to the Greefswald area.

Eventually, the large and complex settlements now called K2 and Mapungubwe developed amongst the sandstone hills near the confluence of the Limpopo River and the Shashe River, indicating the rise of more complex subsistence farming communities in this Lowveld savannah environment. K2 consisted of a central homestead area adjacent to a central cattle kraal, a large central midden which eventually covered the cattle kraal, and several peripheral homestead areas. Mapungubwe consisted of the settlement on the top of Mapungubwe Hill, a large settlement at the southern foot of the Hill, settlement elements on and near its eastern and northern slopes, and settlement elements on a natural terrace to the north-east.

During the centuries after the communities of K2 and Mapungubwe had disappeared, small herding communities settled in the area from time to time. During the historical period, several population groups are known to have been present in the region, but endemic diseases and periods of drought made farming almost impossible. During that time, the bushveld environment of Greefswald was used primarily for hunting.

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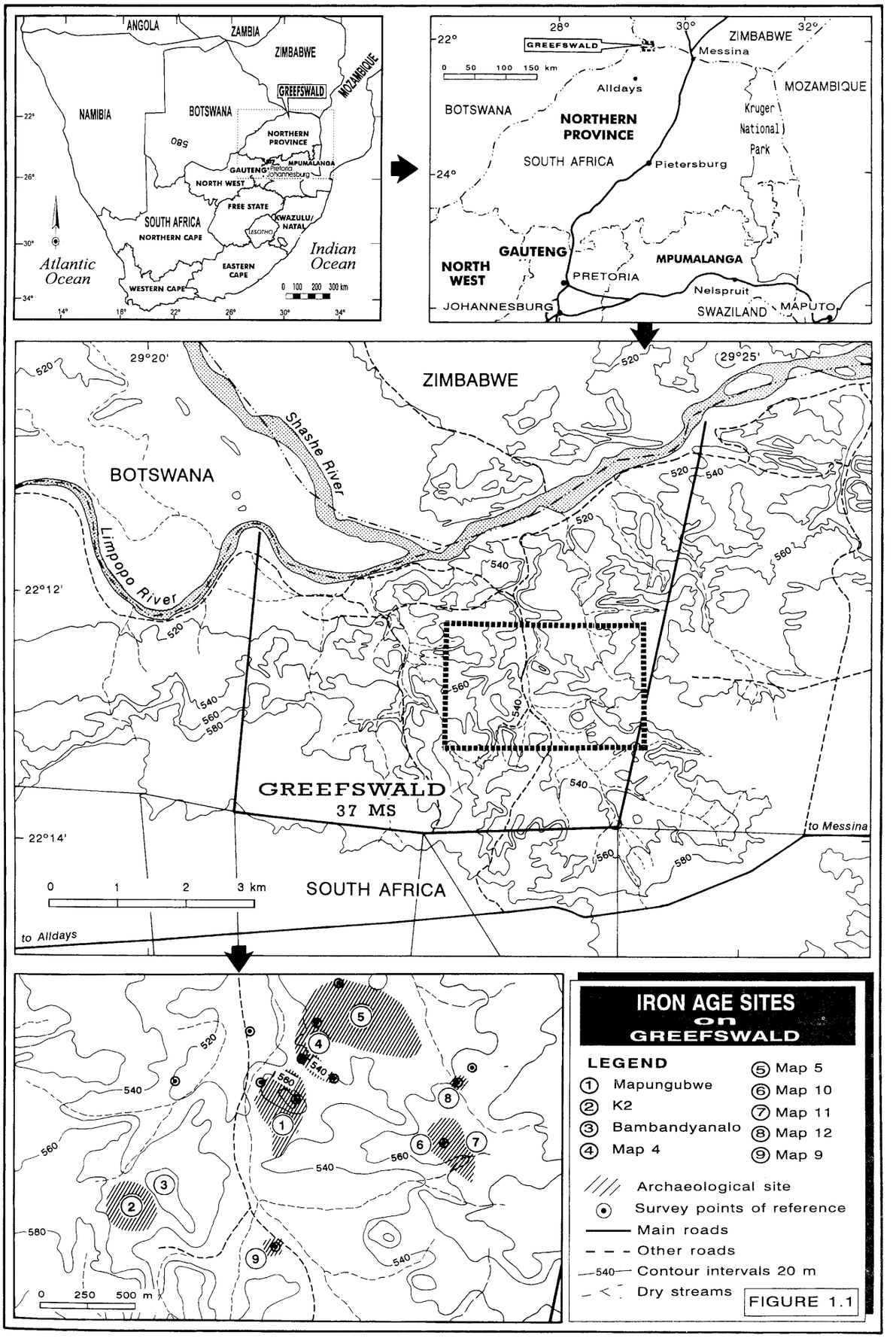

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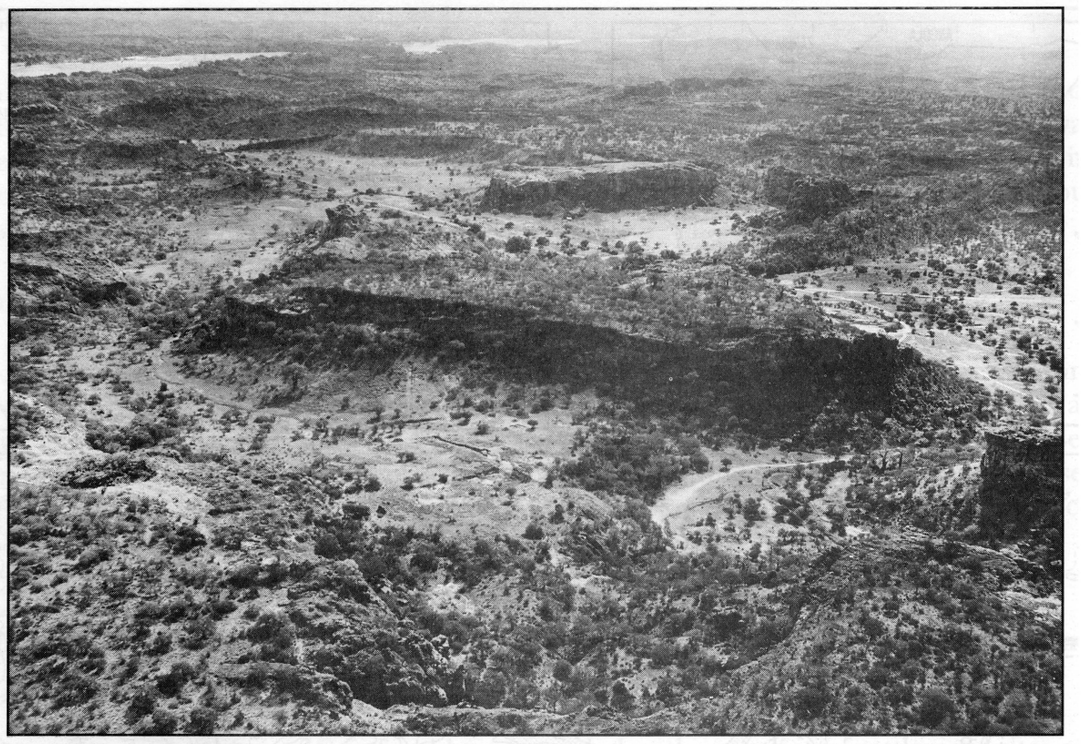

Figure 1.2[27]

An aerial view of the Greefswald environment and the main Iron Age sites from the south-west in 1972. K2 is situated in the valley in the foreground, Bambandyanalo Hill can be seen in the centre and Mapungubwe Hill is visible immediately behind Bambandyanalo (cf. also Figure 1.1).

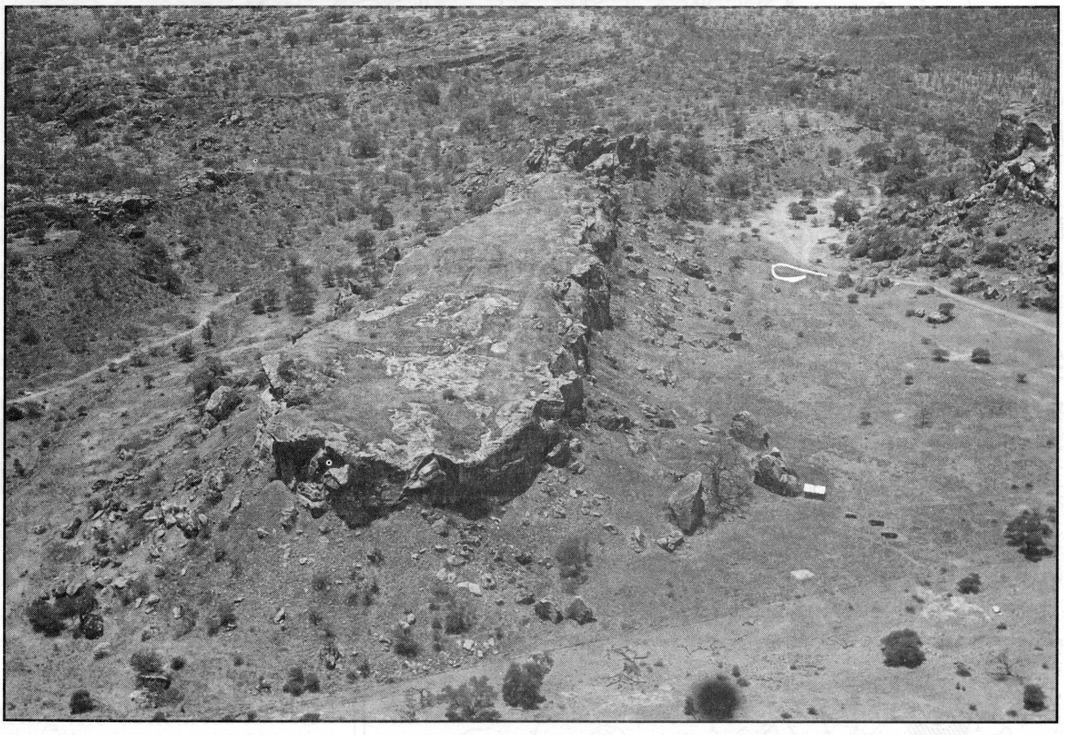

Figure 1.3[28]

An aerial view of Mapungubwe Hill from the north-west, ca 1972. Mapungubwe is visible in the centre, with the main part of the Southern Terrace and excavations of 1971 to the right, at the southern foot of Mapungubwe Hill. The camp site of the University of Pretoria is situated in the background to the right.

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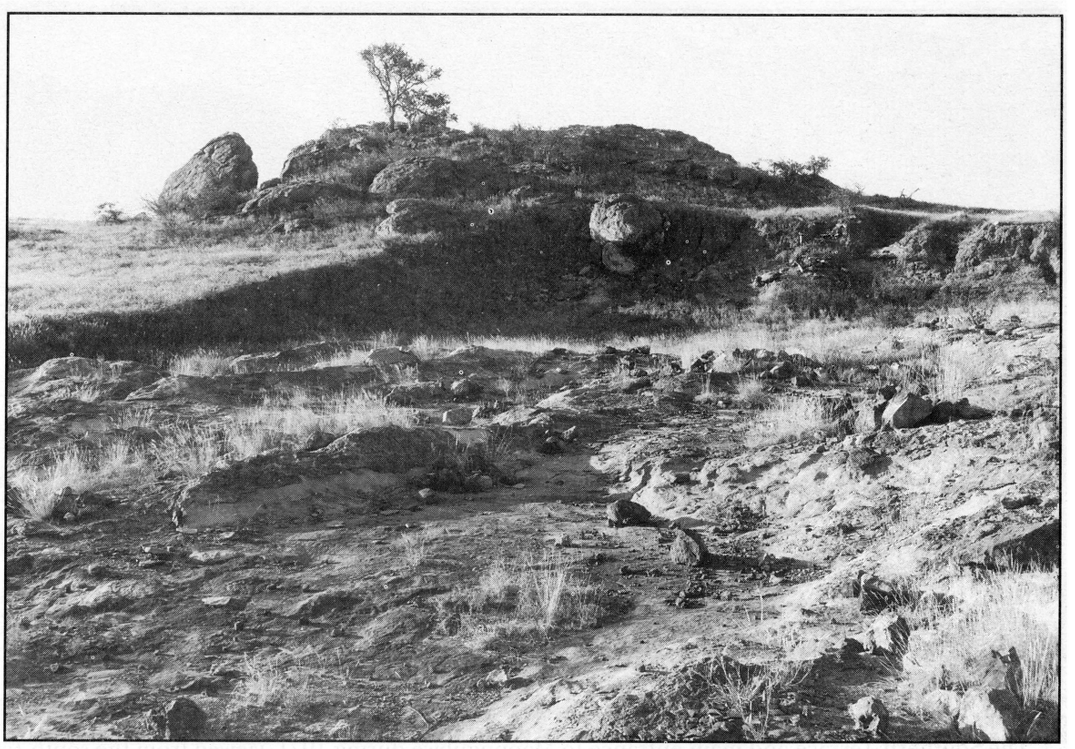

Figure 1.4[29]
The summit of Mapungubwe Hill in 1972. Here Gardner's large scale excavation can be seen near the western end of the hill, viewed from the south. Excavation Mk 1 was done in 1973 in the western wall of Gardner's excavation, to the left (cf. Figure 3.53).



Figure 1.5[30]
The Southern Terrace, viewed from the summit of Mapungubwe in 1971. This is the location of Excavation JS 2(a) by Jones and Schofield in the settlement area which has been interpreted as the main entrance to Mapungubwe Hill (cf. also Figure 3.53).

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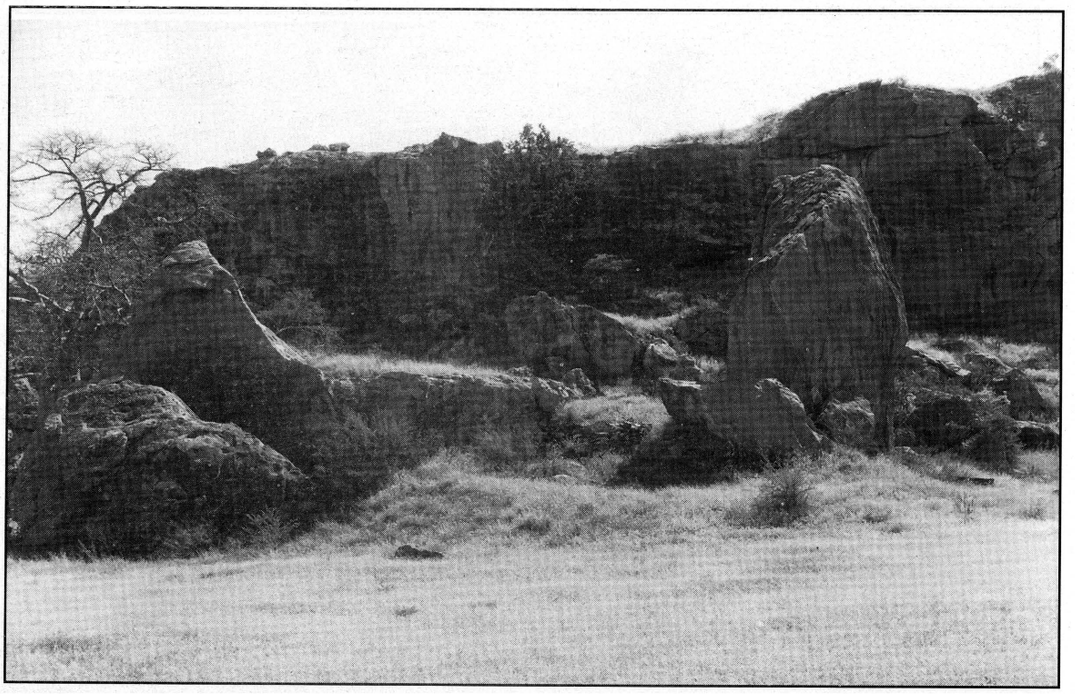

Figure 1.6[31]
The Southern Terrace and main entrance to Mapungubwe during 1971, viewed from the south (cf. also Figure 3.53). The stone terrace walls can be seen between the large rocks in the centre. Mapungubwe Hill is visible in the background.

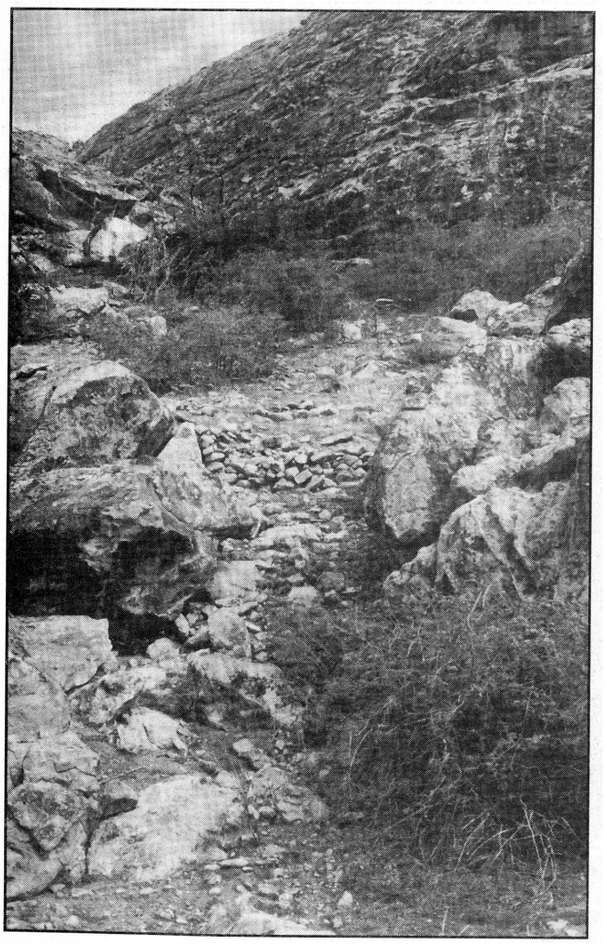

Figure 1.7[32]
The remains of stone terrace walls on the slope at the northern foot of Mapungubwe Hill in 1995.

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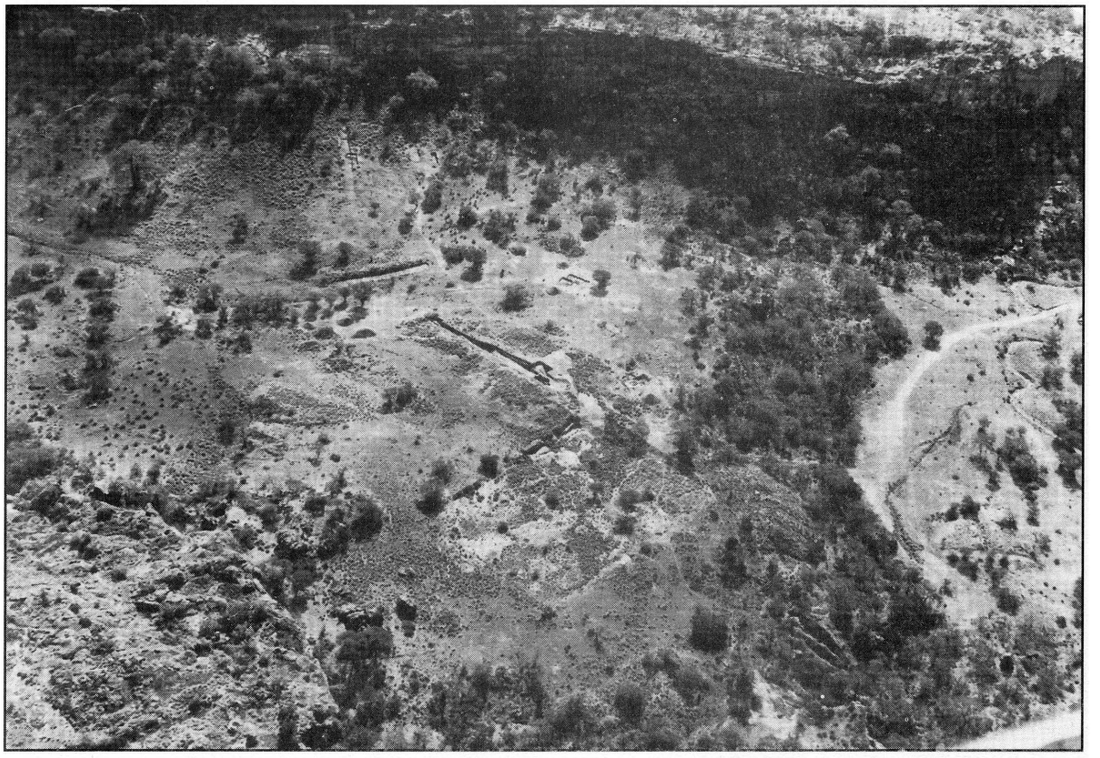

Figure 1.8[33]

An aerial view of the K2 site from the south-west, ca 1972. Gardner's large scale excavations can be seen in the centre (cf. also Figure 3.2). The midden known as K1 is situated on the lower valley floor to the right.

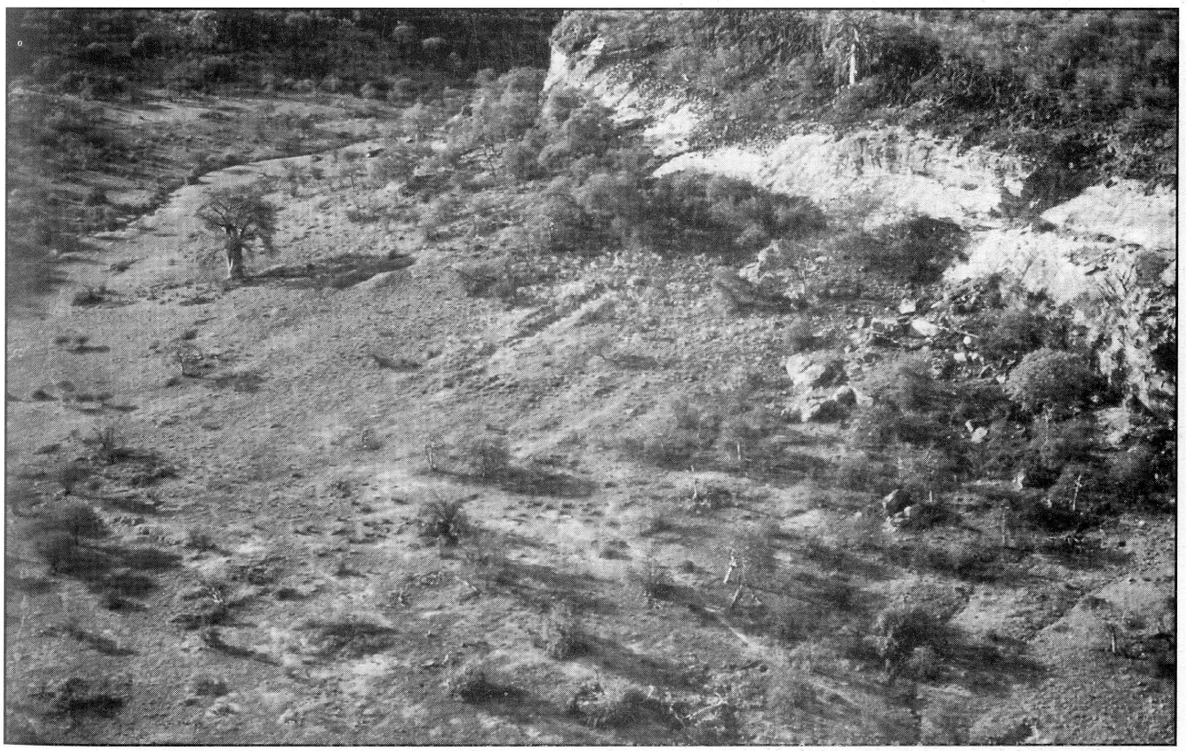

Figure 1.9[34]

An aerial view of the north-eastern settlement area at K2, seen from the south-east in 1995. Stone wall ruins can still be seen on the southern cliff of Bambandyanalo Hill, here visible on the right (cf. also Figure 3.2).

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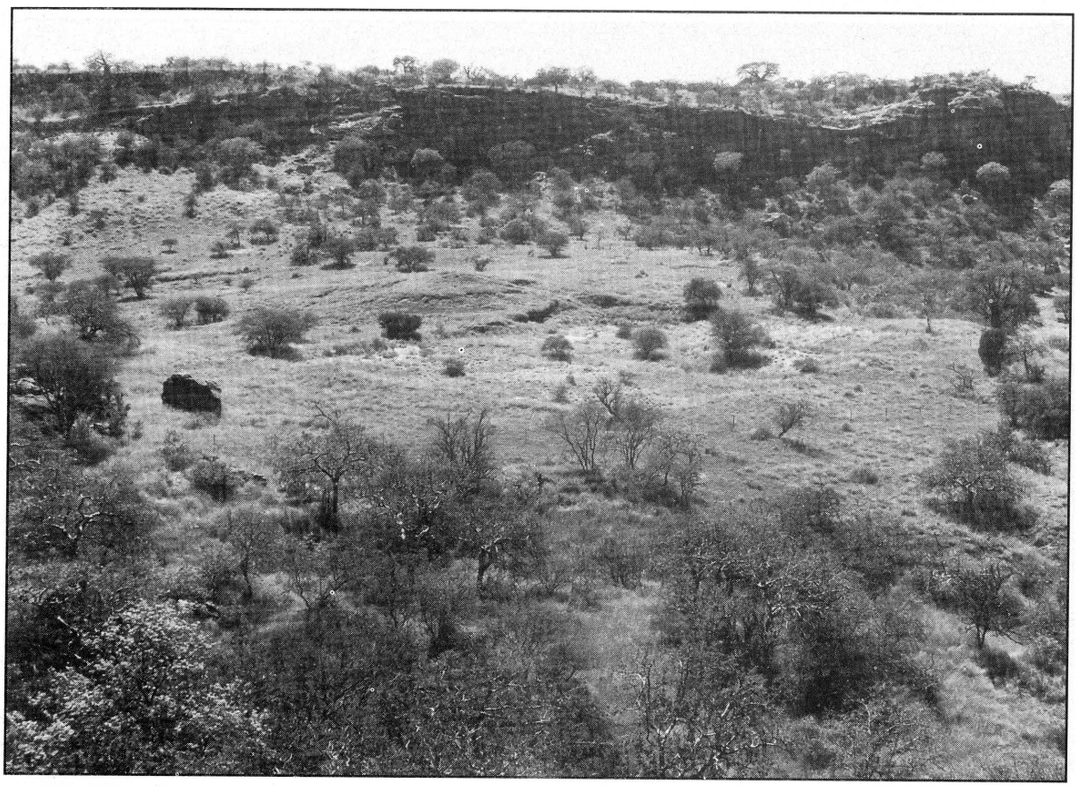

Figure 1.10[35]

K2 in 1971, viewed from the western peripheral settlement area, looking towards the north-east. The central midden and Gardner's extended excavation are in the centre. The north-eastern settlement area on the lower slope of Bambandyanalo Hill is situated in the background on the left.

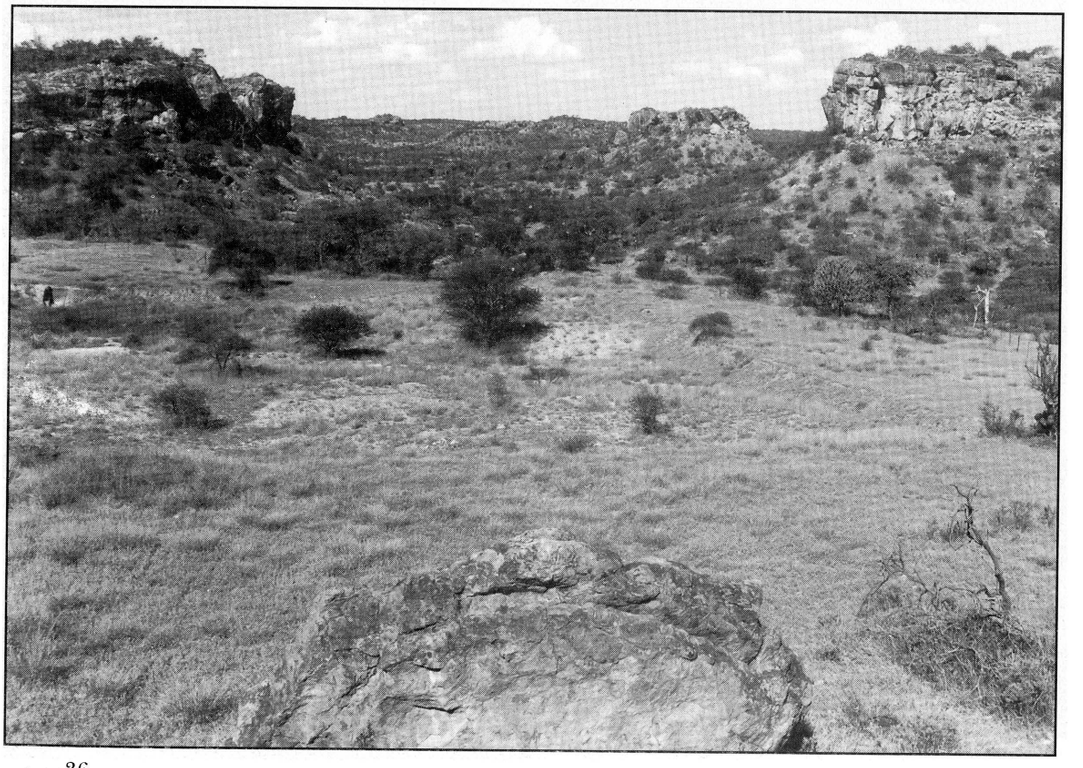

Figure 1.11[36]

The southern part of K2, viewed from the west. Gardner's extended excavation can be seen in the centre, with the undisturbed deposit of the western settlement area in the foreground (cf. also Figure 3.2).

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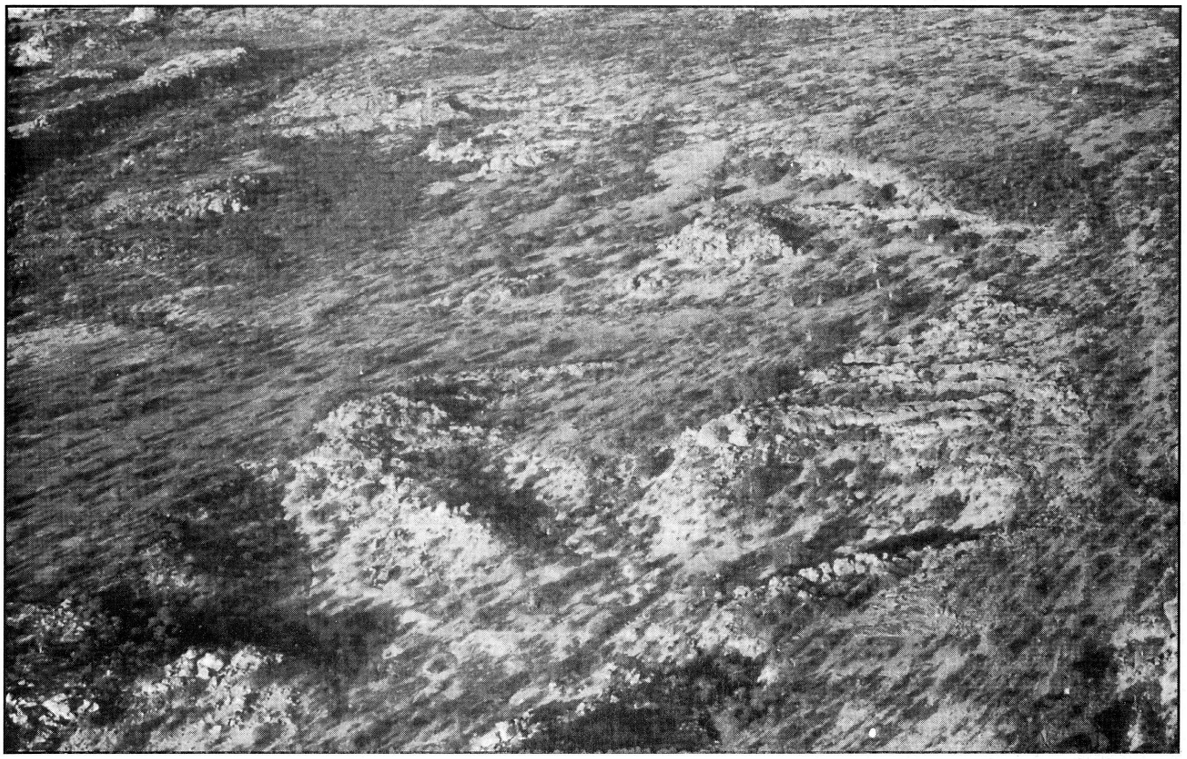

Figure 1.12[37]
An aerial view of the rugged sandstone hill terrain to the east of Mapungubwe Hill. Several small Iron Age sites in this particular location have been dated to a period later than Mapungubwe (cf. also Figure 1.1).



Figure 1.13[38]
Some examples of rock paintings in Mongoose Shelter to the east of Mapungubwe Hill.

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2 AN OVERVIEW OF THE GREEFSWALD PROJECT

2.1 The phases, trends and results of the Greefswald research: An introduction

Discoveries, research approach and research history

Since valuable artefacts and human remains were first discovered on Iron Age sites on the farm Greefswald 37 MS in 1932 and 1933, the nature and course of the Greefswald Archaeological Project has been determined by various factors, notably the value of the sites and their cultural contents, the characteristics of the sites, the value systems of society, the contemporary approaches and methodology in archaeology, critiques by scientists and contemporary knowledge of the Iron Age and indigenous history. If one is to understand and evaluate past research, and design meaningful future projects, a brief overview of the previous work is necessary against the general background of archaeology in southern Africa.

Research on the Greefswald sites, known as K2 and Mapungubwe, was initiated in the early 1930's. The research on Greefswald went through various phases, just as the development of archaeology as a science in southern Africa also went through various stages. The evaluation of earlier research is often directed as much at the investigators and their methods as at the significance of the sites, themselves. During the first decades of this century, exploration in search of cultural relics or treasures led to the discovery of many archaeological sites, including Mapungubwe in 1932. Part-time archaeologists who had been active in southern Africa since the 1920's became involved in archaeological research at Mapungubwe and K2 from the time of the discovery till the early 1950's. After that, the need for scientific archaeological research on the Greefswald sites contributed to the involvement of professional, full-time archaeologists in the project and a significant increase of scientific data and the improvement of project management procedures.

The course of past research on the Greefswald sites may be divided into three phases, namely the early excavations from 1933 to 1940, now termed Phase One, an intermediate period between 1940 and 1950 as well as small scale excavations between 1950 and 1970, now called Phase Two, and the Phase Three programme from 1970 to 1995. Phase Four, which started in 1966 and will last until the year 2000, is currently in progress.

Early discoveries and interpretations

Since the discovery of the Zimbabwe ruins and gold objects in deserted stone-walled settlements in southern Africa during the second half of the nineteenth century, a vast quantity of information has become available on prehistoric stone-walled sites and mines in this region. Fairly large quantities of gold objects were removed from stone-walled sites north of the Limpopo River for commercial purposes by Rhodesia Ancient Ruins Ltd.[1], during the late 19th century. During the early 20th century, archaeological publications such as an article by J.F. Schofield in 1926[2], a map of prehistoric stone-walled settlements and mines compiled by Wagner in 1929[3] and the book on the Zimbabwe ruins by Caton-Thompson in 1931[4], focused attention on these sites.

The first European known to have climbed Mapungubwe Hill was F.B. Lotrie, who did so towards the beginning of the century[5]. Mapungubwe was investigated by prospectors during 1929 or 1930, and they apparently removed pottery from the Hill[6]. The German anthropologist Frobenius is reputed to have attempted an excavation on Mapungubwe Hill[7] during 1929[8].

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Some of the first archaeologists in South Africa eventually contributed to archaeological research on Mapungubwe. During the 1920's, the development of early professional archaeology in South Africa was stimulated when archaeologists first pursued full-time or part-time careers in archaeology. Most of them concentrated their research on the Stone Age of southern Africa[9]. Amongst these archaeologists were A.J.H. Goodwin, who moved to Cape Town in 1923[10], the missionary N. Jones, who concentrated his Stone Age research north of Kimberley[11], and the civil engineer C. van Riet Lowe[12], who was active in the Orange Free State at that time. The period from 1920 onwards was a period of exploration, focusing on the Stone Age and the development of appropriate terminology[13]. J.F. Schofield, an architect who became interested in the Zimbabwe Ruins[14], turned his attention to a ceramic typology of the Iron Age[15]. Schofield, Jones and Van Riet Lowe were destined to play an important role in the early excavations on Mapungubwe in the 1930's.

After 1920, research concentrated on a migration model based on the distribution data of items of material culture and relevant dating[16]. Little was known about the Iron Age at that time, although the research by D. Randall-MacIver[17] at the beginning of the 20th century, and by G. Caton-Thompson[18] on the Zimbabwe Iron Age ruins, focused attention on these aspects of the later prehistory of southern Africa.

During the 1930's and 1940's, much archaeological research concentrated on artefact typologies, the stratigraphic context of stone wall ruins, the relationship between ruin sites and the ancestry of indigenous communities, the chronologies or sequences of material culture assemblages and the concept of migrations. This trend also set the scene for the focus of excavations on the Greefswald sites, K2 and Mapungubwe, as well as for studies on the archaeological materials up to 1940 and the eventual publication of this research.

Later research, problems and results

During the 1950's, a different approach to the Greefswald project developed. More detailed field work on Greefswald was initiated by the Department of Anthropology of the University of Pretoria, the stratigraphic characteristics and complexity of the Greefswald sites were realized more clearly and the Iron Age of southern Africa became better known. Stratigraphic records and the study of complete or at least representative collections of materials became much more important and the cultural remains were interpreted in terms of Iron Age cultures rather than in terms of chronologies of ethnic identities. The earlier excavation results offered little scope for continued research and expensive new excavations were consequently required under difficult economic conditions. Consequently, the field work initiated on the Southern Terrace at Mapungubwe in 1953 and 1954 was only continued from 1968 when Archaeology became an established science at the University of Pretoria and the infrastructure for archaeological research had improved sufficiently to provide the necessary research opportunities. Due to the limited nature of the excavations carried out between 1950 and 1970, not many useful research results were obtained during Phase Two of the Greefswald project. Full-time research was therefore planned for a next phase, or Phase Three, from 1970 onwards.

Phase Three was initiated in 1970 and was originally intended to last till 1973. It resulted in a comprehensive report on the stratigraphy, chronology and some material culture characteristics represented in the Greefswald sites. However, little evidence was obtained on graves and the human skeletal material or the settlement patterns, which led to continued small scale supplementary excavations on Mapungubwe and K2, till 1983. Since results of the archaeological research had to be submitted in a postponed final report to the Human Sciences Research Council before 1980, the Eloff report of five volumes was submitted in 1979[19]. The field work from 1980 to 1983 was summarised in intermediate reports[20], but no conclusive

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additional evidence on settlement patterns, physical anthropological data or other aspects was obtained. A further delay of the completion of Phase Three of the Greefswald project was caused by unsafe conditions during the military conflict in the area north of the Limpopo River at the time (1986 to 1989), the need to restore the sites between 1989 and 1992, and supplementary site mapping, as well as stratigraphic and other studies from 1992 to 1995 for publication purposes.

2.2 The discovery of the Greefswald sites and the start of the Greefswald Archaeological Project

Rumours of gold buried on Mapungubwe Hill aroused the interest of the community in the Northern Transvaal. In a letter to Professor Fouché, J.C.O. van Graan mentioned the search for Mapungubwe over a period of several years before the eventual discovery of the place[21]. A local farmer and prospector, E.S.J. van Graan, was guided to Mapungubwe on 31 December 1932 by the son of a spokesman known as Mowena. Van Graan was accompanied by his son, J.C.O. van Graan, and three other men. On Mapungubwe Hill (cf. Figure 2.1), they discovered stone walls (cf. Figure 2.5), gold artefacts, fragments of iron artefacts, potsherds and glass beads. On New Year's Day 1933, they uncovered more prehistoric remains, including a grave[22] which contained various grave goods (cf. Figure 2.2), *inter alia*, gold objects[23].

J.C.O. van Graan, who had previously been a student at the University of Pretoria, brought the discovery of Mapungubwe to the attention of the head of the Department of History at the University at that time, Professor Leo Fouché[24]. A description of the discovery of Mapungubwe and the gold objects was provided in a document written by J.C.O. van Graan[25]. The University considered the discovery to be of great importance[26] and acted immediately to secure the newly-found archaeological treasure and site for research and conservation purposes.

Professor Leo Fouché was authorized to act on behalf of the University of Pretoria in negotiations with the owner of Greefswald, E.E. Collins, for excavation rights for the University on Greefswald[27], and to recover legally the gold artefacts which had been discovered[28]. Professor Fouché and Mr Collins reached an agreement[29] whereby Professor Fouché, on behalf of the University, secured an option and contract for the excavation rights from Mr E.E. Collins[30]. The gold, which was then in the possession of M. Venter, D.J. du Plessis and H. van der Walt, who found it on Mapungubwe, was presented to the University of Pretoria[31], and the rights to the possession of the Mapungubwe treasure, as well as other related information, were transferred to the University[32]. Legal aspects of the possession of the Mapungubwe treasure and excavation rights were evaluated by Advocates J.M. Murray, A.A. Roberts and E.C. Niemeyer[33]. The University was also successful in its request for a postponement of any prospecting, mining and related activities[34] on Greefswald. Subsequent rumours that gold objects from Mapungubwe were being sold illegally at Messina[35] and the need to protect Mapungubwe against any illegal removal of artefacts led to temporary police protection for the site[36].

In accordance with the request of a deputation representing the University of Pretoria and the University of the Witwatersrand, the Parliament of the Union of South Africa accepted the Act for the Preservation of Ancient Monuments in 1934, and founded the Government Bureau of Archaeology[37] which was housed at the University of the Witwatersrand. C. van Riet Lowe, who was involved with the Mapungubwe project from its inception, was appointed as the director of the Bureau of Archaeology.

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The Prime Minister of the day, General J.B.M. Hertzog, regarded the site as one of national importance[38]. In June 1933, Greefswald was bought by the Government and excavation rights were granted to the University of Pretoria[39]. During the same year, the Archaeological Committee of the University of Pretoria was constituted by the Minister of the Department of the Interior, J. H. Hofmeyr. The Committee, in which the University of Pretoria, the Government and the public were represented, had to supervise future research on Greefswald[40].

Fouché had the gold objects weighed and analysed at the Royal Mint in Pretoria[41]. The quantity and quality of the first gold artefacts from Mapungubwe were described by R. Pearson from the Royal Mint in February 1933[42]. Mapungubwe was soon investigated by an expedition which included Professor Fouché, Professor D.E. Malan of the Department of Zoology of the University of Pretoria, a representative of the Government Geological Survey, a police officer and a solicitor. More gold and fragments of a human skeleton were found. The historical value of Mapungubwe and other archaeological sites in the region was recognized by both the University and the Government[43].

2.3 Research Phase One: Early excavations from 1933 to 1940

Excavations from 1933 to 1935

The first excavations on Greefswald were those on Mapungubwe Hill and on the Southern Terrace by Professors Fouché, Malan, Tromp and Van Riet Lowe[44] (cf. Figure 2.3).

The early excavations were aimed at determining the date of occupation of the sites, the nature of the inhabitants and their culture, and the cultural contacts they had with other contemporary communities[45]. Professor Fouché apparently also enquired about the availability of a suitably qualified or experienced archaeologist to investigate the Mapungubwe site and material[46]. At that time, few people in South Africa were sufficiently qualified to undertake the extensive research required at Mapungubwe[47]. The Archaeological Committee of the University of Pretoria was established to supervise the excavations on Greefswald. The Committee existed from 1933 to 1947[48]. The Committee appointed Reverend N. Jones to undertake fieldwork during 1934 and 1935. He was assisted by J.F. Schofield, who had valuable experience, and P.W. van Tonder, who had no previous knowledge of archaeological fieldwork. They were advised by C. van Riet Lowe, who also surveyed the site and excavated several test pits[49] (cf. Figure 2.8).

The excavations on Mapungubwe Hill during 1934 were Test Trenches JS 1, JS 4, JS 4(a), JS 5 and JS 6[50] (cf. Figure 2.4). The excavations on the Southern Terrace were Excavation JS 2(a) on an occupation area below the western ascent to the hilltop (cf. Figure 2.7), Trench JS 2(b) through the Southern Terrace (cf. Figure 2.6), and Test Trench JS 3 at the so-called Mahobe site[51]. The stone walls on Bambandyanalo and the site later known as K2 were discovered and investigated during 1934. During the course of the excavations, stone walls on Bambandyanalo were studied and test excavations were made on the settlement site then called Bambandyanalo[52]. It was later renamed K2 by Gardner[53]. Various other stone-walled sites in the region were also investigated and classified[54]. During the summer of 1934-1935, Van Tonder continued excavations, which included the grave area on Mapungubwe Hill[55], on his own.

A geological description of Mapungubwe Hill and its environment was provided by D.J. Krige of the Geological Survey, Pretoria[56]. In 1934, important objects from Mapungubwe were photographed[57].

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The household artefacts and materials studied by specialists included gold and other metallurgical objects[58], pottery[59], beads[60], vegetable material[61] and human skeletal remains[62]. G.P. Lestrade was responsible for ethnological investigations[63]. Aerial photographs of Mapungubwe were provided by the Air Force[64] during 1933. Aerial photographs were also taken by G.D.B. Williams of the Johannesburg Light Plane Club[65]. A report on all the research completed from 1933 to 1935 was published in 1937[66].

Early anthropological evidence on Mapungubwe

According to oral tradition, transmitted to L.C. Thompson by various spokespeople, a clan known as the Bahahole, men of the Rhinoceros, lived west of the present day Messina and used Mapungubwe, or M'pugobwe, as their headquarters. According to them, their descendants were practically wiped out by the Matabele[67]. Jones and Schofield concluded that Mapungubwe was first inhabited by a primarily Shona clan, whose culture was related to that of the inhabitants of the Zimbabwe complex, followed by a Sotho community moving in from the west[68]. This view was opposed by Galloway, who classified the human skeletal material as a homogeneous Bush-Boskop physical type[69]. Fouché eventually proposed that interdisciplinary ethnological and archaeological research on the cultures and mines of the ethnic communities should be continued[70]. Spokespeople also told legends of Arabs or Mapalakata who came into the Lowveld[71]. The ethnological investigations by Lestrade with regard to Greefswald were not continued, and the settlement history of the Greefswald environment during the eighteenth and nineteenth centuries remains unknown.

Other related archaeological sites

Information on other sites became available. These were mentioned by Fouché[72] and investigated by Roberts[73], Jones[74] and Schofield[75]. A 'lost city' in the Kalahari was, for example, described to J.C.O. van Graan by a bushman[76].

When Jones and Schofield left Greefswald, G.A. Gardner was appointed by the Archaeological Committee of the University of Pretoria to continue the excavations on Greefswald from 1935[77] onwards. He continued until 1940, when the fieldwork was halted due to the Second World War. Gardner excavated on both K2 and Mapungubwe Hill during six seasons, assisted by Van Tonder.

During 1935, Gardner and Van Tonder excavated two test trenches in the deposits of the midden known as K1 and came to the conclusion that K1 is a mound of midden debris which had been washed down from the parent site K2 by heavy rain[78].

The purpose of the excavations on K2 was to find settlement deposits containing cultural material and human skeletons. To achieve this aim, Gardner excavated 13 trial pits around the suspected perimeter of the site and two test trenches through the midden deposits in the centre of the site during 1935.

Large scale excavations from 1935 to 1940

The next phase of Gardner's excavations on K2 was an extended excavation within a large grid system on the south-western part of K2 from 1936 to 1940. The grid consisted of 5 blocks, subdivided into smaller sections. The deposits were stripped away in arbitrary levels of 12 inches (30 cm). Only deposits close to graves was sifted and several skeletons were removed from these graves on plaster of Paris[79].

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Gardner excavated 70 human graves on K2 and 2 other burial sites in the vicinity of K2[80]. He also found 6 so-called beast burials[81]. He interpreted the remains of solid floors and burnt huts found in his Test Pit no 12, in Test Trench no 2 and on the slope of Bambandyanalo as the remains of a late Nguni settlement on the eastern part of K2[82].

Gardner also found hearths made of stones, and 32 pits which he interpreted as cooking pits, pottery kilns and beast burial pits[83]. Layers of red and white gravel in the deposits[84] were regarded as deposits of weathered rock washed down from the surrounding hill slopes by torrential rain[85]. Two mounds of stone were interpreted as so-called Heitzi-Eibib cairns, said to have been used for purposes of worship[86].

The large collection of portable household objects found during excavation include mainly an abundance of remains of pottery vessels and imported glass beads, large home-made glass beads known as garden roller beads, fragments of garden roller bead moulds made of baked clay; pottery figurines of humans, domesticated animals and other pottery objects; metal slag; weapons, tools and ornaments made of iron; copper ornaments; rubbing and hammer stones; ivory bangles; awls, needles and points made of bone; ostrich egg shell beads; shells; animal bone fragments and burnt millet[87].

The human skeletal material from K2 was analysed by A. Galloway and he identified them as the remains of a homogenous Bush-Boskop population similar to the post-Boskop inhabitants of the southern coastal caves[88]. This view was supported by Gardner, who concluded that the inhabitants of K2 were a proto-Hottentot community[89]. Gardner believed that these people were herders of cattle and probably sheep. They relied exclusively on a diet of milk and meat[90], lived in flimsy shelters on the site[91] and used stone hearths for cooking purposes. Gardner interpreted their animal burials and the stone mounds as possible evidence of Hottentot worship dedicated to the mythical hero Heitzi-Eibib[92]. He was convinced that they did not use or produce iron and therefore did not belong to the Iron Age[93]. Radiocarbon tests in 1959 on charcoal associated with one of the animal burials proved the age of the K2 settlement to be 900 years plus or minus 65 BP[94].

According to Gardner, a group of Nguni People arrived at K2 from the north, destroyed the proto-Hottentot community living on the K2 site, and then settled on the slope of Bambandyanalo on the eastern perimeter of what is now the K2 site area. In Gardner's opinion, the Nguni community on K2 absorbed some of the Hottentot survivors of K2, lived in huts, made spear and hoe blades of iron, practised agriculture and eventually settled on Mapungubwe Hill[95].

During the course of excavations on K2 during 1935, Gardner was instructed to continue excavations on the summit of Mapungubwe Hill to attempt to find more graves and gold artefacts[96]. In 1935, Gardner initially concentrated these excavations on the badly disturbed grave area, and he continued his excavations in 1937 and in 1939 to 1940. He found three more graves with pottery and glass beads, but no gold funerary objects[97]. He also discovered pieces of metal ore and slag, iron, artefacts such as pottery, arrow heads, the bone linkshafts of arrows, pottery spindle whorls, stone structures which he interpreted as granary foundations, lumps of burnt millet, mortar or grinding holes and grooves in bedrock, and hut remains[98].

Gardner identified the skeletons as Bush-Boskop with Negroid characteristics and concluded that at least two cultures and possibly four cultures were chronologically represented in the stratified deposits on the Hill[99]. The two radiocarbon dates for Mapungubwe Hill which Gardner received in 1959 were 570 years plus or minus 60 BP and 530 years plus or minus 50 BP respectively[100].

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Both the radiocarbon dates and his interpretation of the human skeletal and cultural remains on K2 and Mapungubwe led Gardner to reconstruct a chronology of seven phases of settlement on Greefswald. He postulated an early settlement of proto-Hottentots up to 1000 AD on K2, followed by a mixed proto-Hottentot and then by a Black community on K2 between 1100 and 1250 AD. The latter moved to Mapungubwe Hill between 1250 and 1300 AD, after which it was replaced by a Sotho community on the Hill between 1300 and 1450 AD The Sotho community was followed by a group of Venda who overran Mapungubwe and settled on the Hill between 1450 and 1750 AD, only to be replaced in turn by a Hottentot clan between 1750 and 1800 AD. After 1800, Mapungubwe was permanently deserted[101].

Gardner was called up for military service in July 1940, due to the exigencies of the Second World War. Van Tonder continued excavations until the termination of the field investigations during September 1940[102]. The excavation report was, however, only published in 1963[103].

Problems and results of the early excavations

The archaeological investigations on Greefswald from 1933 to 1940 may be briefly described as rapid, large scale excavations resulting in the recovery of valuable artefacts such as gold objects, and the discovery of many graves, the identification of racial and other physical characteristics of the human skeletons, the description of prominent site features such as stone walls and some hut remains, as well as the reconstruction of a broad cultural chronology and of the ethnic relationships of the material remains left by the various groups of inhabitants of the Greefswald sites.

Problems which seriously hampered the research were the lack of professional archaeologists in South Africa, the lack of full-time supervision of the excavations by efficient, trained staff, the fact that adequate scientific methods for Iron Age research had not yet been developed and that the Iron Age in South Africa was virtually unknown to archaeologists. Consequently, many of the deposits on the sites were removed without the meticulous excavation and recording required of the stratification of both site features and cultural materials, especially with regard to Mapungubwe Hill. These problems inevitably resulted in a loss of irreplacable deposits and eventually also of excavated materials. Consequently, there is a lack of scientific data for research done in Phase One.

The excavation techniques and stratigraphic records were criticized by several archaeologists. Caton-Thompson stressed the importance of more complete and more detailed descriptions of graves[104]. According to Fagan[105], Inskeep[106] and Summers[107], new and improved excavations on the sites were needed. Fagan was of the opinion that an extended excavation on the Southern Terrace should result in the collection of necessary evidence[108].

Many of the conclusions of the earlier researchers, and especially those of Gardner and Galloway, have since been rejected. The preservation of the human skeletons was considered to have been poor, and the research on the skeletal material is considered inadequate and unacceptable[109]. The importance of a thorough study of the pottery within an accurate stratigraphic context was stressed[110]. During the 1960's, records and interpretations of the settlement history of the central Limpopo Valley and the area further north had become available[111]. Such records and interpretations were not known to Gardner. Had he had access to them, they could have provided him with a more convincing explanation of the cultural sequence in the Greefswald area. According to these records, a population identified as proto-Vakaranga left the shores of Lake Tanganyika about 850 AD, gradually moving southwards to the valley of the Vembe or Limpopo and taking wives from local pastoral clans, replacing local pottery with a different pottery style, characterized by curving necks. They were eventually forced to retreat to the northeast by advancing militant Sotho or Tswana clans from the arid area to the north during the period from 1250 to 1440[112].

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It became evident that research of a high standard on the Greefswald sites and materials, and the protection of these archaeological sites, was imperative. Consequently, legislation was passed during 1938 and 1945 to control excavations on these sites[113]. However, during the decade following the end of the early investigations on Greefswald in 1940, no excavations were carried out, in the aftermath of the Second World War.

At this time, Jan Smuts was in favour of a wildlife sanctuary adjacent to the Limpopo River. Consequently, the Dongola Wildlife Sanctuary was established in 1947, but it was deproclaimed soon afterwards by the new Nationalist Government[114]. This more or less coincided with the dissolution of the original Archaeological Committee of the University of Pretoria in 1947[115].

2.4 Research Phase Two: Small scale excavations from 1950 to 1970

Developments from 1950 to 1952

In 1950, Van Riet Lowe, in his capacity as the Director of the Archaeological Survey, recommended the termination of the excavations on the Greefswald sites[116]. The University of Pretoria, on the other hand, was strongly in favour of continued research, to be done, this time, by staff members of the University[117]. In 1950, Professor P.J. Coertze was appointed as head of the Department of Anthropology of the University of Pretoria[118]. The Greefswald Archaeological Project was then continued by the Department of Anthropology. Soon after his appointment as head of the department, P.J. Coertze visited Greefswald, accompanied by J.F. Eloff, who eventually became head of Archaeology at the University. They concluded that detailed archaeological research should be continued on the main sites at Greefswald. Consequently, limited excavations were done on the Southern Terrace during 1953 and 1954[119], and from 1968 to 1970. Permission to continue archaeological research on Greefswald was requested by a committee of the University of Pretoria[120], supported by the Inspector of Land Affairs at Louis Trichardt[121] and was granted to the University by the Minister of Land Affairs in 1951[122]. The University had to consult with the director of Archaeological Survey and obtain written permission from the Historical Monuments Commission to continue the excavations[123]. The excavations had to be supervised and carried out by a competent individual[124].

Excavations from 1953 to 1954

During 1953 and 1954, a new phase of excavations was initiated on Greefswald[125]. These excavations under the direction of P.J. Coertze and H.F. Sentker concentrated on the Southern Terrace and were intended to provide an accurate and complete description of the site deposits. They were to include the painstaking recovery of all artefacts and other materials within the exact stratified context. To achieve this, a new excavation grid was used on the most important part of the Southern Terrace. The deposits were carefully stripped away in arbitrary levels of 6 inches (15 cm). Systematic detailed stratigraphic records were kept, all the deposit material was sifted and the archaeological material was carefully recovered. The upper layers in Squares A2, A3, B2, B3, C3, D3 and F4 were excavated.

Logistic support for the field expedition was provided by the South African Defence Force[126].

The most prominent achievement of these limited, systematic excavations was the emphasis on a complete detailed stratigraphic study of the settlement deposits. A wealth of information was gleaned, proving the existence of numerous, clearly stratified site features which provided

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valuable detailed evidence of the settlement and site characteristics and chronology. In addition, a complete collection of cultural material was recovered *in situ* and in the fine-meshed sieves.

According to Eloff, the excavations were then discontinued to enable the research team to prepare a report on the fieldwork of 1953 to 1954[127] and to complete the publication of the report on the excavations done by Gardner during 1935 to 1940[128].

Consequently, only the top levels of the relevant deposit were removed and the lower levels remained unknown. The report on the 1953/54 excavations only included a stratigraphic description of the excavated levels and a description of some of the artefacts. Partly due to a lack of trained and experienced staff, further excavations had to be postponed until 1968 to 1971, when one of the squares of the excavation grid on the Southern Terrace, E2, was fully excavated.

In the wake of the depression of the 1930's and the Second World War, the 1940's and 1950's yielded few significant developments in archaeology in South Africa, largely because of poor economic conditions. The death of the prominent archaeologist Van Riet Lowe in 1956 and the limited availability of trained professional archaeologists[129] compounded the problem. As a result, fieldwork on the remote Greefswald sites in the central Limpopo Valley could only be resumed during the late 1960's.

Developments during the 1950's and 1960's

Improved archaeological methodology, an increased general awareness of the value of professional archaeology and funding for archaeological research after 1960 created favourable conditions for Iron Age research, including the Greefswald project. Conditions for archaeological fieldwork improved during the 1960's as a result of the efforts of R.R. Inskeep, who arrived from Cambridge to fill the position of the late A.J.H. Goodwin at the University of Cape Town in 1960, and the subsequent appointment of professional archaeologists at museums and universities, reflecting the improving economic conditions at museums and universities[130]. Professional standards in archaeological research and Iron Age archaeology were raised significantly by R.R. Inskeep and R. Mason. Inskeep, in his capacity as head of the Department of Anthropology at the University of Cape Town, initiated major Iron Age research projects, setting new standards for the training of students[131]. Mason developed the main South African centre for Iron Age research at the University of the Witwatersrand and continued his own Iron Age research with extensive excavations on Iron Age settlements in the Transvaal[132]. The recording of Iron Age sites was extended tremendously by using aerial photographs, particularly by R. Mason and T. Maggs[133], followed by excavations and the classification of such sites.

It was partially against this background, and due to the efforts of J.F. Eloff, that Archaeology was accepted as a scientific discipline in the Department of Anthropology at the University of Pretoria. Eloff, who had visited Mapungubwe with his father during the excavations of the 1930's, later returned to Mapungubwe during the excavations of 1953 and 1954 as a student member of the excavation team. Eventually, he was appointed as a lecturer in the Department of Anthropology at the University of Pretoria, and established Archaeology as a subject in the Anthropology course at the University of Pretoria in 1961. He became professor and head of Archaeology at the University of Pretoria during 1970[134]. These developments all stemmed from the discovery of Mapungubwe in the 1930's[135], including the eventual establishment of the Department of Archaeology at the University in 1969[136]. During 1968, the South African Government handed Greefswald over to the South African Defence Force on condition that all responsibility for archaeological research remained with the University of Pretoria, in

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co-operation with the Defence Force[137]. The Defence Force granted the University access to the archaeological sites, and undertook to erect fences around sites which were out of bounds to military personnel[138].

Excavations from 1968 to 1970

The development of Archaeology as a subject at the University of Pretoria enabled the University to continue limited, systematic excavations under the supervision of J.F. Eloff on the Greefswald sites during University recesses from 1968 to 1983. The purpose of these excavations was to continue the work which had been started by P.J. Coertze and H.F. Sentker on the Southern Terrace in 1953 and 1954, to obtain additional stratigraphic information and to provide field training to students[139]. In 1968, Eloff exavated a test pit on K2 in the collapsed wall of Gardner's excavation (cf. Figure 3.2), and from 1968 to 1970, he excavated Square E2 adjacent to the limited excavations of 1953 and 1954 in the excavation grid of 1953 (cf. Figure 3.53).

2.5 Research Phase Three: Excavations from 1970 to 1995

Project evaluation and prospects during 1970: Background

As a result of the systematic, detailed excavations on the Southern Terrace from 1953 to 1954 and from 1968 to 1970, it became obvious that on the Southern Terrace at least there was a wealth of archaeological site deposits, material, and information available for research and a reconstruction of the Iron Age past of the area. A surface reconnaissance of the main sites confirmed the need for continued research.

There were primarily two research options on the Greefswald sites. First, much of the research of the 1930's still had to be confirmed or corrected and it definitely had to be supplemented with detailed field recording, directing the line of research towards a descriptive and data synthesis method, the establishment of stratigraphic and cultural sequences, an understanding of site characteristics and a physical anthropological study of human skeletal remains. As the second option, the current trends in the 'new' archaeology of the 1970's could be followed, concentrating on more interpretative research efforts regarding the explanation of the observed phenomena in terms of systems theory, relationships between community behaviour and the presumed eco-environment of the time or the development of social structures. The first research option was selected to be the most appropriate direction, after which other research problems could be considered.

In 1970, it was decided that, as a first priority, the University of Pretoria's Department of Archaeology had to establish a firm data base, by testing, correcting, and supplementing the earlier research on the one hand, and concentrating on a reconstruction of the general way of life of the site inhabitants on the other hand. The focus of the project was the collection of relevant cultural material, the observation of stratified phenomena and detailed field recording techniques. The scope of the project was a three year full-time research phase, employing a field archaeologist, A. Meyer, from 1971 to 1973. He was also responsible for subsequent part-time additional field work to clarify selected issues. After that, the Greefswald project was to be evaluated and a new research framework formulated. The research resulted in the Eloff Report of 1979, and several progress reports on limited site research. In the end, research continued until 1984.

In a general background statement for the research programme from 1971 to 1973, site components such as kraal deposits of domesticated animals, hut complexes, stone walls and other

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remains of everyday life in the exceptionally well-stratified deposits of the large sites were identified as well-suited for continued archaeological research[140]. Consequently, the research programme aimed at the optimum utilization of the stratigraphic potential of these sites. In contrast to the excavations of the 1930's, the new excavations were aimed at an accurate and detailed stratigraphic investigation of specific deposits as well as at the maximum qualitative collection and interpretation of archaeological materials and evidence[141]. The excavations were carefully planned by a new generation of field workers (cf. Figure 2.9). Interdisciplinary research by experts on various features and materials was to be focused on site structures such as huts and stone walls, the physical remains of plants, animals and humans, as well as various artefacts. All the material was to be studied within the detailed framework of the site stratification[142] (cf. Figures 2.10 and 2.11).

The goals of the research programme of the 1970's were based on the need for an evaluation of earlier research results, and the need for the comprehensive scientific collection of factual evidence and reconstructions of the cultural characteristics, cultural chronology, and, to some extent, the interrelationships and wider contexts of the cultures represented on the Greefswald sites. The specific goals of the research programme were to determine the cultural characteristics of the communities, the age and chronologies of the cultures, their interrelationships and wider cultural contexts, and the physical affinities of the site inhabitants[143].

The identification of the Greefswald sites was to be achieved by using archaeological excavations and classification techniques to define the cultures in terms of specific lifestyles on the one hand, and by comparing these lifestyles with similar, related material cultural traditions, including pottery style, on the other hand[144]. During the 1930's, researchers tended to identify the cultural remains on Greefswald in terms of their assumed ethnic relationships. In line with this trend, Fouché identified the Mapungubwe remains as those of an 'ancient Bantu civilization on the Limpopo'[145]. Gardner associated the Greefswald sites with a succession of Hottentot, Nguni, Sotho, Venda, and once again Hottentot communities[146]. According to Schofield, the K2 pottery belonged to a branch of the Sotho-speaking population, and the Mapungubwe pottery to Shona-speaking people[147]. None of these conclusions, however, was supported by sufficient factual evidence[148]. Although linguistic evidence may be successfully combined with archaeological research in certain cases of research, interdisciplinary linguistic-archaeological research in the case of the Greefswald Archaeological Project was considered to be difficult, if not impossible, at the time. The project phase of the 1970's was viewed as a basic excavation programme aimed at the painstaking acquisition of stratigraphic and cultural materials and information needed to reconstruct basic site and cultural characteristics and chronologies. During this phase of research, attention would be given to site components and materials, but no ethnographic and linguistic research could be included within the scope of the excavation project. Ethno-archaeological and ethno-linguistic related research would logically be part of a later phase of research which would possibly be concentrated on the reconstruction of settlement patterns and settlement history, ethnographic analogy, oral traditions and cultural ecological problems.

The identification of the K2 people as pure Bush-Boskop stock by Galloway[149] apparently prompted Gardner to interpret the original cultural remains on the site K2 as proto-Hottentot[150]. Several skeletons from Mapungubwe Hill were identified by Galloway as Bush-Boskop with a slight negroid admixture[151]. Contradictory results were later obtained when Rightmire[152] used a multi-discriminate method of analysis of the human skeletal material, which led to the conviction that the inhabitants of the Greefswald sites belonged to the negroid physical type. The skeletal material on which these investigations focused was in a poor state of preservation and had been removed from poorly recorded stratified contexts during controversial excavations. One of the goals of the excavation programme of the 1970's

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was to locate and carefully excavate more graves, which could provide further suitable material for analysis. A particular physical type need not necessarily be associated with a particular culture or industry[153].

Various researchers' divergent interpretations of the identities of the materials from the site deposits highlighted typological problems and the range of approaches to the analysis of artefacts, especially pottery[154]. Following the initial ethnic orientation of interpretations of the pottery by Schofield[155] and Gardner[156], later archaeologists such as R. Summers and T.N. Huffman have preferred to stress artefact typology, especially related to pottery. Referring to Gardner's report on the Greefswald sites[157], Summers identified the K2 site as the Mambo Hill phase of the Leopard's Kopje industrial complex[158]. Huffman described the K2 remains as the southern Bambandyanalo facies of Phase A of the Leopard's Kopje Iron Age complex.

According to K.R. Robinson, the so-called M1 Pottery from Mapungubwe Hill appeared to be similar, to some extent, to the Class 3 pottery of Zimbabwe, although the Mapungubwe pottery was regarded as more closely related to the Woolandale phase of the Leopard's Kopje complex, which Summers identified as Leopard's Kopje Phase 3[159]. Huffman interpreted this particular phase of the Iron Age complex as Phase B, which consisted of a northern or Woolandale facies and a southern or Mapungubwe facies[160].

As a direct consequence of the excavation techniques of the 1930's, no comparable pottery or other artefact collections from the Greefswald sites were available for either qualitative or quantitative typological studies prior to the excavations of the 1970's. One specific objective of the excavations from 1971 to 1973 was to obtain a full type series of pottery and other materials within exact stratified contexts on the main Greefswald sites. These could then be used to reconstruct the cultural identity and chronology of the settlement remains on the Greefswald sites on the one hand, and to enable researchers to determine the relationship of the Greefswald sites with the broad Iron Age complexes in the region on the other hand[161].

In addition to the study of chronology in terms of stratigraphy, radiocarbon dating and pottery sequence, the description of the various materials on the Greefswald sites was intended to relate the contents of the sites to lifestyle, and to the physical attributes of the inhabitants.

During the 1970's, the need for objective studies on artefacts to develop technology-based culture-stratigraphic frameworks led to researchers' quantifying similarities and differences between artefact assemblages[162]. With reference to the Iron Age, the study of pottery remained important, for a variety of reasons. Typological groupings in space and time as well as the taxonomic construction of traditions required detailed analysis of pottery traits[163] to develop frameworks for the existence of Iron Age cultures in the landscape and over time. With regard to the Greefswald pottery, a typological classification related to a detailed stratigraphic analysis was designed to test the earlier ceramic studies of Schofield and Gardner and to provide a typological chronology together with the stratigraphic data and sequence of radiocarbon dates[164]. The new research refuted the chronology postulated by Gardner for the Greefswald sites and supported some of Schofield's conclusions on the pottery sequence on Mapungubwe Hill.

When the planning for the series of excavations from 1971 to 1973 was started during 1970, the outstanding potential of these sites with regard to extensive stratified deposits and cultural material was considered to be of prime importance for the research[165]. There was an obvious need for detailed stratigraphic recording of site features such as hut or dwelling types, structures built with stones, skeletal remains of animals and humans, ceramics, glass and other beads, and the collection of material samples for identification purposes.

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During 1970, standard aerial photographs of the Northern Transvaal were studied in the office of the Surveyor-General[166]. A number of stone-walled sites were observed in various districts, but known stone wall features and other remains of Iron Age sites in the Greefswald environment could not be identified on these photographs. Known stone walls such as those on Bambandyanalo were unobtrusive amongst the natural bush and rock formations. Consequently a reconnaissance survey of the Greefswald area was postponed.

The excavations from 1971 to 1973

Research goals and methods

The painstaking excavations and stratigraphic recording proved to be excellent experience and training opportunities for archaeology students[167], who contributed significantly to the excavation programme from 1968 onwards. The research goals for the 1971 to 1973 excavation programme were based on the following considerations:

1 The need for thoroughly recorded factual evidence on the cultural heritage of Greefswald, aimed at a reconstruction of the chronology, characteristics and relationships of the Greefswald cultures.

2 The necessity to test the data and interpretations of the archaeologists who had previously worked on Greefswald.

The research goals may be summarized as follows[168]:

1 Cultural identification

The identification of the cultures according to typical cultural traits such as technology and subsistence patterns, particularly the details of pottery typology, to support a reconstruction of cultural chronology. In particular, the chronology and sequence of so-called 'Hottentot' and 'Bantu' groups postulated by Gardner needed to be clarified[169].

2 Reconstructing the economy, technology and aspects of settlement

For some time before 1970 it was already obvious that the communities on K2 and Mapungubwe were subsistence farmers, typical of the southern African Iron Age. Sufficient evidence was therefore required to clarify the contradictory conclusions of Gardner and later authors about the ways of life of the people who lived on the sites now known as K2 and Mapungubwe, and to supplement the existing data with additional evidence[170].

3 The physical features and relationship of the K2 and Mapungubwe people

Clarification of the situation would be sought, as far as possible, by the recovery of new skeletal material. The inclination of early excavators to associate the cultural remains from the Greefswald sites with historically known ethnic groups was reflected in their study of the human skeletal remains. The earlier identification of the human skeletons from the Greefswald sites as 'proto-Hottentot'[171] was contradicted by Rightmire[172], who described these skeletons as negroid[173].

4 Description of stratification, site features, artefacts and ecofacts

The stratigraphic research concentrated on detailed recording of site stratification, stratigraphic sequence, and site features such as built structures of wood, clay, gravel, stone or any other material including those features which were removed during excavation[174].

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Metal objects

Although metallurgical research was not to form part of the project, close attention was to be paid to any evidence of metals or metallurgical processes, particularly given Gardner's claims that the K2 people possessed no significant metal production technique or metal artefacts[175].

Beads

Large numbers of beads made of glass, ostrich eggshell, bone, metal and pottery were found in earlier excavations. A careful stratigraphic study of the context of the beads and an analysis of the chemical composition of the glass beads were to be included as research goals.

Artefacts of bone and ivory

Artefacts made of bone and ivory were reported by previous archaeologists and details of the stratigraphic and cultural context of any such artefacts were to be carefully recorded.

Stone artefacts

Stone artefacts previously observed on the Greefswald sites varied from mortar stones, rubbing and hammer stones and Stone Age flake artefacts within stratified context. A careful record of their occurrence was to be made.

Ceramic typology and sequence

While the gold artefacts from Mapungubwe fired the imagination, the ceramic artefacts also attracted much interest. The large quantities of vessel sherds, a number of complete vessels and a variety of figurines and several unique objects selected from the early excavations were described by Schofield[176] and Gardner[177], but these artefacts had not yet been qualitatively and quantitatively studied in a systematic typological classification within a fully stratified context. One aim of the excavations from 1971 to 1973 was to obtain a representative sequence of pottery from the stratified deposits in selected areas on the sites to test the conclusions of Schofield and Gardner, and to reconstruct the cultural sequence of the sites and the pottery type series.

Animal remains, animal husbandry, hunting and snaring

Little was known about the faunal remains, although the identification of domesticated stock[178] provided evidence of animal husbandry on the Greefswald sites. A representative collection of animal skeletal remains would be sought for a systematic analysis to determine patterns of animal husbandry, hunting and snaring as well as domesticated and wild species of fauna.

Plant remains, agriculture and collecting

With the exception of descriptions of some charred wild and domesticated seeds found on the Southern Terrace and K2 by Fouché[179] and Gardner[180], little systematic research was undertaken on plant remains. An important goal of the 1971 to 1973 excavation programme was to collect and record the plant material within its stratified context and to obtain a detailed identification of the cultivated and wild species by a specialist on seed identification.

The age and chronology of the Greefswald sites

Apart from the three radiocarbon dates on material from the excavations during the 1930's, and a relative date for the fragments of Song celadon ware from Mapungubwe Hill, the age

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of the Greefswald sites and the sequence of settlement phases still had to be established. The accurate and thorough dating of the sites was to be an important goal of Phase Three of the Greefswald Archaeological Project.

Research results and problems

By this time, the influence of scientific approaches and methods on Archaeology created differences between empirically and historically orientated researchers, versus researchers following an approach based on deductive methods and anthropological and ecological theory. Divergent interpretations and evaluations of the Greefswald research resulted from these differences in approach.

Fieldwork and reporting: 1974 to 1984

After the completion of the excavation programme from 1971 to 1973, supplementary excavations on K2 and Mapungubwe concentrated on the search for more substantial evidence on household structures and stratigraphic evidence with regard to graves. Excavations Ts 2 and Ts 4 on K2 were extended and Excavation MST 1 (Square A2) at the so-called Mahobe site on the Southern Terrace was completed. After the final excavation report[181] to the Human Sciences Research Council and National Monuments Council had been submitted in 1979, supplementary excavations were continued in the upper layers in the deposits in Squares J 9, J 10, I 9, I 10 and I 11 on the Southern Terrace and a brief investigation was made of the remaining deposits on Mapungubwe Hill[182]. During 1983 and 1984, Eloff temporarily concentrated field work at the pioneer settlement of Schoemansdal at the request of the Transvaal Provincial Administration. He retired in November 1984.

General developments in Archaeology during the 1970's

Iron Age archaeology in South Africa expanded significantly during the 1970's. The expansion involved major fieldwork projects in Natal, the Transvaal and the Eastern Cape, resulting in the establishment of a chronology of Iron Age settlements starting from the first millenium AD. Mapungubwe and K2 were then placed two centuries earlier than Zimbabwe[183]. The discovery of human skeletons in graves on Iron Age sites, such as those from the Limpopo Valley, which were found to be contemporary to the skeletons from K2 and Mapungubwe[184], ensured continued interest in the physical characteristics of the Iron Age people.

In 1970, B.M. Fagan presented a review of the Greefswald project, the main sites K2 and Mapungubwe, the material culture and skeletal remains of the site inhabitants, the Iron Age chronology of the sites, and the value of K2 and Mapungubwe for African history[185].

In 1977, D.W. Phillipson published an overview and synthesis of the later prehistory of eastern and southern Africa in which he briefly referred to K2 and Mapungubwe and the age, skeletons, artefacts, dwellings and evidence of social stratification on these sites[186].

These authors had to rely on the published reports by Fouché and Gardner on the Greefswald sites. The need for archaeological evidence on these sites was stressed. This need was partially fulfilled by the field report to the Human Sciences Research Council in 1979[187] and an intermediate report in 1981[188]. Archaeologists attempted to relate the Greefswald sites to historically known population groups in broad terms, but since the ethnographic survey of Lestrade in 1934, no specific ethnographic research had been undertaken. The value of ethnographic research was stressed[189] and the histories of some population groups in the Northern Transvaal were reconstructed, for example, the history of the Lemba clans who were craftsmen and traders of Semitic origin[190], but little or no effort was made to relate these

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people to Iron Age sites or communities. Archaeologists still had to rely on the interpretation of material cultural assemblages such as ethnic, tribal and language groupings and the historical movements of people. According to I. Hodder, these correlations are not as simple as they seem and they are not always accurate[191].

General developments in Archaeology during the 1980's

The final report on the Greefswald excavations from 1971 was completed in 1979[192]. At that time, four post-graduate students of the University of Pretoria were involved in the research on Greefswald and neighbouring farms. E.A. Voigt, who was an archaeo-zoologist at the Transvaal Museum, was responsible for the archaeo-zoological research on K2 and Mapungubwe. E.O.M. Hanisch, then an archaeologist at the National Cultural Historical Museum in Pretoria, searched the neighbouring area for archaeological sites and finally excavated a prominent Zhizo Iron Age site on the farm Schroda to the east of Mapungubwe[193]. J.F. van Ewyk, also an archaeologist at the National Cultural History Museum at a later stage, excavated a Mapungubwe related site on the farm Skutwater to the east of Mapungubwe[194]. It was decided to continue the Greefswald project in the 1980's to obtain further information on the settlement pattern of the inhabitants of the Greefswald Iron Age sites. The last phase of settlement on Mapungubwe Hill and the Southern Terrace attracted particular interest. No substantial building structures had as yet been found to provide convincing evidence on the settlement activities or the settlement pattern of the last inhabitants of Mapungubwe, nor had clear indications been found of the conditions which led to the abandonment of the Greefswald sites. Consequently, the upper layers were excavated in the squares of the 1953 grid adjacent to Square K8[195]. No new evidence was found to solve the problem. This extended excavation programme was temporarily suspended after the retirement of Eloff as head of the Department of Archaeology in 1984. The technological and other aspects of the gold artefacts of Mapungubwe were studied by A. Oddy of the British Museum in 1983[196] as a joint venture by the University of Pretoria, the Transvaal Museum and Intergold, and the results were published[197].

Some of the gold objects and other artefacts from the Greefswald sites were also exhibited in the museum at Gold Reef City in Johannesburg, fifty years after the discovery. On this occasion, special credit for reporting the discovery of Mapunguwe to the University of Pretoria was given to J.C.O. van Graan, who attended the exhibition as a guest of honour. During an overview with a journalist, he recalled the discovery of Mapungubwe[198].

In 1984, the trade routes between the east coast of southern Africa and its hinterland were reconstructed by the historian J.B. de Vaal[199], including a route between Zimbabwe and the copper mines of Messina, as mentioned by G. Caton-Thompson[200]. This reconstruction and the records of Abraham[201] on the early history of the so-called proto-Vakaranga could not be archaeologically investigated at the time due to the political and military conditions in the region north of the Limpopo River during the 1980's. The need for co-operation between archaeologists and anthropologists to unravel the past was, however, stressed by J.F. Eloff[202] at the time. In an archaeological overview in 1989 of Iron Age settlement in southern Africa, the lack of information and the divergent theoretical approaches was mentioned, and the need for joint archaeological and anthropological research with regard to the settlement history of prehistoric farming communities was again emphasized[203].

During the three year period from 1985 to 1987, development concentrated on further post-graduate training of the remaining staff members in the Department of Archaeology of the University of Pretoria, on expanding the graduate training course from a two year to a three year BA course and on merging the departments of Archaeology and Anthropology into a single, large Department of Anthropology and Archaeology.

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This development of the department was also intended to improve support for the Greefswald Archaeological Project, but just at this time the research on Greefswald had to be postponed till 1988 as a result of increased military activity on the northern national border and the temporary involvement of the University of Pretoria with excavations at Schoemansdal. During 1988, the planned fieldwork was again postponed until the then urgent maintenance programme of the main sites K2 and Mapungubwe could be completed[204] (cf. Figure 2.12). The site maintenance programme continued till 1991.

The development of Iron Age culture concepts and a synthesis of data on pottery typology and the age and geographic location of Iron Age industries continued during the early 1980's. T.N. Huffman, who had previously included the Greefswald Iron Age cultures in the Leopard's Kopje Tradition, then included them in a tradition which he named the Kutama Tradition[205]. The Iron Age traditions, formulated according to interpretations of assemblages of classes of pottery and other materials in a chronology of age and geographic locations, were still broadly seen as various streams or migration movements of Iron Age cultures and peoples from the north and eastern Lowveld into coastal and inland regions of southern Africa. Ceramic traits and language were seen to be related, linking the spread of the Shona language with the Kutama Tradition[206].

The K2 pottery was also believed to reflect the beginning of the Late Iron Age. Mapungubwe was interpreted as the first phase of the Great Zimbabwe Culture Tradition. This first phase was followed by the Zimbabwe Phase and the Khami Phase[207].

Since the early 1980's, a critical approach towards some aspects of archaeological research had become prominent. In 1983, M. Hall and A. Morris stated that there was little firm and acceptable evidence for the physical identity of early farming communities in southern Africa[208]. Hall disputed the concepts of material cultures based on ceramic classifications and their relationships with ethnic groups, on the basis that such concepts are subjective[209]. He referred to the study of the archaeology of farming communites in southern Africa as a political activity, reflecting the influence of colonial ideology on the structuring of history[210]. In his reassessment of the Iron Age of southern Africa, he presented the Iron Age as characterised by farming societies which possessed their own technologies and economic systems which slowly spread into potential farming areas[211]. Hall interpreted Mapungubwe within its natural environment as the top settlement in a social hierarchy of settlements[212]. The topic of the dialectic nature of the political and ideological relationship between the government of the time, the public and archaeologists, became an argument which was focused on contemporary social and political issues[213].

During the 1980's, another emerging theoretical approach was the structuralist approach which was developed as cognitive archaeology by T.N. Huffman[214]. He succeeded Mason as head of the Department of Anthropology at the University of the Witwatersrand. Huffman concentrated his research on the cognitive explanation of the Zimbabwe culture, including Mapungubwe[215] and promoted interpretive views on the spatial organization of the settlements at Mapungubwe and Zimbabwe. Regarding the Zimbabwe remains as symbols in stone[216], Huffman postulated a settlement continuity from K2 to Mapungubwe and eventually Zimbabwe, which he believed reflected the development of class-based settlement hierarchies through a sequence of transformations[217].

While some trends in the mainstream archaeology shifted from descriptive studies such as Iron Age chronologies to explanatory models during the 1970's and 1980's, the University of Pretoria still had its own research problems with regard to the Greefswald sites. After 1973, the search for substantial hut structures on K2 was successful in Excavations Rn 2 and Ts 4. The search for similar structures in the top levels on Mapungubwe was continued in small

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excavations in the upper layers in Squares I 9, I 10, I 11, J 9 and J 10[218], adjacent and near Square K8 on the Southern Terrace. By then, it became evident that clues to a more complete picture of the final phase of settlement on Mapungubwe would require large scale excavations in the upper levels as well as an intensive survey of the surface features of Mapungubwe, K2 and the small nearby sites. Before funding for such an intensive research project would be available, however, the findings of the fieldwork since 1971 had to be published. Professional mapping of the main sites by a surveyor was required for the purposes of such a publication and preparations for future research. It was decided, at that stage, not to continue with an excavation programme over an extended area until the publications, mapping and a management strategy for the sites and collections could be completed. Consequently, the site maintenance programme was completed in phases during 1988 to 1990 at considerable expense[219].

The search for additional clues, mapping and management from 1985 to 1995

From 1991 to 1995, a surface survey and the mapping of the main sites, K2 and Mapungubwe, had to be completed in phases for the purposes of specialist publications and future research planning. This phase of the research also included small supplementary test excavations on K2 and nearby sites, and investigating remaining deposits of Mapungubwe Hill.

The purpose of the excavations on K2 was to record and recover additional human skeletons in graves within their exact site context, and to obtain further substantial data on the supposed cattle kraal deposits. The Department of Anatomy of the University participated in the excavations from 1993 onwards. A small test excavation, recorded as Tr D4, was done in 1993 as an extension of the older Test Trench Ts 2 in the midden deposits, but no new evidence came to light, except that a human skull was discovered buried in a Mapungubwe-type clay pot under an overhanging rock at the western entrance to the K2 valley. At the same time an extension of the earlier Test Trench Ts 5 was excavated, but the excavation did not result in new evidence. During 1995, the partial excavation of a test trench, Rn 3, resulted in a better understanding of the site context of the cattle kraal deposits. A second human skull and two unrelated human mandibles were discovered in Rn 3, this time in a midden deposit (cf. Figure 2.14). During a follow-up cleaning of the adjacent wall of Gardner's excavation, the frontal part of another human skull was recovered from the same deposit overlying the kraal deposit.

During 1994, an investigation of the remaining stratified deposits on Mapungubwe Hill adjacent to the grave area excavations of the 1930's, confirmed suspicions that stratified living floor features and household refuse must have existed in the grave area itself, before the removal of the deposits in 1935. It was decided to preserve and record this remaining deposit in a study area demarcated as Mk 4 as the remaining stratigraphic evidence of the Mapungubwe grave area. During 1996, a follow-up cleaning of an old test trench in Mk 4 revealed evidence of stratified deposits overlying a stone terrace wall in the centre of Mapungubwe Hill, strengthening the impression of later settlement activities in a post-stone wall settlement phase on Mapungubwe. At the same time, previously unrecorded circular stone structures of unknown purpose in the surface of the deposits on the eastern part of Mapungubwe and at the north-eastern foot of Mapungubwe were observed and noted with the intent to study these features as part of a future project phase.

During a reconnaissance survey around Mapungubwe, evidence was found of small settlements. During 1994 and 1995, on a natural terrace to the northeast of Mapungubwe Hill, what appeared to be midden and kraal deposits was investigated in a small site (Map 4) with Test Trench Ts 1 (cf. Figure 2.14). The deposits were dated to the same age as Mapungubwe Hill, indicating a possible herding village in the Mapungubwe complex. Probable kraal remains further to the east, demarcated as Site Map 10 and Site Map 12 and investigated with

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small test trenches, turned out to date from a later period. The context of small stone walls on a hill adjacent to Site Map 12 is still unknown.

Apart from the additional field work, research and management procedures also concentrated on previously excavated materials and the project archive. A joint project of the Department of Anthropology and the Department of Anatomy of the Medical Faculty at the University of Pretoria is concentrated on the human remains and their stratigraphic context. All the available skeletal material found on K2 and Mapungubwe was studied again by M. Steyn at the Department of Anatomy, for a doctoral thesis, under the supervision of Professor M. Henneberg, Head of the Department of Anatomy at the University of the Witwatersrand. This research focused on assessing the health status and physical characteristics of the Iron Age people from Greefswald[220]. Continued research by Steyn and Henneberg on the human remains from Mapungubwe and K2 included paleodemography[221], a human pot burial[222], disease[223] and skeletal growth[224].

Upon request, glass beads and metallurgical material have since been made available to the Department of Archaeology of the University of Cape Town and promising research results are expected. A data-recording and cross referencing system was developed[225] to structure and manage fieldwork, documents and collections, and is currently being tested. Since 1992, a core collection of 500 artefacts from Mapungubwe and K2 has been identified, photographed and listed as part of a collection management programme, and thousands of documents and photographs have been filed in the project archive. These management activities will be continued as soon as a new policy document for the Greefswald project is finalized.

Due to the increasing public popularity of the Greefswald sites and artefacts, the University of Pretoria often receives requests for photographs and information for publication or broadcasting purposes, as well as requests to see the artefacts at the University or requests for visits to Mapungubwe Hill. It is desirable to develop an academic and site museum for information, education and training purposes, but such developments can only be addressed once arrangements for future research and management programmes have been finalized.

Since 1992, several important events have initiated a new course in the management of the Greefswald sites and environment. The South African Defence Force, responsible for the active protection and management of Greefswald since 1969, handed Greefswald over to the Transvaal Provincial Administration in July 1992 to be managed as part of the Vhembe Nature Reserve[226]. With the change in government after the national elections in 1994 and the establishment of new provinces, management of Greefswald was taken over by the Northern Province. Before a new research contract could be finalized between the University of Pretoria and the Northern Province, Greefswald was handed over by the Northern Province to the National Parks Board in 1995 to be managed as part of a future National Park.

The increasing interest of the public, news media, conservationists and students in the Greefswald cultural and natural heritage during the 1990's has stimulated the site-specific focus of research, training, information and education services, and has had a positive effect on considerations of aspects of the site, collection and archive management. Management-oriented studies require the location, identification, and monitoring of sites and their contents within a time-space data framework based on detailed reconnaissance and descriptive research, as well as an environment-oriented theoretical approach.

Consequently, both a heritage management philosophy and relevant practical research methodology and management procedures need to be combined with an applicable theoretical approach including concepts of temporal and geographic contents, cultural traits and historic or prehistoric events related to the Greefswald cultural heritage.

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Locating and investigating traces of stone structures, middens, kraal deposits of domesticated animals, scatterings of bone fragments and potsherds in the Greefswald landscape, should be supplemented by ordering these fragments of an unknown past into a time-space framework with an understanding of the observed cultural phenomena. Examples of observations on such phenomena as what appear to be single or overlapping kraal deposits next to ash deposits in particular geographic locations, adjacent to living quarter areas, human skulls in unusual site contexts, the presence of small quantities of metal slag around site peripheries, stone wall ruins with few stratified traces of occupation debris near midden and kraal deposits, and different kinds of decorated potsherds and glass beads scattered on the surface of the same sites are essential. Some of these phenomena are also gradually being eroded and they are disappearing as a result of natural processes and other causes.

Results of these observations, efforts to establish links between the observed phenomena and the previously excavated deposits, and efforts to describe and understand them, have led to recent reports focused on topics such as the stratigraphy of the Greefswald sites[227], the Song celadon ware from Mapungubwe[228] and a human pot burial near K2[229]. A topic studied at present is the historic-geographic context of herding practices associated with the local Iron Age communities between 900 and 1700 AD, which is a time in which herders were previously considered to have been absent in the central Limpopo valley. The Iron Age herding practices of this post-Mapungubwe period must be studied in a manner comparable to that used by E.A. Voigt in her study of the faunal remains of Mapungubwe and K2 as part of the Greefswald project[230]. The study by Voigt was based on the detailed stratigraphy-oriented research on the main Greefswald sites from 1971 to 1973 and included a statistical analysis of the use of domestic stock. It was referred to on a comparative basis by De Wet-Bronner[231] with regard to cattle herd management practices in the Soutpansberg region.

Samples of kraal deposits were recently taken on several sites on Greefswald for phytolith analysis, to complement Huffman's research on phytoliths and settlement organization at Broederstroom[232], and to substantiate the identification of kraal deposits and related settlement characteristics on Greefswald.

For the purposes of the Greefswald Archaeological Project, the observation, analysis, evaluation and interpretation of phenomena with regard to the Greefswald sites is considered to require a systematic data synthesis methodology and a hermeneutic approach to understanding the emerging picture of chronology and everyday life. The most recent observations of site features and the cultural phenomena on Greefswald are also intended to serve two purposes in future; to enhance a contextual understanding of the Iron Age populations on Greefswald and the spatial organization of their cultural remains[233]; and to enable a management programme for the Iron Age cultural remains within its geographic environment. Underlying these considerations is the concept that the archaeological sites and their cultural remains are an integral part of the current natural landscape, reflecting a close relationship between past communities and their environment.

2.6 Current trends and developments

Developments in archaeological approaches to research in the 1980's have influenced research in archaeology in the 1990's, emphasizing a critical attitude towards earlier research, even towards some contemporary research, and favouring generalizing explanations rather than a descriptive approach. The explanation of archaeological phenomena is often manifested in more elaborate structuralist studies of symbolism[234]. Archaeology is thus seen by some archaeologists to be primarily concerned with the thoughts, activities and symbolic behaviour of people[235]. Consequently, themes such as settlement patterns in relation to the

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world view of the site inhabitants and their concepts of symbolism[236] are current themes of interpretive studies, often with reference to Mapungubwe.

Some approaches in archaeological theory still include critical theory and the dialectic model of explanation of phenomena. Followers of critical theory continue to deny the possibility of objectively observing facts. They still believe that claims of objective observations are nothing but the ideology of control exercised to dominate contemporary society[237]. The assumed prejudices of researchers are seen to render objectivity impossible and provide a reason to discredit a contextual approach to research[238]. The critical approach is sympathetic to a dialectic explanation of economic and social relations in history and the ideological manipulation of the population. A similar view is held with regard to Iron Age archaeology with specific reference to the Zimbabwe archaeological site[239], discrediting the culture historical paradigm[240]. The study of forces and relations of production, in particular, is seen as a future direction for archaeology. A need for theoretical explanations rather than fieldwork has been expressed[241].

On the other hand, modern approaches to current research include studies on Iron Age cattle herding[242], trade with reference to celadon ware from China[243] and glass trade beads from Egypt[244], provenance studies on pottery[245], existing traditional gold mining practices in Zimbabwe[246], the human physical remains from the Greefswald sites[247] and poorly known stone features on the sites and the settlement history of human populations in the Greefswald environment. Consequently, supporting evidence of the stratigraphy of the Greefswald sites was published[248], small sites in the Greefswald environment investigated, old radiocarbon dates calibrated and new dates from these sites obtained. The settlement sites of small communities and evidence from the everyday life of community members are considered to be an important part of the current Greefswald research and conservation programme. The relationship between the Greefswald communities and their natural environment is seen as a necessary research theme[249] in support of the study of the settlement and subsistence patterns of communities in regional context, similar to current research in the mid-Zambezi valley[250].

Oral traditions and aspects of every day life in the central Limpopo Valley may contribute to a better understanding of the prehistory of the Greefswald environment. Phase Four of the Greefswald Archaeological Project includes an ethno-archaeological study of local traditions and value systems by students and spokespeople who are members of communities in the Limpopo River region, and the indigenisation of archaeology[251]. The substantial numbers of San-type bone arrowheads and linkshafts in the upper layers on Mapungubwe, currently assumed to belong to a post stone-wall settlement phase on Mapungubwe, may reflect the possible presence of hunter-foragers in the mixed farming community of Mapungubwe. Consequently, future research on the San, known as the Masarwa or Vaalpens people who were still present in the North Western Transvaal during the late nineteenth and early twentieth century[252], is considered to be a necessary aspect of future ethno-archaeological research, to examine the possibility of San presence on Mapungubwe. Hunting and farming conditions in the Limpopo Valley must have been influenced by climate and the historically known presence of the fatal cattle disease *nagana* caused by the tsetse fly[253].

Research on the Greefswald sites is influenced by the need both to obtain evidence on the sites as archaeological sites, and to preserve them for posterity. A decade after Mapungubwe and K2 had been proclaimed as national monuments in the early 1980's, Greefswald also formally became a nature and cultural conservation area, initially under the control of the Department of Nature Conservation of the Transvaal Province in 1992[254]. Currently, Greefswald is part of a conservation area which will soon be proclaimed as a national park.

Concepts with regard to culture conservation have developed significantly during the 1990's and are expected to influence on future of the sites and cultural collections as well as the

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management of the research archives. Since the first definition and promotion of the concept of cultural resource management by conservationists such as those in the Department of Environment Affairs[255] and National Monuments Council[256] in the early 1990's, the emphasis of conservation was shifted to the concept of heritage management. This concept also involves cultural resources in environment management[257] and the assessment of heritage management in South Africa[258]. The National Monuments Council was mandated by the Arts and Culture Task Group[259] to manage the redrafting of the National Monuments Act[260], which is expected to significantly influence principles, norms and standards of conservation, record keeping, the role of conservation institutions and the involvement of the public. This development is seen as a paradigm shift in heritage management[261].

The modern-day concepts of conservation and education-orientated management of cultural heritage or cultural resources as part of the natural landscape became an integral part of the management vision of some archaeologists, museologists[262] and the National Parks Board[263]. One direct result of this development in resource management is the need to compile site, collection and archive inventories; to develop a monitoring system for sites and features; and to develop a programme to inform, educate and train the public with regard to cultural heritage. This development is of specific importance to the Greefswald heritage, consisting as it does of the main sites and small sites, a large research collection, and an archive containing thousands of documents and photographs accumulated over a period of more than sixty-two years. The concept of relating the cultural remains to the environment, and reference techniques to relate artefacts and other materials to site contexts and research records, require a site-specific research and management approach to research. Such an approach includes an emphasis on the detailed recording of stratigraphic and geographic contexts, conditions of conservation and a knowledge of project history.

In future, archaeological sites and objects will be protected by a new South African heritage management system, including the recently written Draft Heritage Resources Bill[264] which will replace the existing National Monuments Act of 1969, and the South African Heritage Agency (SAHA) which will replace the National Monuments Council. Against the background of these developments, the role of museums in modern society has been reconsidered[265], new meanings are attributed to existing monuments[266] and archaeological data bases with regard to cultural heritage are reconsidered[267]. During this course of events, such issues as the value and protection of the Greefswald Iron Age sites were emphasised on a recent visit of representatives of the National Monuments Council to these sites, and the proclamation of a Greefswald cultural heritage collection was completed[268].

A public information and education programme, designed to give the public access to the Iron Age sites on Greefswald and their cultural remains, is expected to include a museum exhibition project and an ecotourism project. The museum project, intended to restore and display indigenous gold artefacts and related cultural objects as soon as 1998, was recently initiated by the University of Pretoria, the National Art Gallery in Cape Town, the National Cultural History Museum in Pretoria, the National Monuments Council and the National Parks Board. The ecotourism project will involve public access and guided tours to the Iron Age sites on Greefswald, and will be initiated after the new national park has been proclaimed and as soon as the archaeological sites have been prepared for tourists according to an officially approved site management plan. The information and education programme is expected to be supported by the research programme of Phase Four of the Greefswald Archaeological Project and the Heritage and Culture Tourism graduate course at the University of Pretoria. This course is managed by the Department of Anthropoloy and Archaeology.

The recently expressed need for academic institutions to maintain high standards of training with regard to archaeological research design and field training in general[269] have particular

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importance in the context of the Greefswald Archaeological Project. The new national policy framework for higher education, formulated by the National Commission of Higher Education, visualises human resource development programmes that are responsive to the social, cultural and other needs of the country according to the best standards of academic scolarship and training[270]. The prehistoric and historic past of South Africa has been identified as a neglected subject, for example in school education[271]. The preparation of university students for a career in the teaching profession is currently guided by policy documents such the Draft Statement on the National Curriculum for Grades 1 to 9, which specifically refers to archaeological sources such as skeletal remains, pottery remains, beadwork and iron tools[272], the origins of culture and cultural traditions[273]. These national initiatives provide a constructive framework for academic research and training programmes and already involve the Iron Age sites of Greefswald as a research theme and an educational heritage model (cf. Figure 2.15). Education-oriented history books refer to Mapungubwe as an important settlement of a mixed farming community and a trade centre[274].

Within the various and often opposing trends in current Archaeology and conservation, the archaeological sites of Greefswald and the Greefswald artefact collection are frequently referred to in scientific and popular media. It became necessary for the University of Pretoria to provide for a variety of scientific and public needs, data and management standards[275] and to develop a cultural resource-oriented research paradigm[276]. Information on the archaeological sites of Greefswald and photographs of the sites and artefacts are still often requested by local and international news media, including media which focus on popular themes such as the environment[277]. Consequently, booklets and electronic information on the Greefswald sites are occasionally made available by the University[278].

2.7 Summary: The Greefswald Archaeological Project

This study examines written data with regard to the archaeological project on Greefswald and reveals specific tendencies in the course of the Greefswald Archaeological Project, against the background of the development of archaeology in southern Africa. This course of development has contributed to a project history in several distinct phases. A succession of events led to the Greefswald Archaeological Project, followed by the project itself which went through three phases of research and conservation. This field report is the result of the third phase of the Greefswald Archaeological Project, and is intended as a key data base for future archaeological research heritage management and public information programmes.

The events which led to the Greefswald Archaeological Project were the early archaeological excavations at Great Zimbabwe, the exploration of archaeological sites in the southern African interior, a rash of treasure hunting and the subsequent discovery of Mapungubwe by members of the public. J.C.O. van Graan, who reported the discovery of graves with gold funerary objects to the University of Pretoria in 1933, contributed directly to an important chapter in the prehistory of southern Africa.

The first phase of the Greefswald Archaeological Project lasted from 1933 to 1950. During Phase One, exploratory excavations by the University of Pretoria in 1933 were followed by large-scale excavations by an excavation team from 1934 to 1940. Then the field programme was interrupted by the outbreak of the Second World War. During the aftermath of the war in the 1940's, the field programme was discontinued, and Phase One of the project ended in 1950 when the director, Van Riet Lowe, advised the termination of the project. This phase was widely criticised for its lack of detailed recording and scientific approach.

Phase Two of the Greefswald Archaeological Project was initiated by a reconnaissance visit to Mapungubwe by anthropologists from the University of Pretoria in 1951 and limited

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excavations on the Southern Terrace at Mapungubwe during 1953 and 1954. Phase Two ended with the establishment of the Department of Archaeology at the University of Pretoria and the completion of the programme of limited excavations in 1970. During the 1950's and 1960's Archaeology became established in South Africa, and the Iron Age and the existence of prehistoric subsistence farming communities became known. The need for a substantial archaeological research programme on the Greefswald archaeological sites was realized.

Phase Three of the project lasted from 1970 to 1995. Initially, the project was designed to last for a shorter period. From 1971 to 1973, full-time excavations were done on the main sites K2 and Mapungubwe, aimed at a detailed stratigraphic study and the reconstruction of the Iron Age settlement sequence and the cultural traits of the site inhabitants. Supplementary excavations and site mapping were continued during the early 1990's. A full research report submitted in 1979 was followed by supplementary reports until 1983, and specialist publications until 1996. Phase Three ended in 1995 when supplementary research for this publication was completed and the inclusion of Greefswald in the new Limpopo National Park was approved by the South African Government. The conclusions in this report are regarded as guidelines for the planned Phase Four of the Greefswald Archaeological Project.

The Greefswald Archaeological Project currently includes specialized site documentation, interdisciplinary research themes and ethno-archaeological studies. The management of the Greefswald Iron Age sites and cultural remains is focused upon a modern South African heritage model involving protective legislation, conservation procedures and a public education and information programme.

The archaeological sites of Greefswald and other farms to be included in the new national park will be managed according to guidelines formulated by the new archaeological task group for the park, including representatives of the National Parks Board, the University of Pretoria and the local Provincial Government.

Current developments at the University of Pretoria are the inclusion of archaeological themes such as the cultures of Africa, including Mapungubwe, in the new education programmes on Culture and Heritage Tourism. Material on Mapungubwe will also be included in the materials used in school education in future. The National Heritage collection of artefacts from Mapungubwe and K2 will be permanently on public display in the Africa Exhibition at the University of Pretoria.

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Table 2.1 Summary of fieldwork on Greefswald

Project phase	Dates	Director	Field worker	Excavations	Reports
Phase One	1933	L. Fouché	L. Fouché C. van Riet Lowe	**Mapungubwe Hill:** Grave area **Southern Terrace**: TB 1	Fouché, L. 1937
	1934	N. Jones	N. Jones J.F. Schofield	**K2 (Bambandyanalo)**: Trenches 1-3 **Mapungubwe Hill**: JS 1, JS 4, JS 5, JS 6 **Southern Terrace**: JS 2, JS 3	
	Summer of 1934-1935	L. Fouché	P.W. van Tonder	**Mapungubwe Hill**: Grave Area	
	1935-1940	C. van Riet Lowe	G.A. Gardner	**K2**: Test pits 1-13 Trenches 1, 2 Blocks 1-5 **Mapungubwe Hill**: Blocks 1-8	Gardner, G.A. 1963
Phase Two	1953-1954	P.J. Coertze	H.F. Sentker	**Southern Terrace**: Squares A2, B2, C2, A3, B3, C3, D3	Sentker, H.F. 1969
	1968-1070	J.F. Eloff	J.F. Eloff	**K2**: Ts 1968 **Southern Terrace**: Square E2	Eloff, J.F. Progress reports
Phase Three	1971-1984	J.F. Eloff	A. Meyer	**K2**: Rn 1, Ts 1, Ts 2, Ts 3, Ts 4, Ts 5, Ts 6 **Mapungubwe Hill**: Mk 1 **Southern Terrace**: Squares F4, H5, K8	Eloff, J.F. 1979; 1980; 1981; 1982; 1983 Meyer A. 1994
			J.F. Eloff	**K2**: Rn 2 **Mapungubwe Hill**: Mk 3	
	1992-1995	A. Meyer	A. Meyer M. Steyn C. Nienaber	**K2**: D4, Rn 3 **Other sites**: Test trenches on Map 4, Map 10, Map 12	Meyer, A. 1997
Phase Four	1996-2000	A. Meyer	A. Meyer M. Steyn C. Nienaber	**K2**: Rn 3 **Mapungubwe Hill**: Mk 4 **Southern Terrace**: 'Main Entrance' **Other sites**: Nearby settlement sites with evidence of subsistence farming and trade	Annual field reports & various specialist reports

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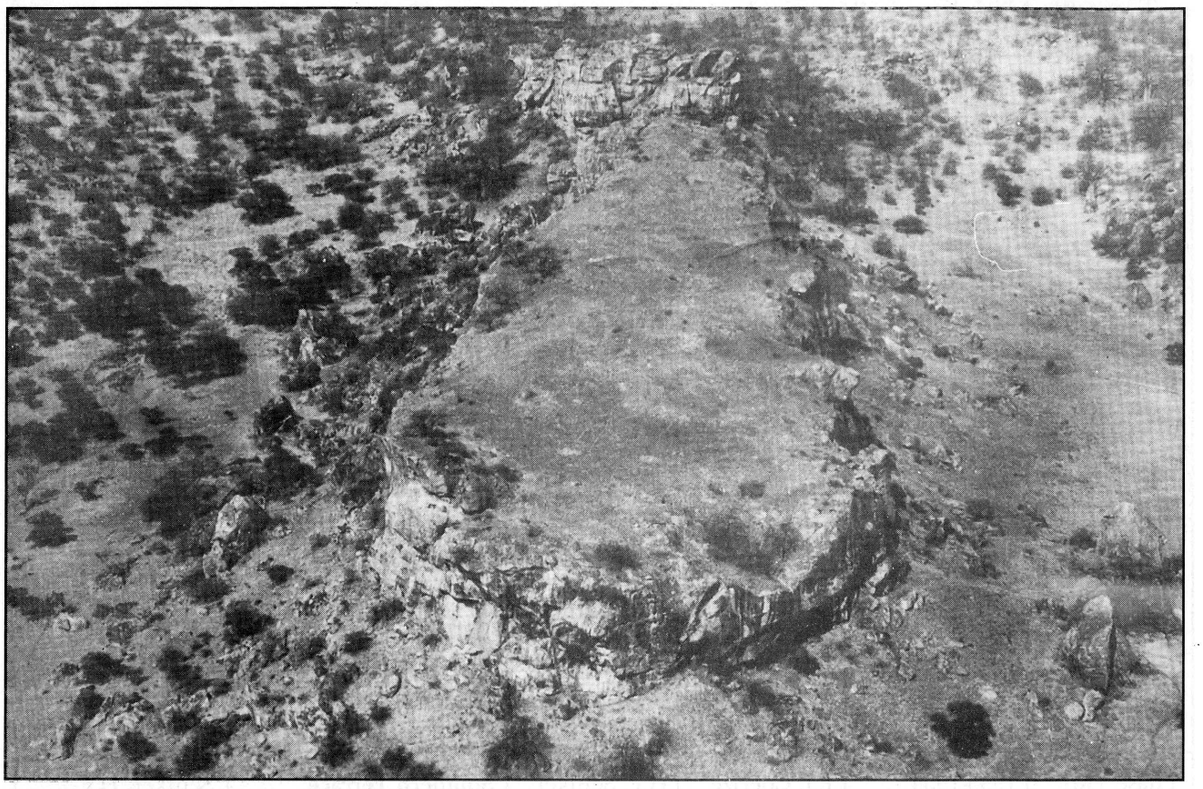

Figure 2.1[279]
An aerial view of Mapungubwe Hill from the north-west, before excavations, 1933.

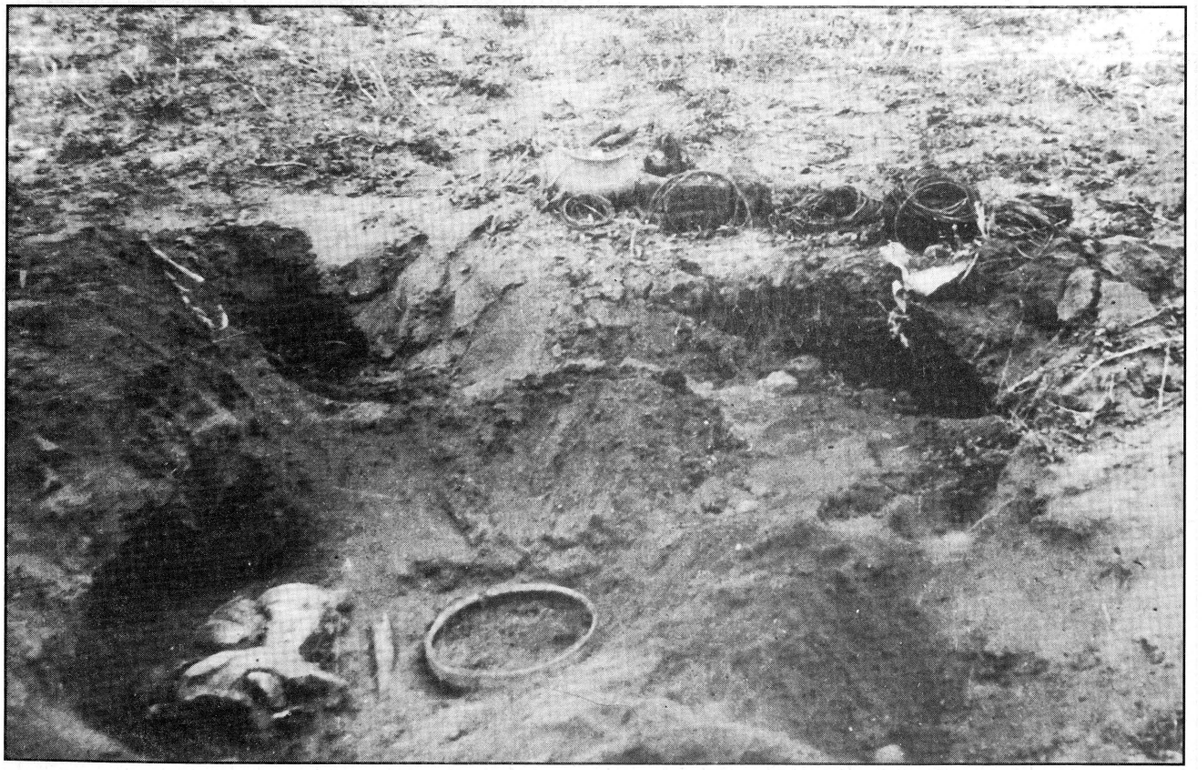

Figure 2.2[280]
Objects found in graves on Mapungubwe Hill when the site was discovered in 1933.

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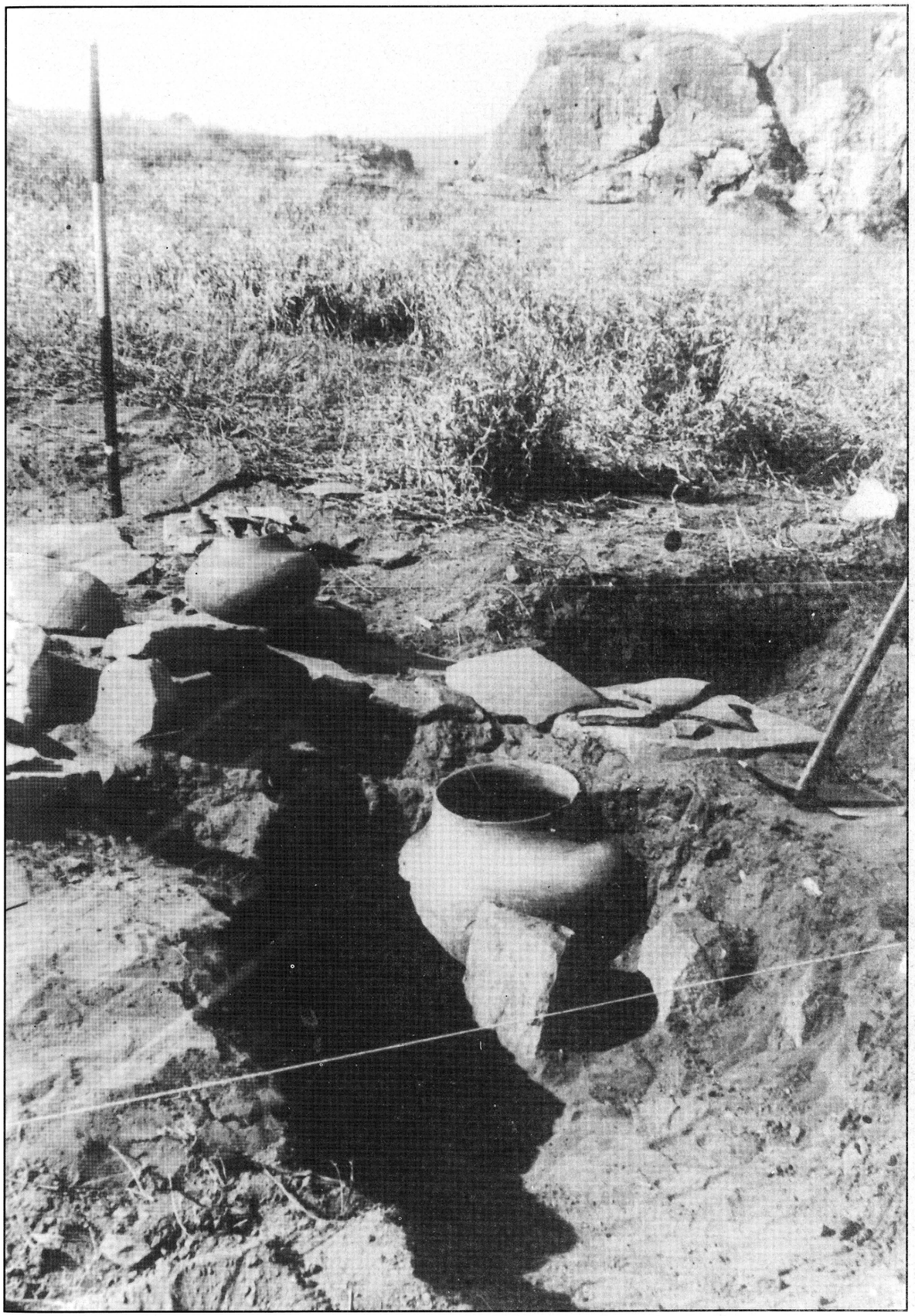

Figure 2.3[281]
Clay pots and stone structures discovered on Mapungubwe Hill, 1933 or 1934.

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Figure 2.4[282]
Stone terrace walls discovered on Mapungubwe Hill during the first excavations in 1934.



Figure 2.5[283]
A free-standing stone wall on Mapungubwe Hill above the main entrance to the hill, ca 1934. The wall has been badly damaged by visitors since 1980.

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Figure 2.6[284]
A view of Excavation JS 2(b) on the Southern Terrace viewed from the south in 1934.

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Figure 2.7[285]
General J.C. Smuts on a visit to Mapungubwe in 1934. From left to right: Professor C. van Riet Lowe, General Smuts and Reverend N. Jones. They are standing on the site of Excavation JS 2(a) on the Southern Terrace.

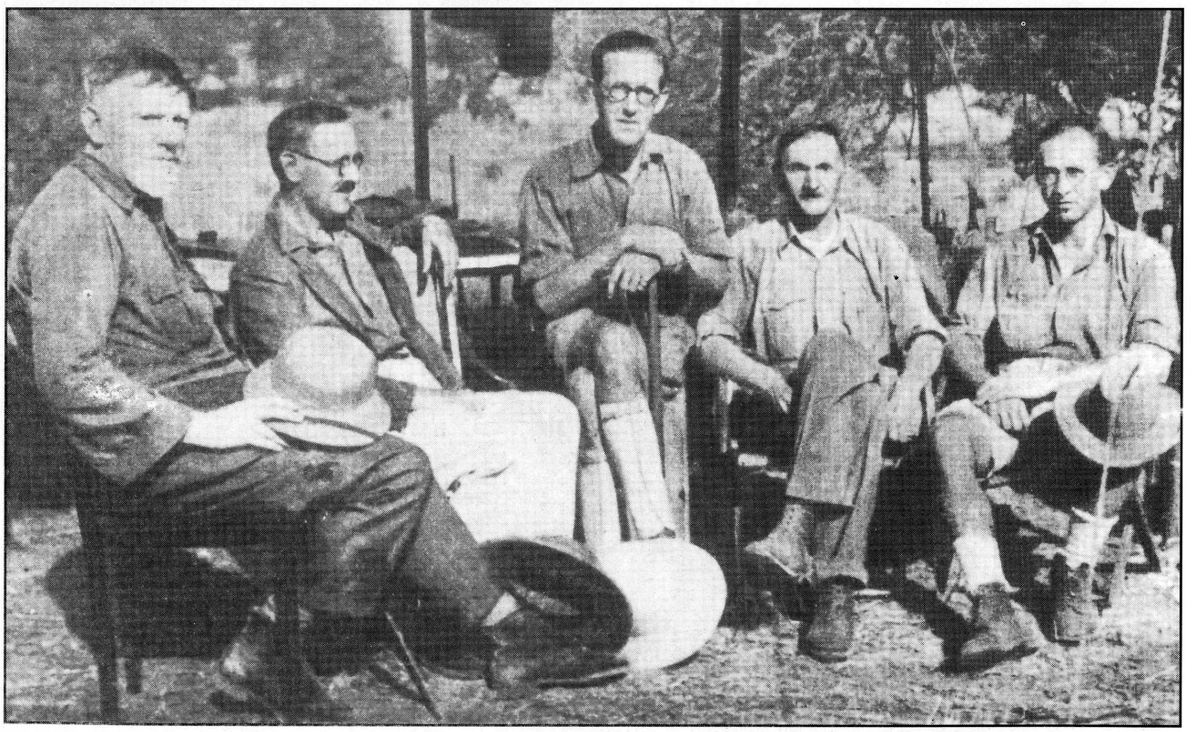

Figure 2.8[286]
The early excavators at Mapungubwe, 1934. From left to right: Professor L. Fouché, Mr J.F. Schofield, Professor C. van Riet Lowe, Reverend N. Jones and Professor F.J. Tromp.

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Figure 2.9[287]
Later excavators on Mapungubwe Hill, 1973. From left to right: A. Meyer and J.F. Eloff.

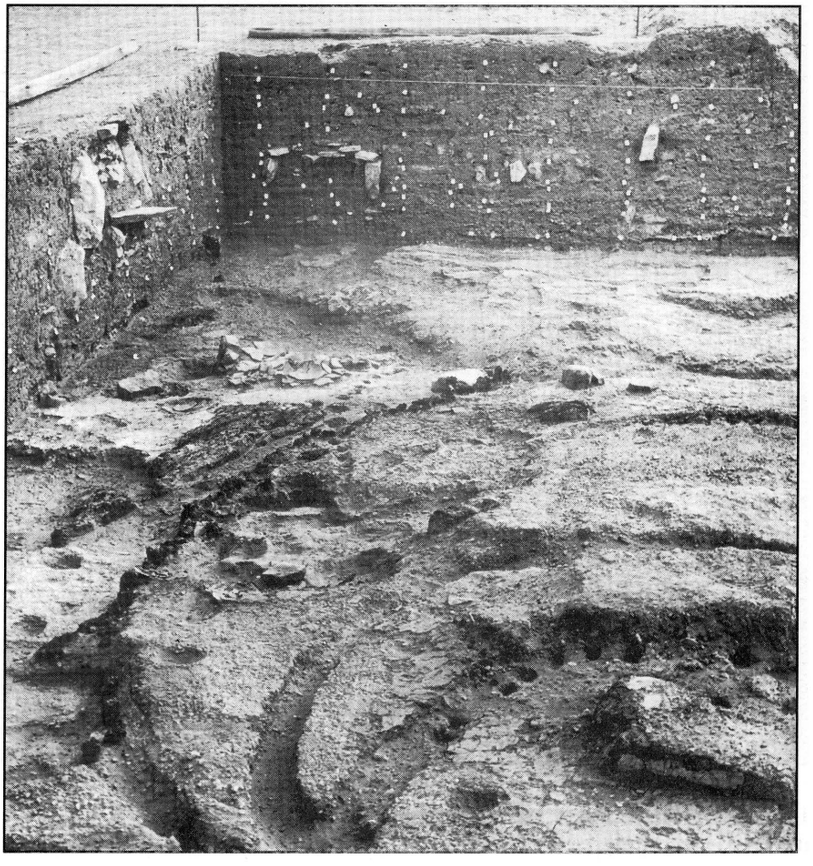

Figure 2.10[288]
Excavation Mk 1 on Mapungubwe Hill, 1973. Detailed excavation and recording techniques are required to reconstruct the settlement remains on the Greefswald sites.

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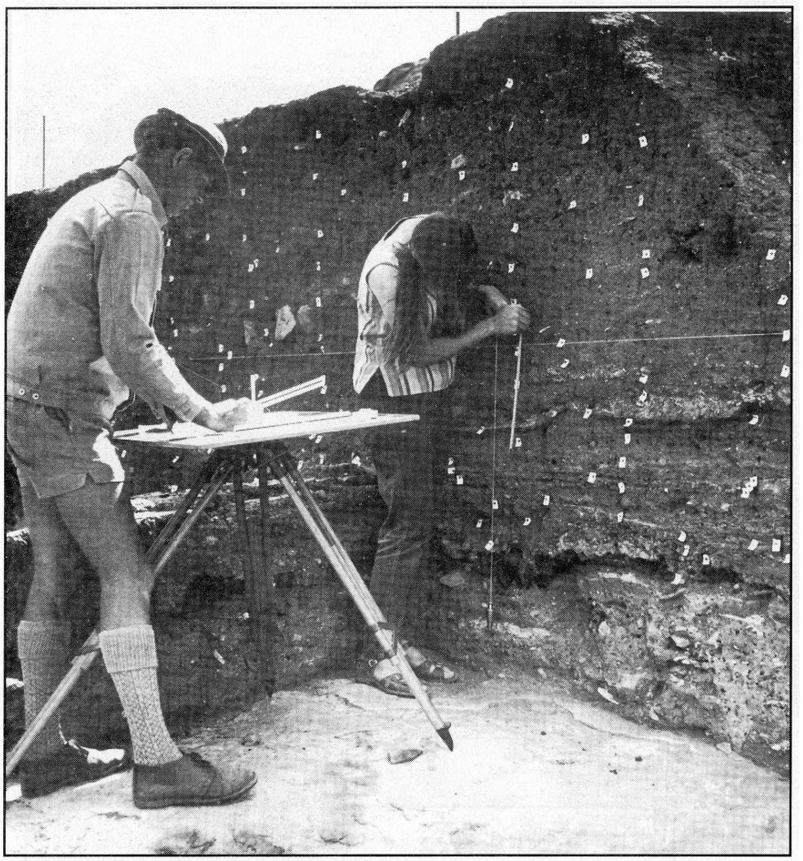

Figure 2.11[289]
Recording Profile B3-A3 in Excavation Mk 1 on Mapungubwe Hill in 1973. The excavators, from left to right: A. Meyer and A. Hanisch.



Figure 2.12[290]
Maintenance work on the Southern Terrace, July 1988.

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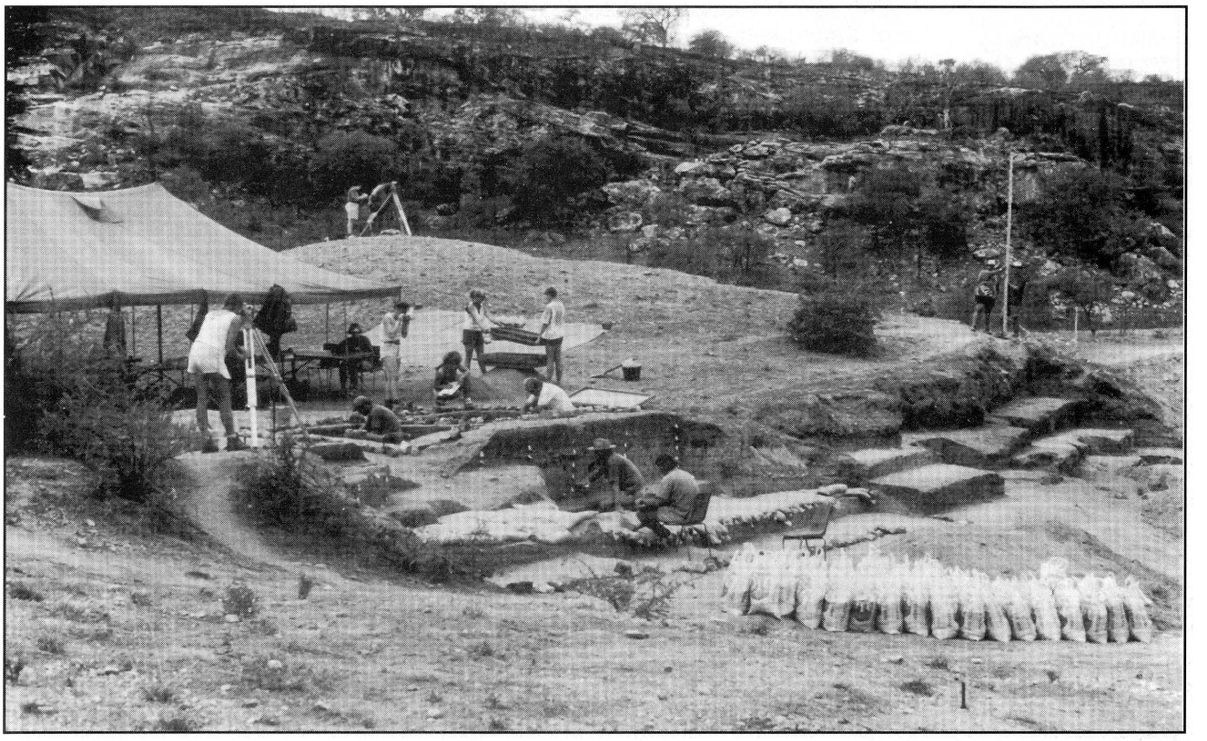

Figure 2.13[291]
Investigating kraal deposits in the wall of Gardner's old excavation on K2, 1995. A field team consisting of staff members and students of the Department of Anthropology and Archaeology and the Department of Anatomy of the University of Pretoria are seen cleaning and surveying the collapsed wall of the old excavation.

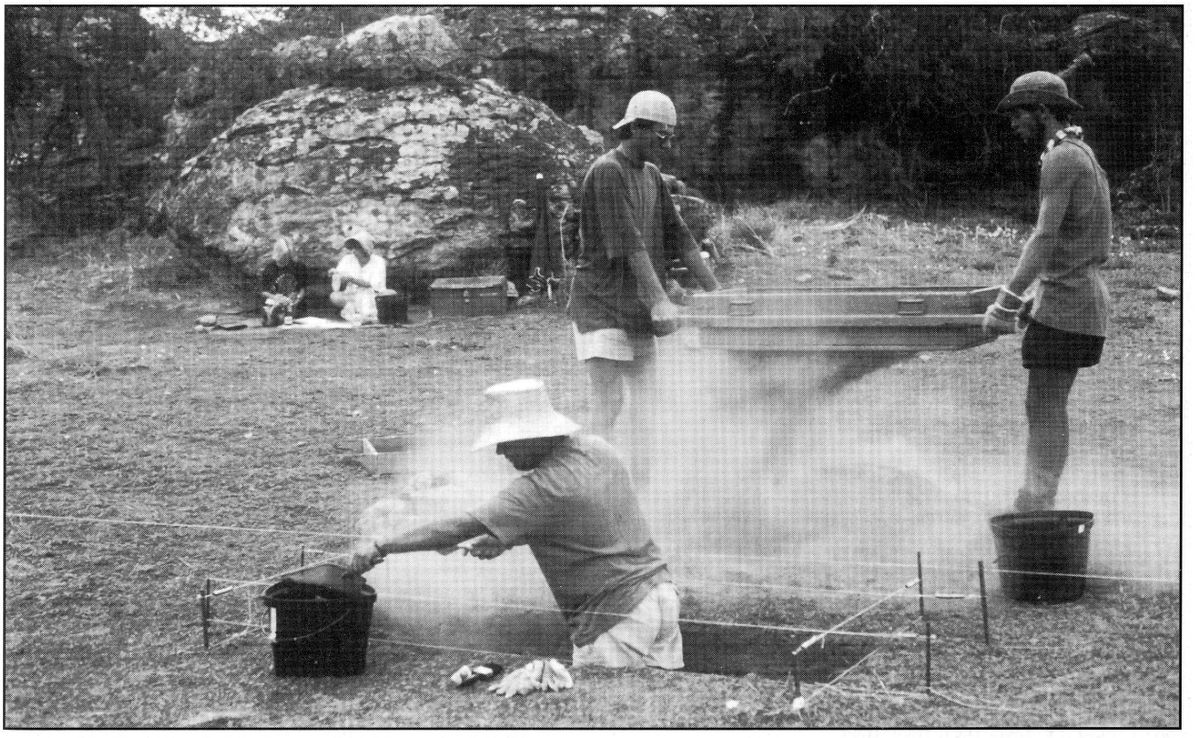

Figure 2.14[292]
Investigating kraal and midden deposits on Site Map 4 in the proximity of Mapungubwe to the north-east. Students doing a test excavation in Test Trench 1, April 1995.

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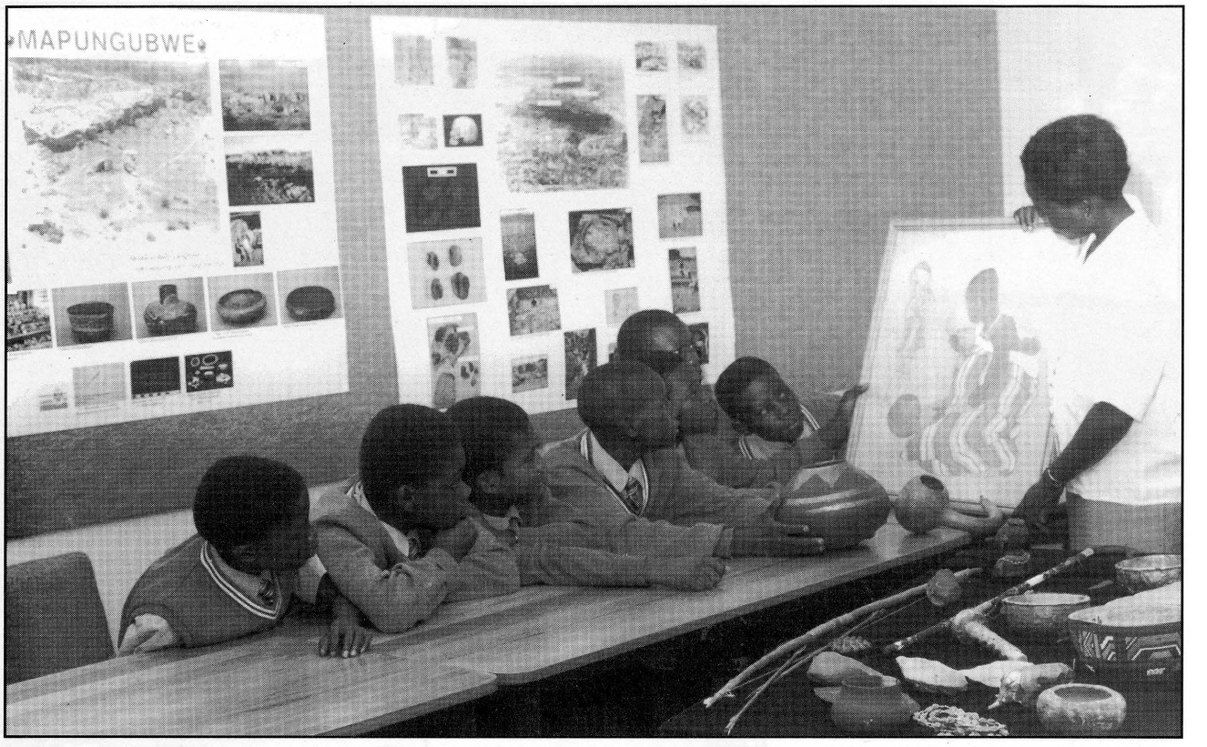

Figure 2.15[293]
A post graduate student of the Department of Anthropology and Archaeology at the University of Pretoria (right) explaining the significance of Mapungubwe, its gold objects and traditional artefacts to a group of pupils from the Pretoria Boys' High School.

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281 Archive No UP/AGL/F/2727. Photographic copy by H. Visser in 1995 of an original photo taken in 1933 or 1934.
282 Archive No UP/AGL/F/2740. Negative, copy of an old photo. Original photo: N. Jones?

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283 Archive No UP/AGL/F/2745. Negative, copy of an old photo. Original photo: N. Jones? 1934.
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3 THE STRATIGRAPHY OF THE GREEFSWALD SITES

3.1 The Phase Three fieldwork programme, approach and method

The sequence and placement of the excavations

The sequence and placement of the excavations on the Greefswald sites during Phase Three of the Greefswald Archaeological Project were determined by the research objectives, the site characteristics, the location of the earlier excavations during previous research phases and the state of preservation of the sites.

In 1971, the first excavations of Phase Three concentrated on the large deposits of the Southern Terrace (cf. Figure 3.53) because it was still relatively unexplored at the time. The aim was to continue the excavation work initiated there by Schofield during Phase Two of the project, as well as to save the remaining deposits of K2 and Mapungubwe Hill which had already been largely excavated, until later when better knowledge of the stratigraphy of the sites would have been obtained. During 1972, excavations concentrated on K2 (cf. Figure 3.2). The excavations on Mapungubwe Hill were carried out during 1973 (cf. Figure 3.53). Supplementary excavations were done on K2 and Mapungubwe after 1973. From 1993 to 1995, small test trenches were also excavated on the sites indicated on Map 4, Map 10 and Map 12 (cf. Figure 1.1).

For the purposes of this report, the excavated deposits and features of K2 are described first, because the main settlement activities were concentrated in the K2 area before Mapungubwe eventually became the main settlement site. In accordance with the settlement chronology, the site features and deposits of Mapungubwe Hill and the Southern Terrace are then described. Finally, the test trenches on the later and smaller sites are briefly mentioned.

The placement of the excavations was decided according to the need to obtain evidence on site chronology and site features and, wherever possible, also supplementary information on the deposits removed by previous excavators. Some key problems experienced were the lack of detailed maps and stratigraphic records from earlier excavations and of markers on the ground which could support the effective use of the surveyors' co-ordinates and stratigraphic measurements of the vast deposits and the complicated stratification of the large sites.

On the Southern Terrace, the test excavations of Phase Three were placed mainly between the excavations of Phase Two on the south-western perimeter of the Southern Terrace and the so-called occupation area which had been largely excavated during Phase One of the project (cf. Figure 3.53). At the so-called Mahobe site, a test excavation was done during Phase Three, adjacent to the test trench dug in Phase One (cf. Figure 3.53).

On K2, the test excavations of Phase Three were adjacent to some of the test excavations and major excavations of Phase One (cf. Figure 3.2). Consequently, excavations initially concentrated on midden deposits. Eventually, it was realized that the actual household areas of the K2 site had not yet been identified *per se*, and the site was then investigated in limited horizontal excavations using small excavation grids.

On Mapungubwe Hill, the test excavations of Phase Three were also placed adjacent to the remaining sides of Gardner's large excavations (cf. Figure 3.53).

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Objectives

The earlier excavations of Schofield and Gardner concentrated on the recovery of objects for the light these might shed on the identity of the former inhabitants of the site. Phase Three focused on the detailed recording of site stratification and stratigraphic sequence, site features such as house plans, floors, middens, and other structural remains, and all small finds, within their stratigraphic contexts. All small finds recovered during Phase Three are preserved with full locational information for future reference.

The fieldwork method

Surveying and mapping

The original maps of K2 and Mapungubwe, as set out in the 1979 report, were compiled with the aid of older maps, supplemented by the use of additional, elementary surveying techniques. These maps were, however, considered too rudimentary and inaccurate for specialised research and publication purposes. Consequently, the sites have been re-surveyed and mapped, including the location of the individual excavations, using modern electronic surveying equipment. The surveyors' iron pegs on and around the archaeological sites have been permanently set in concrete blocks, and mapped and documented according to their *x*, *y* and *z* co-ordinates. These surveyors' reference points have each been marked with the abbreviation GR for *Greefswald* and a unique serial number. They have formed the reference framework for the mapping of sites and excavations throughout Phase Three, and will remain in use for future reference.

Excavation

The individual excavations have been subdivided into squares of 2m x 2m or 3m x 3m and numbered in the conventional way. Features and important materials were recorded *in situ* as far as possible. Large objects were removed from the excavations by hand. Small objects were recovered by sifting the soil through coarse and fine mesh sieves. The initial use of chemicals to strengthen bone fragments has been abandoned because of the problems this process created in the eventual analysis of the material. All objects have been kept for the purposes of statistical or other analysis.

All site deposits were excavated according to their visible stratigraphy, including man-made floors and other features. The man-made floors, layers of burnt hut rubble, ash and soil and other phenomena were each considered as individual units within meaningful stratified contexts and were carefully uncovered and recorded as such. Individual layers of soil or ash thicker than 15cm were subdivided into arbitrary layers no thicker than 15cm.

Site management

Since the start of the excavations in 1971, the pits and trenches of Phase Three were protected by sheets of corrugated iron and sheets of plastic material. Since 1973, however, it has periodically become necessary to fill in some of the excavations with excavated soil. An intensive site restoration programme was followed from 1988 to 1991 to complete the filling up of the excavations of Phase Three and some of the more sensitive deposits in the early excavations of Phases One and Two. There is still cause for concern about the collapsing walls of some of Gardner's very large excavations. Recent fieldwork activities include the recovery of cultural material from the old excavation walls and a stratigraphic study of the deposits exposed in the walls of these old excavations by natural erosion. The impact of the numerous visitors on the sites also requires a well-planned management programme.

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FIGURE 3.1 LIST OF STRATIGRAPHIC SYMBOLS

a	white
b	light grey
c	dark grey
d	black
e	light brown
f	dark brown
g	mustard yellow
h	light yellow
i	red
j	red-brown to pink-brown
k	grey-brown
l	sand
m	soil
lm	sandy soil
n	organic matter
mn	soil mixed with organic matter
o	ash
om	ash mixed with soil
p	gravel
q	charred seeds
r	coarse
s	fine
t	disturbed deposit
u	sterile stratum
L	layer (eg. L7)
V	floor
Tg	test pit
Ts	test trench
Rn	grid

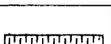
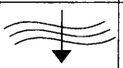
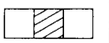
x x x x x	burnt black
	stone
	bone
	potsherds
	burnt hut rubble
	soil sample
	possible post hole (plan)
	possible post hole (plan)
	post hole (plan)
	post hole (section)
	charred post (plan)
	charred post (section)
	layer of gravel (section)
	gravel floor (section)
	gravel floor (in plan)
	slope (eg. in floor)
	step in floor
	clear distinction
	vague distinction
.....	arbitrary distinction
	excavated part
	iron peg in cement
	charcoal

Figure 3.1
List of stratigraphic symbols

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3.2 The K2 site complex

The general stratigraphy and excavations of the K2 complex

At first glance, K2 appears to be a large site of approximately 5 hectares, consisting of ashy midden deposits, and of settlement debris such as potsherds and weathered bone fragments visible on the site surface (cf. Figure 3.2). However, closer inspection of the exposed deposits in the collapsed walls of the old excavations reveals the presence of a compacted, sandy kraal manure deposit underlying the midden deposits of an enormous ash heap in the centre of the site, indications of red gravel in the sandy deposits to the east of the central midden, and shallow deposits of sandy ash on the lower slope of Bambandyanalo Hill to the north-east of the central midden. Test excavations in 1972 and 1973 on K2 also exposed the prominent remains of burnt huts and human-made mudstone gravel floors in clearly stratified deposits to the east and north-east of the central midden. The red mudstone gravel and yellow to yellow-white mudstone gravel, which had been used for the construction of the floors in the settlement of K2, could only have been collected from the weathered surfaces of the natural mudstone deposits underlying the sandstone deposits of the surrounding hills.

An interpretation of all the available evidence supports the reconstruction of a site which consisted of a central cattle kraal which was eventually covered by the central midden, a central homestead area to the east of the central kraal, middens adjacent to the central homestead area, the north-eastern homestead and midden areas on the slope of Bambandyanalo Hill, a western and northern peripheral settlement area, and an eastern peripheral midden known as K1 (cf. Figure 3.2).

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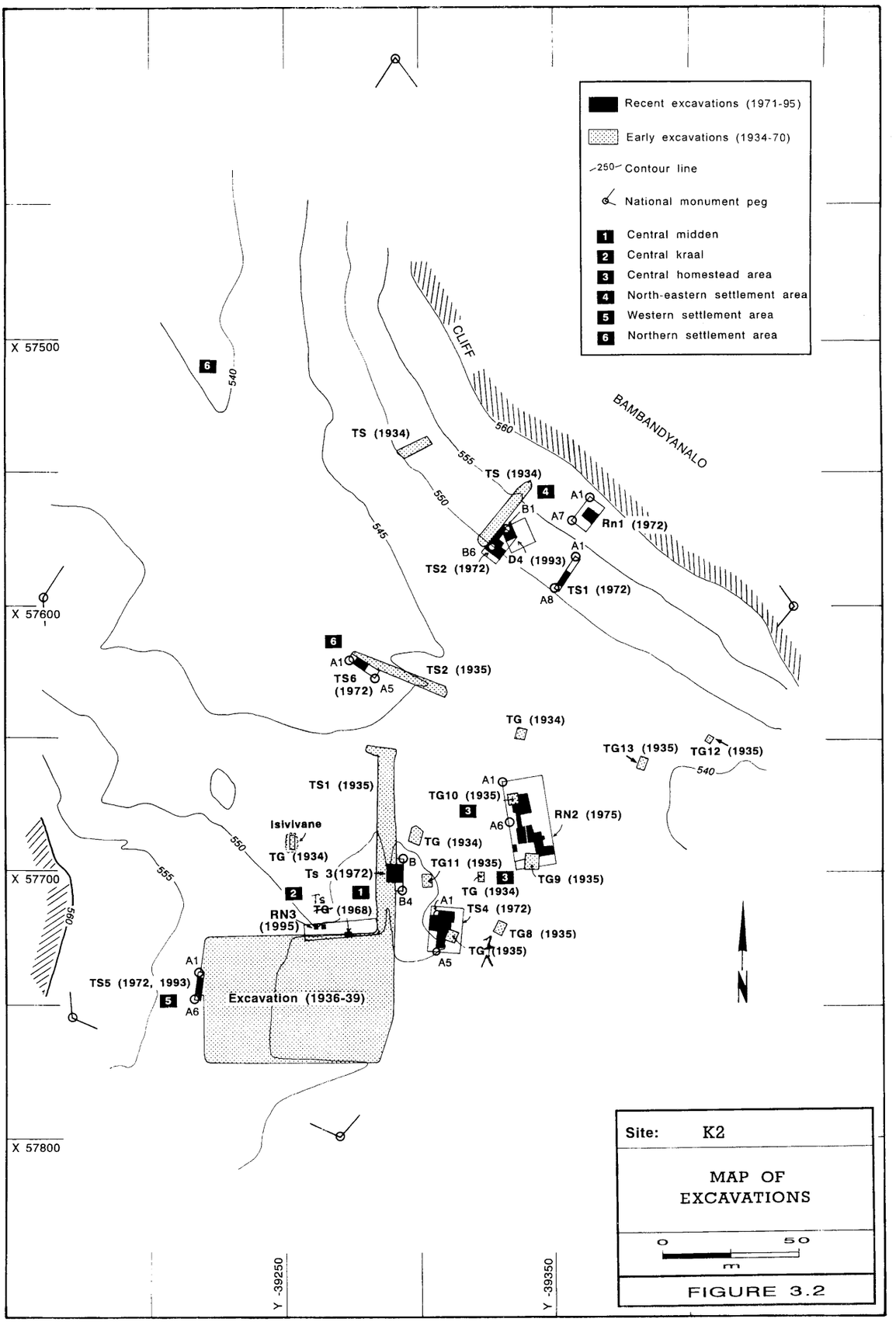

Figure 3.2
K2. Map of excavations (cf. also Figure 1.8).

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The central midden and kraal area

General aspects of the central midden and kraal deposits

According to Gardner's descriptions of the midden deposits exposed in his Test Trenches 1 and 2 in 1935[1], the length of the midden may be estimated at more than 100m and its depth at a minimum of 6m. Observations made during Phase Three of the project suggest that the midden originated as a refuse dump on a slight slope between the kraal and the central homestead area, and eventually developed into a huge mound which covered the kraal deposits. The contents of the midden deposits include several human burials, beast burials, traces of gravel floors around its perimeter and a wealth of artefacts and household refuse[2]. During 1972, detailed stratigraphic data and a representative collection of cultural materials were obtained from Excavation Ts 3 (cf. Figures 3.4 to 3.8).

The deposit of the central kraal was exposed for the first time by Gardner during the excavation of his Test Trench 1, and again in his Block 5. He estimated that the kraal remains, which he described as a definite kraal deposit underlying the central midden, were approximately three feet (1m) thick and 160 to 170 feet (approximately 50m) wide. The kraal deposit was identified as consisting of old, compacted manure which contained few objects of interest, and it was interpreted as a cattle kraal used during an early stage of the existence of the settlement. It had been used as a refuse dump by the site inhabitants during the later phases of the settlement[3]. The remaining kraal deposits display some evidence of stratification[4].

During 1968, radiocarbon material was collected in Test Trench Ts 1968 in the collapsed wall of Gardner's Block 5 (cf. Figures 3.2 and 3.3), and the dates have recently been calibrated (cf.

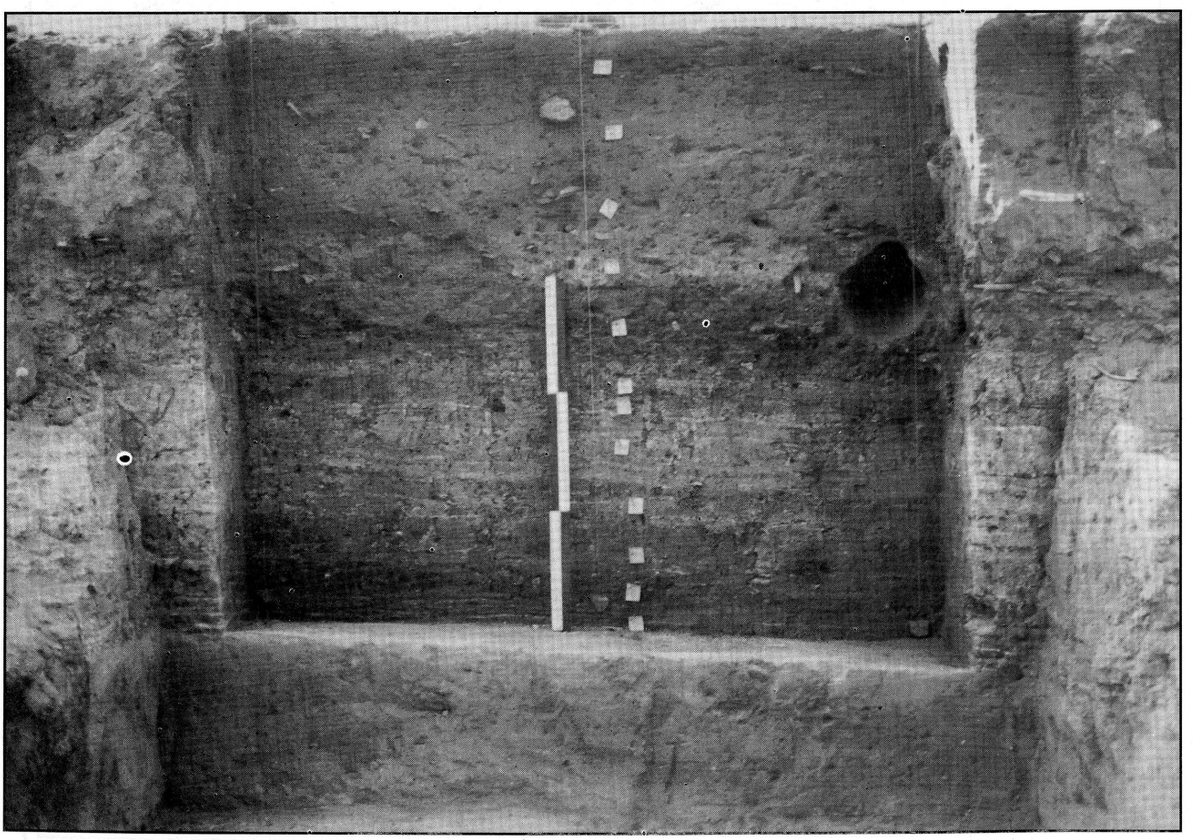

Figure 3.3[5]

Test Trench Ts 1968. A view of the central kraal deposit underlying the western periphery of the central midden (cf. also Figures 3.2, 3.10 and 3.12).

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Appendix 8.9). The excavation was located and mapped in 1995 when the stratification in the collapsed wall of Gardner's excavation was cleared and partially recorded in a new, small grid called Rn 3 (cf. Figure 3.12).

Excavation Ts 1968

The cutting was relocated in 1995 in Square A5 in the excavation of Rn 3 (cf. Figure 3.12) and was found to be approximately 2m long, 0,5m wide and approximately 1,6m deep (cf. Figure 3.3). The upper 60cm of deposit was divided into Layers 1 to 3 and consisted of a mixture of greyish brown fine-grained sand and ash. Layers 4 to 6 consisted of a 40cm thick stratum of white ash, grey to brown sand, charcoal, bone fragments and potsherds. Layers 7 to 12 consisted of a 60cm thick kraal deposit which contained charcoal and fine-grained sand, representing the oldest main stratum of the deposit.

Excavation Ts 3

Ts 3 was a trial excavation in the centre of the central midden on the eastern side of Gardner's Test Trench No 1 of 1935. It initially comprised an area of 9m x 3m, subdivided into squares of 3m x 3m. The first ten layers were excavated within this grid (cf. Figures 3.6 and 3.7). The size was then reduced to a test pit of 2m x 1,50m adjacent to Gardner's test trench, where the remaining Layers 11 to 24 were excavated till rock bottom was reached[6] (cf. Figure 3.8). No human graves or so-called beast burials were found in Ts 3.

Layer 1 was the weathered surface of the deposit, consisting of a grey-brown mixture of loose sand and ash. The layer was removed as an arbitrary level 15cm thick. The cultural contents of the layer included small potsherds and pottery figurines[7].

Layer 2 consisted of grey-brown, very soft, fine-grained, ashy sand. It was removed as an arbitrary level 15cm thick. The household refuse of the layer included a small concentration of stones, bone fragments, potsherds, an unidentified bone tool and slag[8].

Layer 3 was similar to Layer 2, consisting of a loose, grey-brown mixture of sand and ash. The deposit in the layer had been badly disturbed by springhares. The household refuse in the layer also included some metal slag[9].

Layer 4 was a soft, grey-brown mixture of ash and fine-grained sand, and also included small patches of white ash. It too had been disturbed by springhares. The layer slanted downwards in a southerly direction towards Profile A3-B3[10].

Layer 5 consisted alternately of thin, red-brown and light brown layers of soil, and white to light grey layers of ash. It slanted downwards in a southerly direction towards Profile 03-B3 where it thickened to the extent that it had to be subdivided into Layers 5(i) and 5(ii). The cultural material included the remains of pottery figurines[11].

Layer 6 was a deposit which consisted of a grey-brown mixture of sand and ash. A prominent feature of the layer was the exceptionally large concentration of bone fragments, potsherds and stones (cf. Figures 3.4, 3.6 and 3.7). Cultural material also included a bone needle and carbonized grain. The layer slanted downwards towards the south[12]. A radio-carbon date on bone material from Layer 6 was calibrated to 1052 or 1087 or 1150[13] (cf. Appendix 8.9).

Layer 7 consisted mainly of light brown to grey-brown, fine-grained, slightly compacted sandy soil. The layer contained traces of ash, a considerable quantity of charcoal, light yellow granules of mudstone, as well as alternating patches of white ash and thin layers of light brown soil. The layer was penetrated by springhare burrows[14].

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Layer 8 was characterized by alternate thin layers of medium brown to light brown sandy soil and layers of light grey to white ash which contained a lot of charcoal. The layer slanted downwards towards Profile A3-B3, where it was thicker and where it contained a concentration of stones, bone fragments and potsherds. The layer was disturbed by springhare burrows near Profile 03-A3. The cultural contents of the layer included the remains of a pottery figurine, a concentration of potsherds and bone fragments[15].

Layer 9 consisted of alternating layers and patches of light brown sandy soil, grey ashy sand and white ash. The layer contained a lot of charcoal. It slanted downwards towards the south. The cultural contents of the layer included material which appeared to be metal slag, carbonized grain, as well as a concentration of animal skull and jaw fragments and other bone fragments[16].

Layer 10 simply consisted of thin layers and patches of light brown sandy soil and grey-brown, ashy soil, including a concentration of bone fragments and potsherds. It slanted downwards towards the south[17].

Layer 11 was compounded of light brown sandy soil and grey-brown sandy ash, including patches of white ash. The layer also slanted downwards towards the south[18].

Layer 12 was a layer of light brown to grey-brown ashy sand which included patches of ash. The layer thickened towards the top, towards Profile 02/A-02/B. It contained a fair quantity of bone fragments in its base[19].

Layers 13, 14 and 15 consisted of grey to grey-brown ashy sand as well as light brown sand, including pieces of charcoal. A distinctive feature of Layer 15 was the presence of carbonized grain. The base of Layer 15 contained a lot of charcoal and was apparently blackened *in situ* by a fire[20]. One charcoal sample from this layer was dated to 1163 AD[21]. The date from another charcoal sample was variously 1052 or 1087 or 1150[22] (cf. Appendix 8.9).

Layers 17, 18 19, 20 and 21 consisted of light brown to grey-brown ashy sand and also included patches of white and grey ash. These layers were deposited on a more or less horizontal plane. They contained more brown sandy soil and less grey ash than the overlying, slanted layers. The patches of ash also appeared to be less prominent in Layers 17 to 21 than those in the overlying layers. Layers 20 and 21 contained a conspicuous quantity of bone fragments and potsherds[23].

Layers 22 and 23 constituted the lowest and oldest deposit in the stratification. They were distinctive, dark-coloured layers of soil which appeared to be less sandy and to contain fine, organic material. These layers were thought to be part of the periphery of the adjacent kraal deposit[24].

Layer 24 was the surface of a sterile, compacted light brown deposit of sand which was approximately 50cm thick and which covered the underlying, white rock bottom[25]. Charcoal from this layer was dated to 1163 AD[26] (cf. Appendix 8.9).

The stratification of the central midden in Excavation TS 3 may be divided into three components or phases. These are, in chronological order, the oldest phase, consisting of a dark brown deposit which might be related to the nearby animal kraal deposit; a second phase, consisting of the more or less horizontal Layers 17 to 21, which contain considerable quantities of light brown sand, ash and household refuse; and a third, younger phase, consisting of Layers 1 to 16 which contained light brown sand and more ash than the previous, underlying phases. The black, burnt material in the base of Layer 15 and Layer 16 seemed to be the beginning of the third phase, during which the midden was apparently more intensively used as a household refuse dump. The mudstone gravel in Layer 7 might be material swept from a nearby living or hut floor.

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Figure 3.4[27]
Excavating Layer 6 in Test Trench Ts 3.

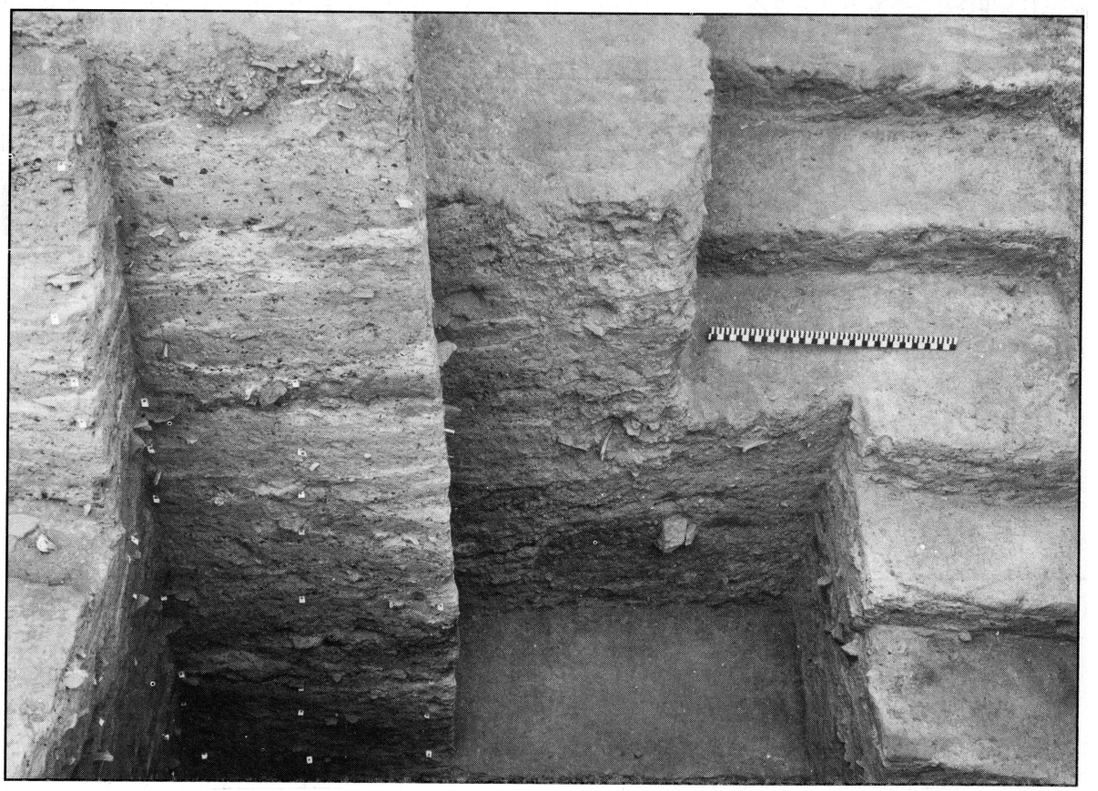

Figure 3.5[28]
Excavation Ts 3. A view of the midden deposits in Square 02 (cf. also Figure 3.8). To the left, the original midden stratification is visible in Profile 02/C-02/D of Ts 3. To the right, the excavation steps were cut into the disturbed deposit material in Gardner's Test Trench 1 of 1935.

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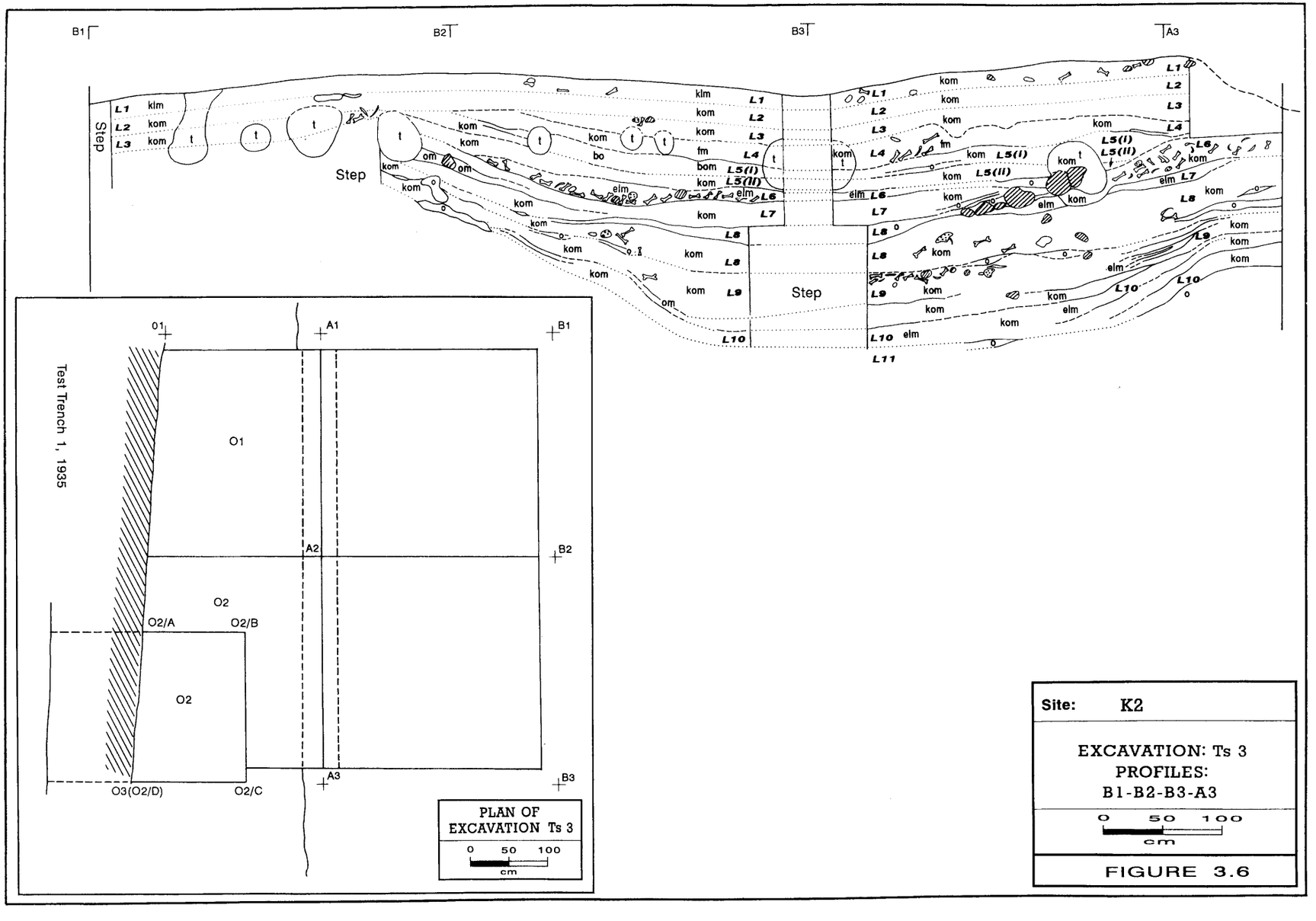

FIGURE 3.6

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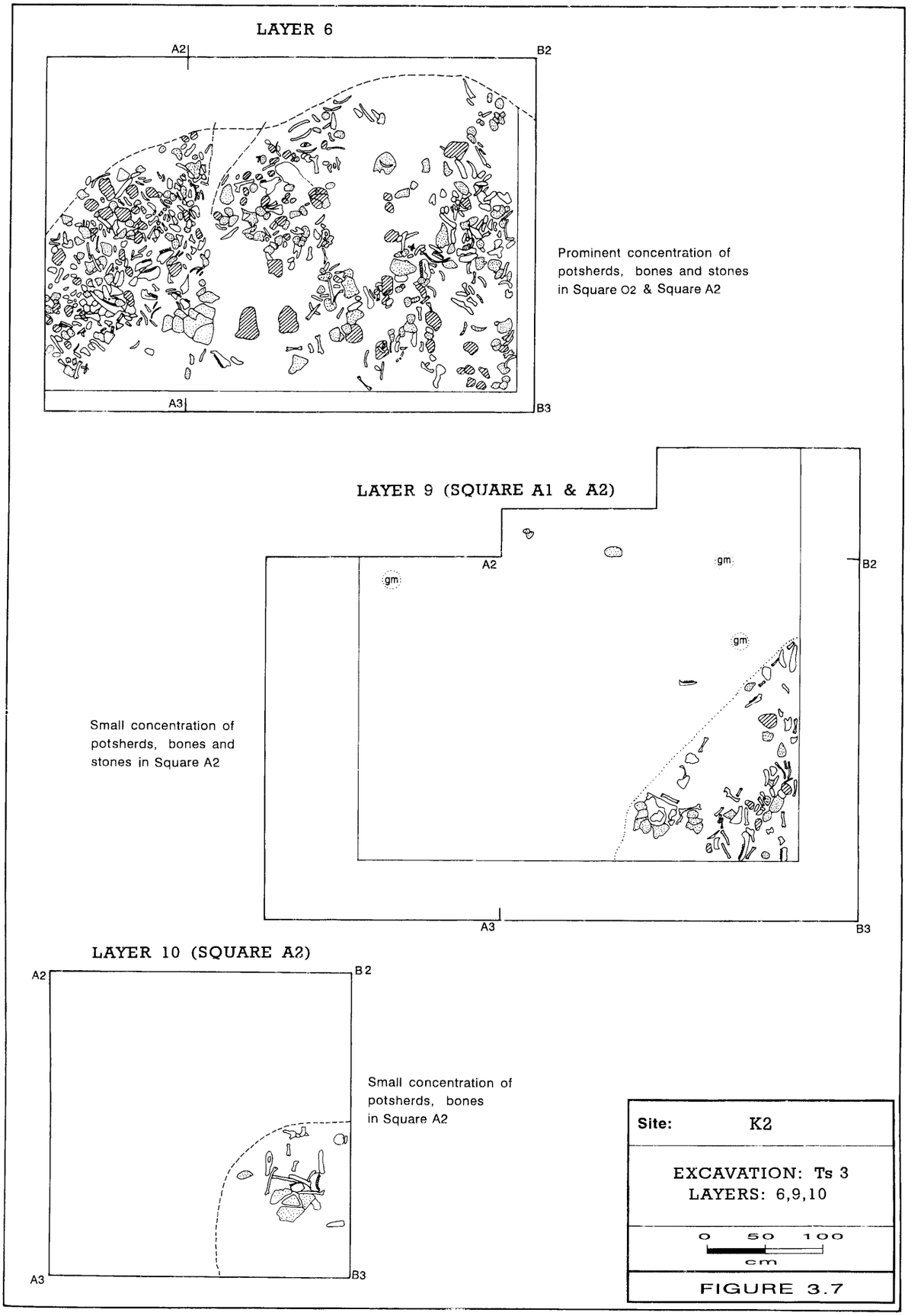

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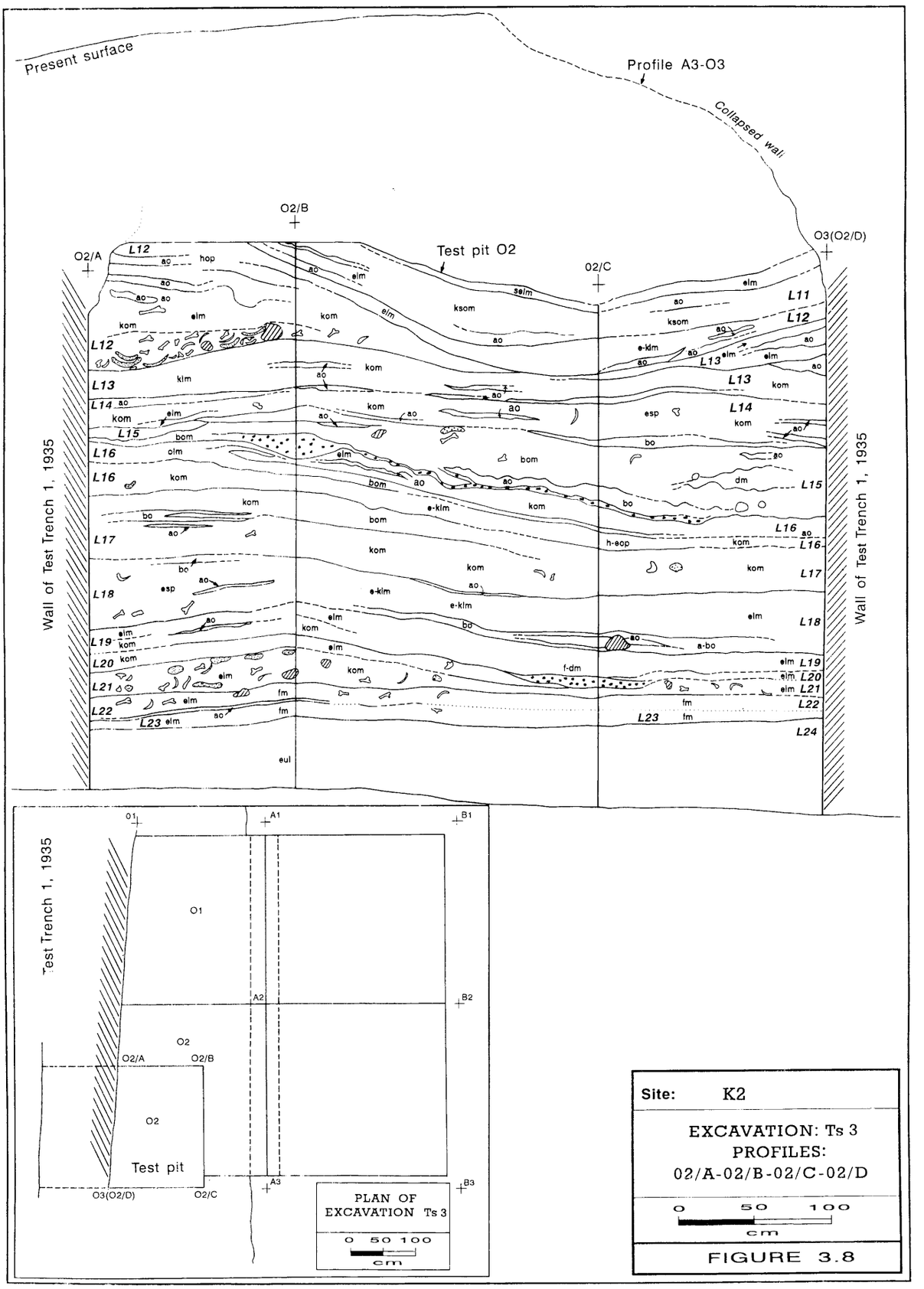

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Excavation Rn 3

Excavation Rn 3 was initiated during 1995 in the collapsed wall of Gardner's Block 5 to obtain detailed information on the stratigraphy of the central kraal and central midden, to study the stratified context of the numerous human skeletons found by Gardner in that part of the site and, if possible, to obtain skeletal material which could be carefully recorded *in situ* (cf. Figure 3.2).

Excavation Rn 3 is 30m x 6m in extent and is subdivided into squares of 3m x 3m (cf. Figure 3.12). Squares B8 and B9 in Rn 3 have been partially excavated, and this excavation will be continued later. In Squares A2 and A3, a shallow vertical cut was made into the collapsed wall of Gardner's excavation and was recorded as Profile B4-B2/1 (cf. Figure 3.12). The collapsed wall of Gardner's excavation was partially cleared to study the midden and kraal deposits and to recover cultural material. The test pit made by Eloff in 1968, now referred to as Ts 1968, was found in Square A5 of Rn 3 (cf. Figure 3.12).

In Squares B8 and B9, the western perimeters of the central midden and central kraal were observed. Traces of gravel floors, apparently belonging to the western peripheral settlement area, were found adjacent to the midden deposit. A human skull and mandible were found in the midden deposit, but no trace of a normal burial nor the rest of a human skeleton could be found. In Squares B8 and B9, Layers 1 and 2 consisted of a grey-brown mixture of ash and sand and contained concentrations of bone fragments and potsherds. The human skull was found in this deposit in Square B8 (cf. Figure 3.11). In Square B9, the lower Layers 3 to 6 also contained a mixture of ash, sand and bone fragments. In Square B8, the perimeter of a deposit, which is interpreted as the western perimeter of the kraal deposits, was observed underneath Layer 2 and was recorded as Profile B9/1-B8 in the collapsed wall of Gardner's

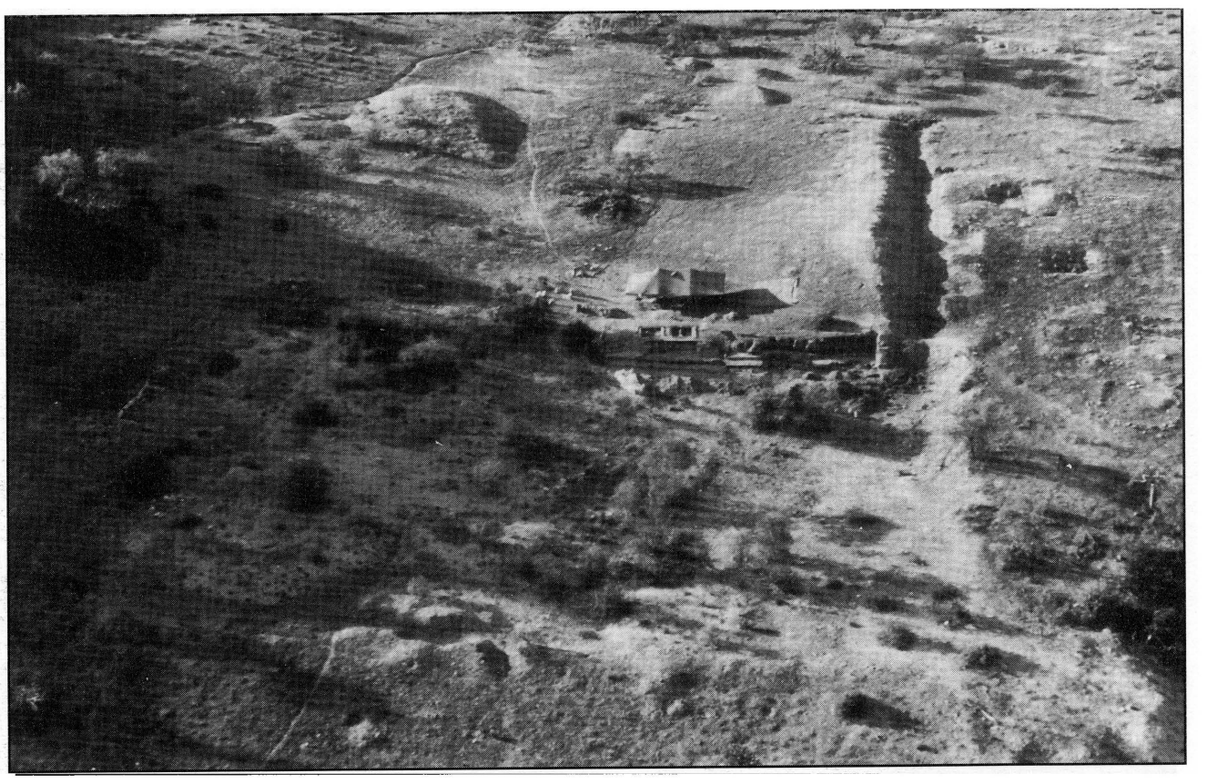

Figure 3.9[29]
An aerial view of K2 from the south and Excavation Rn 3 in progress during April 1995 (cf. also Figures 3.2 and 3.12).

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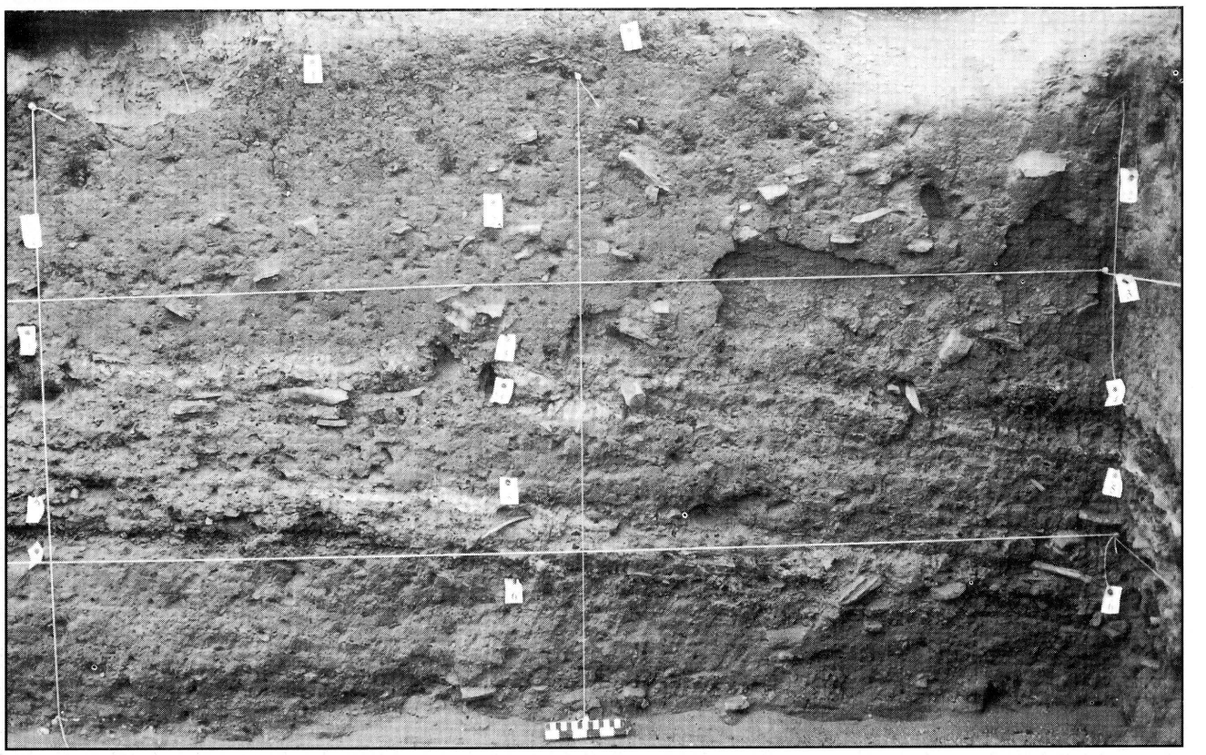

Figure 3.10[30]
Excavation Rn 3. A view of Profiles B3-B2/1. The stratification of the central midden is visible above the deposit of the central kraal (cf. also Figure 3.12).

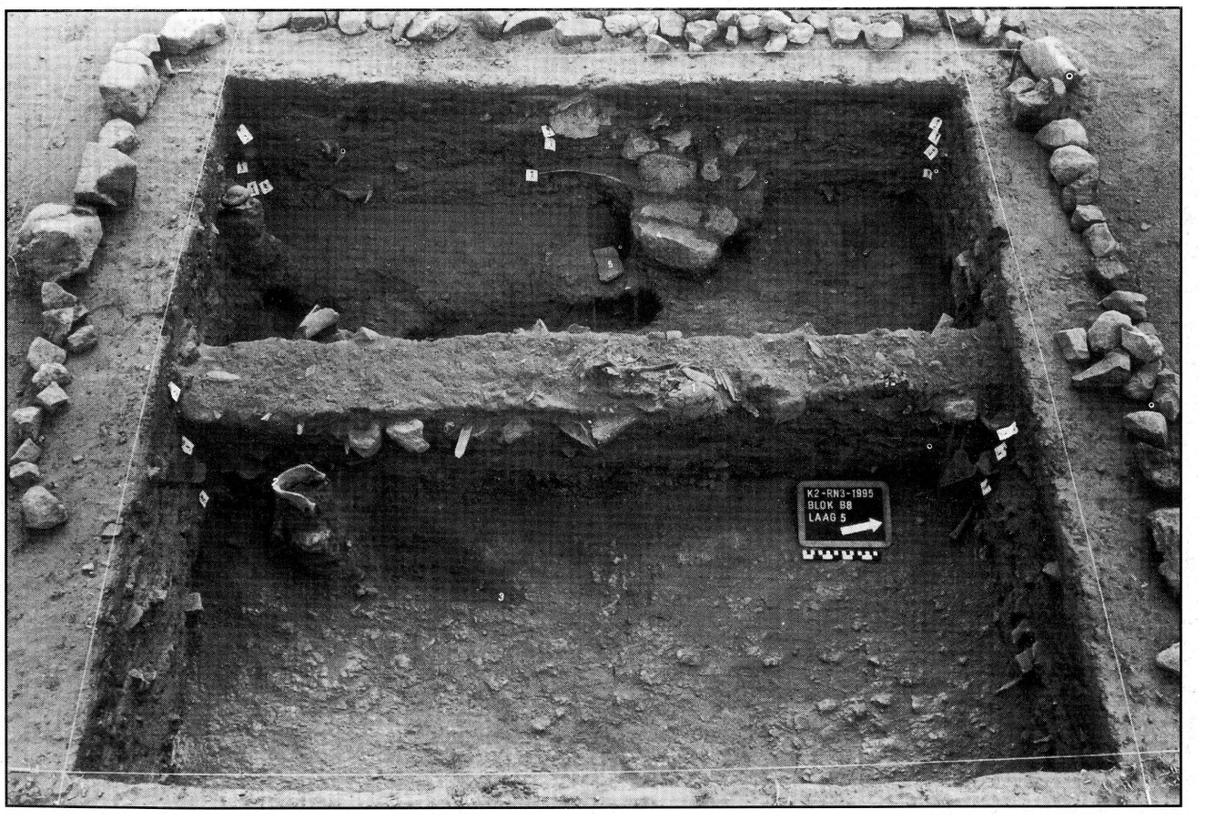

Figure 3.11[31]
Excavation Rn 3, Square B8, Layer 3, with a human skull and mandible *in situ* (cf. also Figure 3.12).

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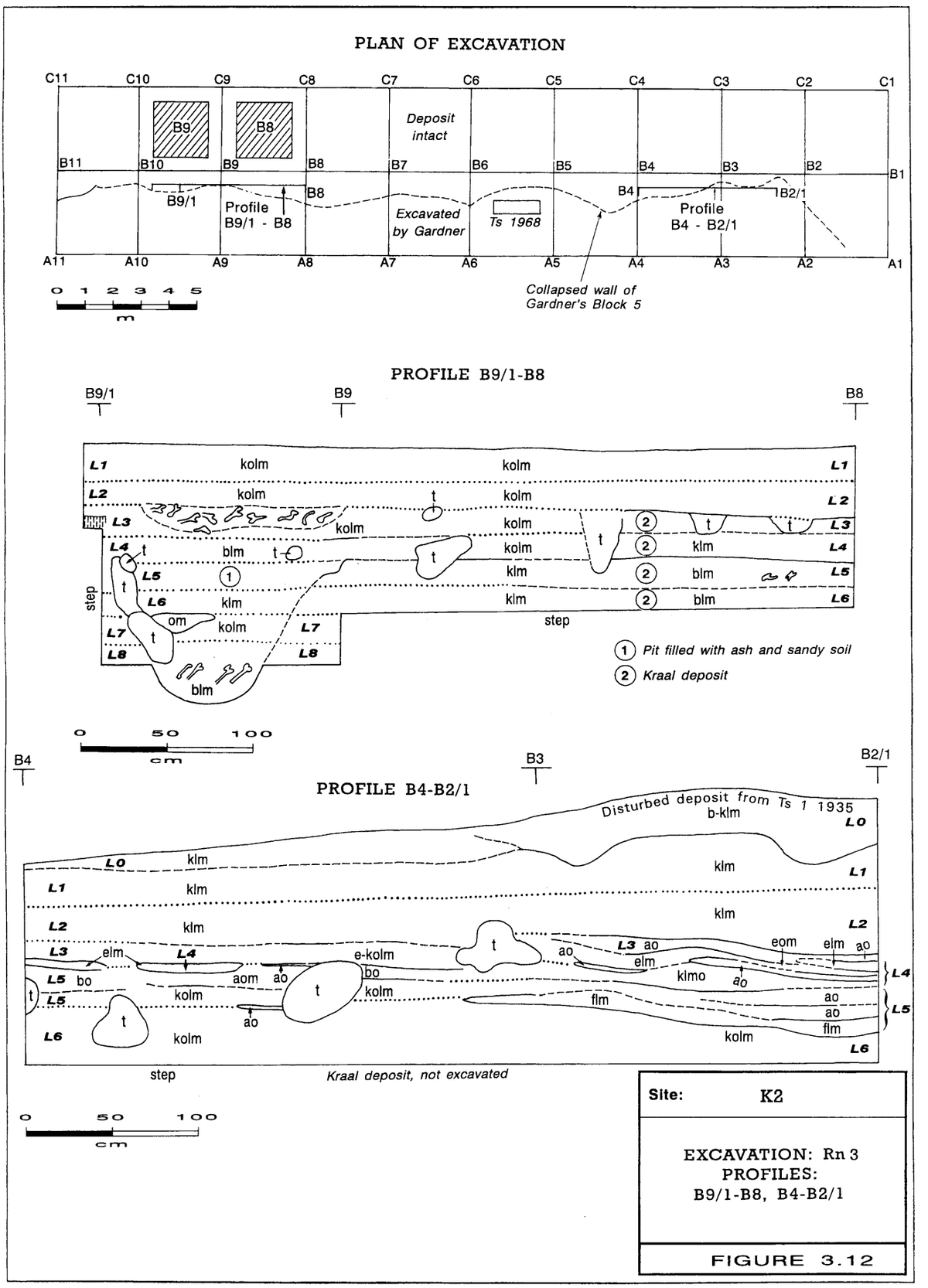

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excavation (cf. Figure 3.12). A man-made pit, filled with ashy soil and a number of bone fragments, was observed in Profile B9/1-B9 (cf. Figure 3.12).

In Squares A2 and A3, the midden deposit above the kraal deposit in the collapsed wall of Gardner's excavation was divided into six layers (cf. Figure 3.12). Layers 1 and 2 consisted of a grey-brown mixture of ash and sand. Layers 3 to 6 varied from grey-brown ash and sand to dark brown soil and patches of grey to white ash. Underneath this midden deposit the kraal deposit referred to by Gardner was observed but not removed. This kraal deposit needs to be investigated further.

Several calibrated radiocarbon dates on charcoal are available for Ts 1968 (referred to as Tg 1968 in Appendix 8.9) in Square A5 in Rn 3. Layer 11 in Ts 1968 was dated to 1173 AD (Pta 0307), the date for Layer 8 is 1243 AD (Pta 0306), the age of Layer 6 is 1213 AD (Pta 0305) and Layer 3 was dated to 1220 AD (Pta 0304).

The central homestead area

General aspects of the central homestead area

According to Gardner, the living quarters of the K2 community consisted of light shelters erected on natural gravel surfaces around the central kraal and central midden[32]. Evidence to the contrary was provided by stratigraphic evidence in Excavations Rn 2 and Ts 3, in which the remains of numerous man-made open air gravel floors and huts with floors made of gravel or sand and walls made of poles and clay were exposed in clearly stratified deposits in the central homestead area on the eastern side of the central kraal and central midden.

A close inspection of the profiles of Gardner's Trial Pits 1 and 10 also proved the presence of a succession of gravel floors and patches of burnt wall clay in the centre of the settlement. The remains of various sizes of huts with walls made of wooden poles and sandy clay, and floors made of compacted gravel or sand, were recorded in almost every living horizon in the stratigraphic sequence in Excavations Rn 2 and Ts 4 in the central site deposits to the east of the central midden[33].

Excavation Rn 2

Gardner's Trial Pit 10 of 1935 was selected as the focal point for the identification of stratified household structures (cf. Figure 3.15). Excavation Rn 2 was laid out as a small grid of 33m x 15m, subdivided into 3m x 3m squares, adjacent to Pit 10. Initially, a series of small test trenches within Rn 2 were excavated to find the remains of as many floors and hut walls as possible. Wherever these remains were discovered, test trenches were then expanded to expose these structures completely (cf. Figures 3.15 and 3.17). Consequently, the squares were only partially excavated. The debris of several burnt huts and layers containing gravel floors associated with K2 pottery represents various phases of settlement in the stratified deposits[34] (cf. Figures 3.14 to 3.20).

Layer 1 was the weathered surface of the deposit and consisted of light brown, sandy soil and contained relatively little cultural material[35].

Layer 2 was mostly a prominent horizon of red mudstone gravel and light brown sand (cf. Figure 3.16). The mudstone gravel was interpreted as the remains of disintegrating human-made floors in the upper layers of the settlement deposit. The exact stratified contexts, dimensions and plan-forms of these floors are still unknown. In Squares D10 and E10, the

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deposits consisted of a mixture of ash, sand and household refuse[36]. The remains of hut features may be reconstructed as an external gravel floor in Squares B4, C3, C4, and adjoining squares next to Gardner's Trial Pit 10[37] (cf. Figure 3.16), as a vaguely visible outer wall foundation consisting of a trench with a width of 5 cm and the remains of 13 wall posts[38] which were 3cm to 5cm thick, and what appear to be hut floor remains[39]. The probable rubbish pit[40] which penetrated the floor in Square C3 could have belonged to a later period towards the end of the site chronology.

Layer 3 consisted mainly of light brown sandy soil which included patches of red mudstone gravel in Squares C3 and C4; grey to grey-brown, ashy soil which included household refuse in Square 10; and the remains of gravel floors and hut wall remains in Squares A9, B8, C8, D8, D9 and the adjoining squares[41].

In Square A9 in Layer 3, the remains of a hut consisted of burnt wall clay[42] on a hut floor made of red mudstone gravel[43] and the remains of thin wall posts[44] which were 4cm to 5cm thick (cf. Figure 3.18(1) to (4)).

In Square B8, the remains of a hut in Layer 3(i) (Figures 3.14, 3.20 (1) to (2)), overlaid the burnt remains of a second hut in Layer 3(ii) (cf. Figure 3.20 (3) to (4)). The hut remains in Layer 3(i) consisted of burnt wall debris[45] overlying a badly broken hut floor[46] and the charred remains of wall posts[47] which were 4cm to 5cm thick (cf. Figure 3.15).



Figure 3.13[59]

An unusual stone feature, probably a large mortar stone, in an old excavation which is assumed to be Gardner's Pit 9. Scale of centimetres and inches.

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In Layer 3(ii) in Square B8 (Figure 3.20 (3) to (4)), the remains of the second hut consisted of burnt wall clay[48] on a thin hut floor made of compacted sand[49], and thin wall posts[50] which were 3cm thick.

In Square D8 in Layer 3, the barely recognisable remains of a burnt hut consisted of burnt wall clay[51], a thin floor made of compacted sand[52] overlying another floor made of compacted yellow-white mudstone gravel, and charred wall posts [53] which were 3cm thick (cf. Figures 3.19 (1) to (2) and 3.15).

In Square D10 in Layer 3, the badly preserved remains of a hut consisted of burnt wall clay[54] and the remains of wall posts[55] which were approximately 3cm thick (cf. Figure 3.19 (3) to (5)). The poorly preserved remains of an elephant tusk[56] were found close to these hut remains.

Layer 4 was not excavated and was identified in the profiles of small test trenches. The layer appeared to consist of burnt wall clay and floors made of red and light yellow or white mudstone gravel[57].

The oldest and lowest settlement surface was represented by Layer 5, which was only investigated in the profiles of small test trenches. The layer appeared to consist of red-brown, sandy soil and inclusions of ash, charcoal and floors made of red mudstone gravel[58].

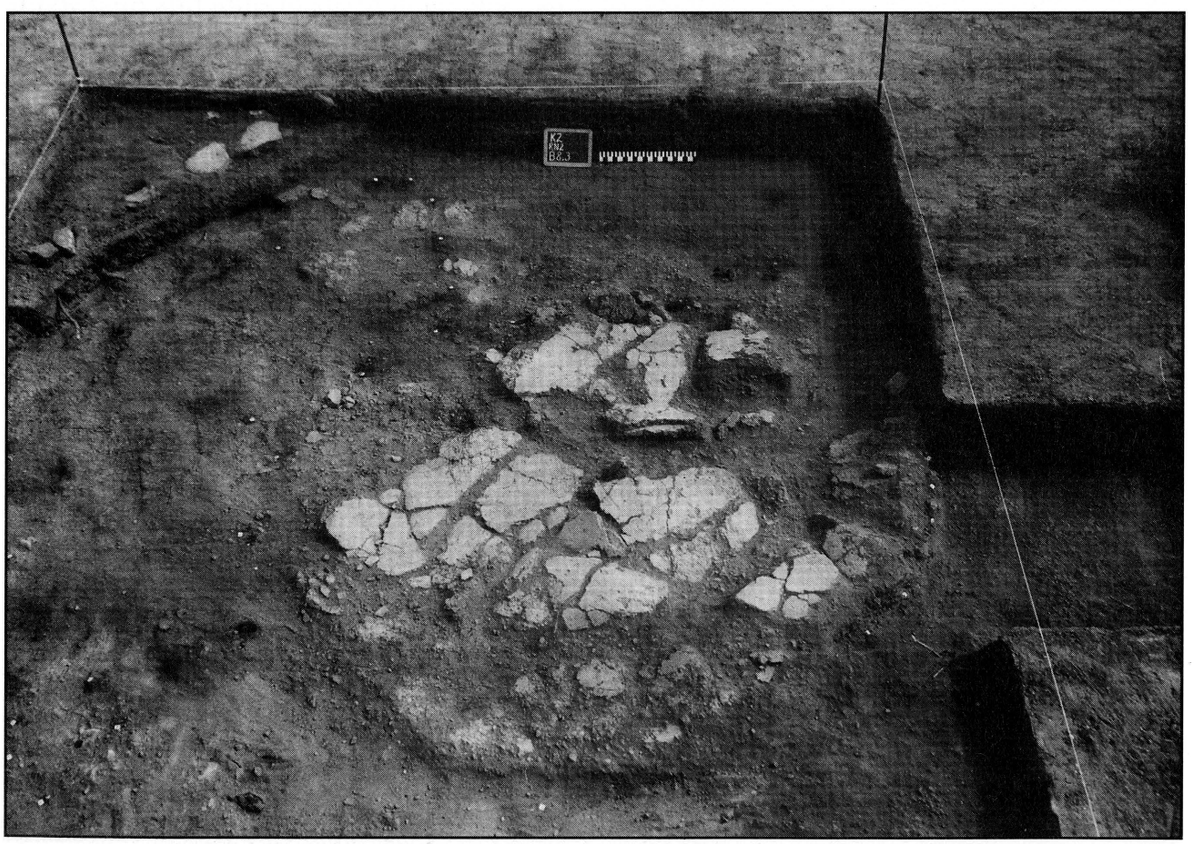

Figure 3.14[60]
Excavation Rn 2, Square B8. Feature B8.3(i).2 was interpreted as the broken floor of a burnt hut in Square B8 (cf. also Figure 3.20).

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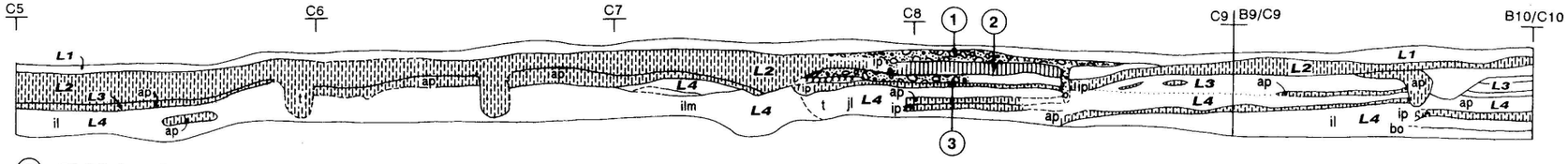
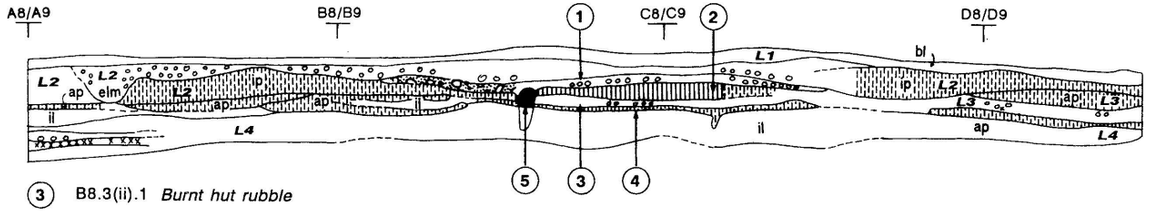


(1) B8.3(i).1 *Burnt hut rubble*

(2) B8.3(i).2 *Burnt gravel floor*

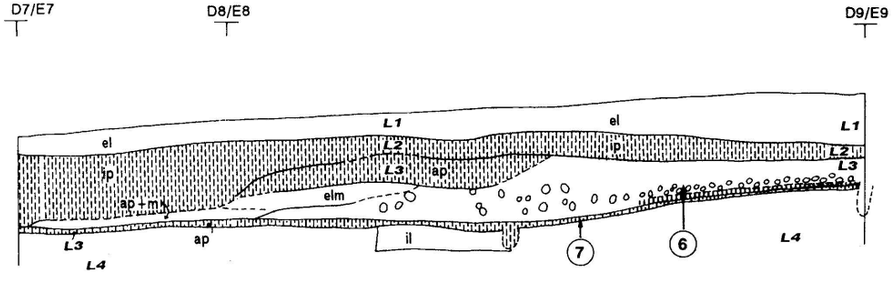
(3) B8.3(ii).1 *Burnt hut rubble*



(3) B8.3(ii).1 *Burnt hut rubble*

(4) B8.3(ii).2 *Sand floor*

(5) B8.3(ii).3 *Charred wooden posts*



(6) D8.3.1. *Burnt hut rubble*

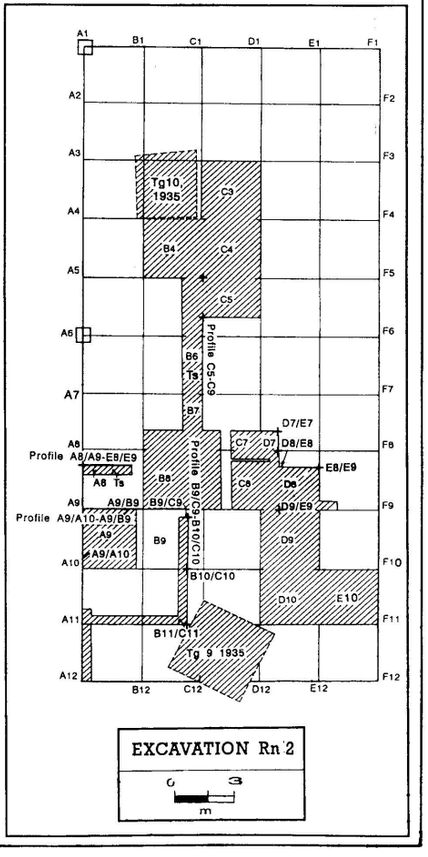
(7) D8.3.4. *Light coloured gravel floor*

Site: K2

EXCAVATION: Rn 2
PROFILES: C5-B10/C10,
A8/A9-D8/D9,
D7/E7-D9/E9

0 200
cm

FIGURE 3.15



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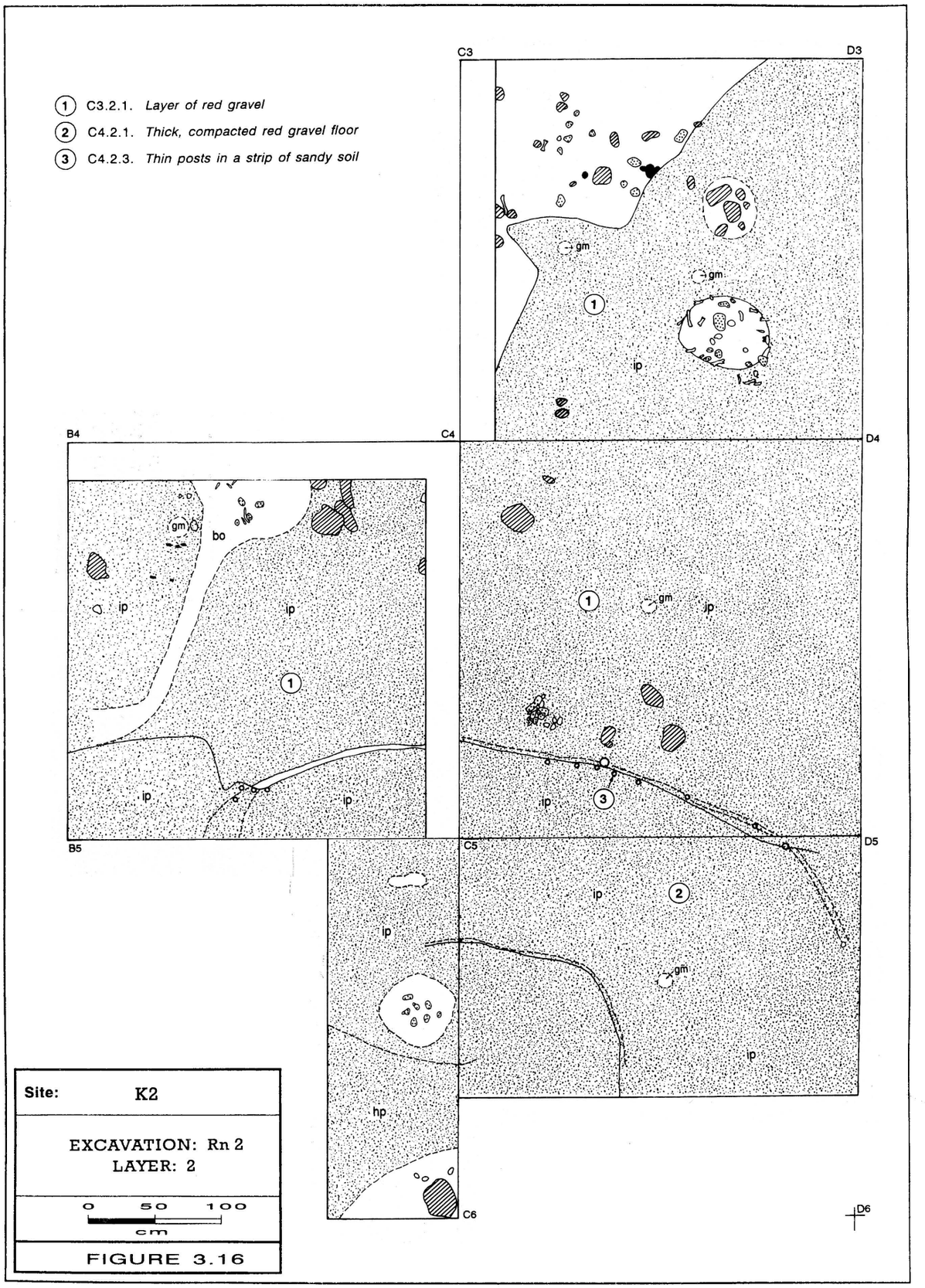

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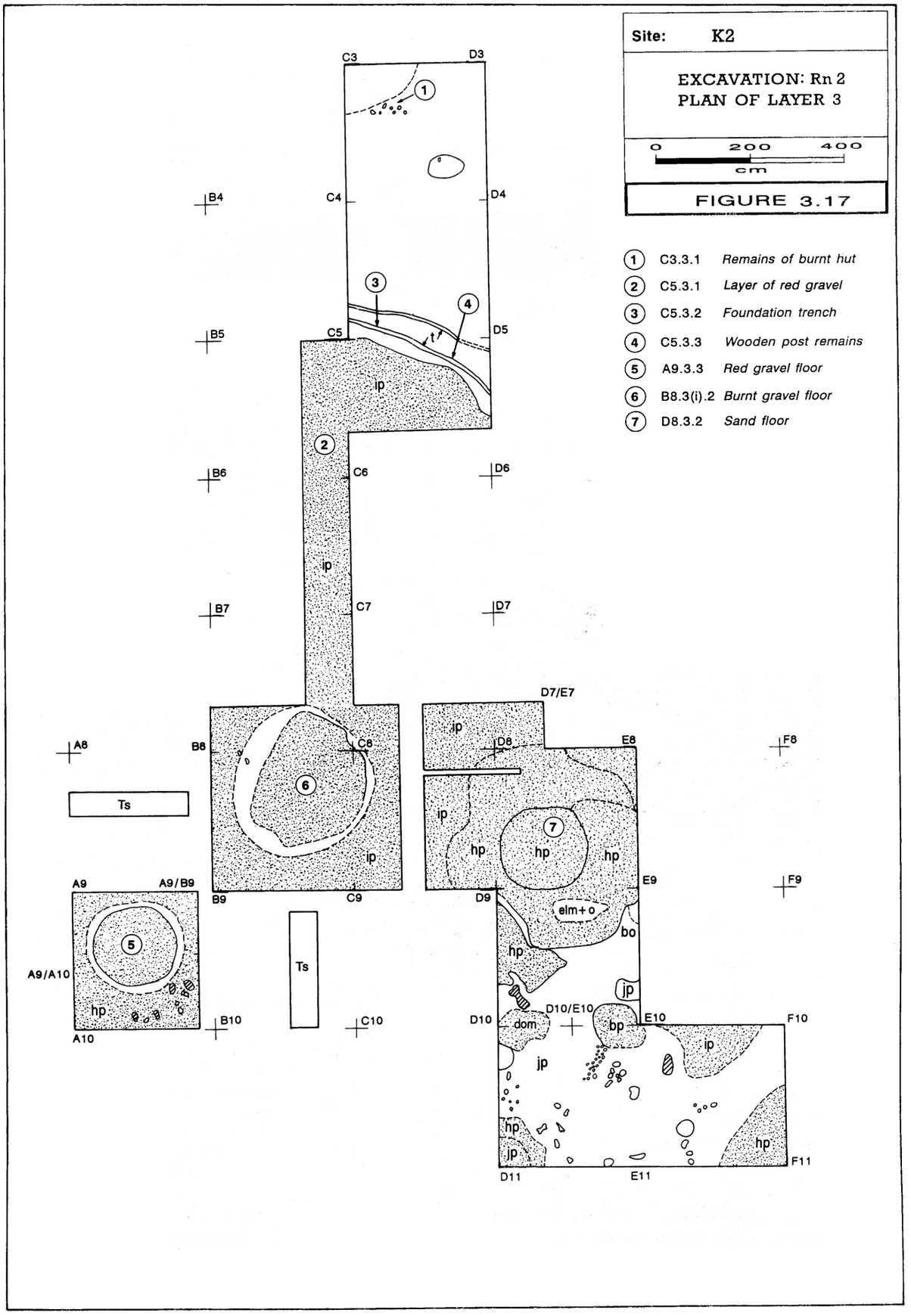

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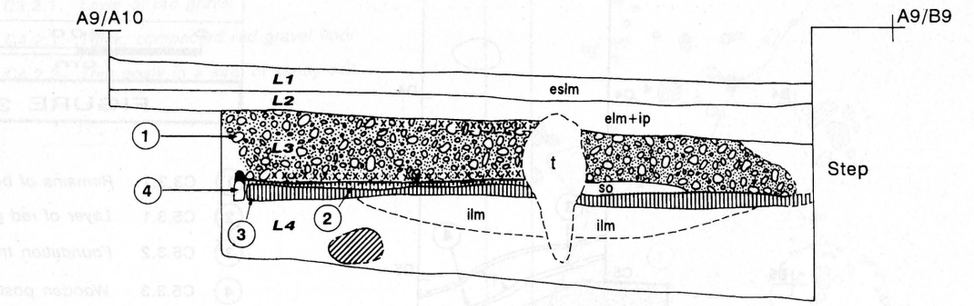

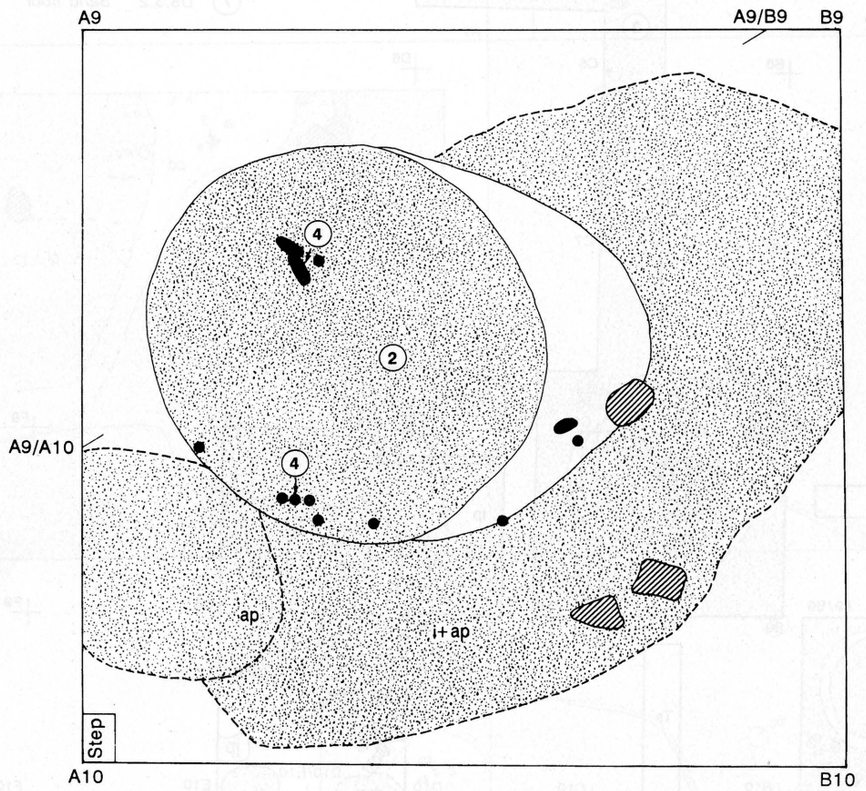

1	A9.3.1	*Burnt hut rubble*
2	A9.3.3	*Red gravel floor*
3	A9.3.4	*Red gravel floor*
4	A9.3.2	*Charred wooden posts*

Site: K2

EXCAVATION: Rn 2
SQUARE: A9
LAYER: 3

0 50 100
cm

FIGURE 3.18

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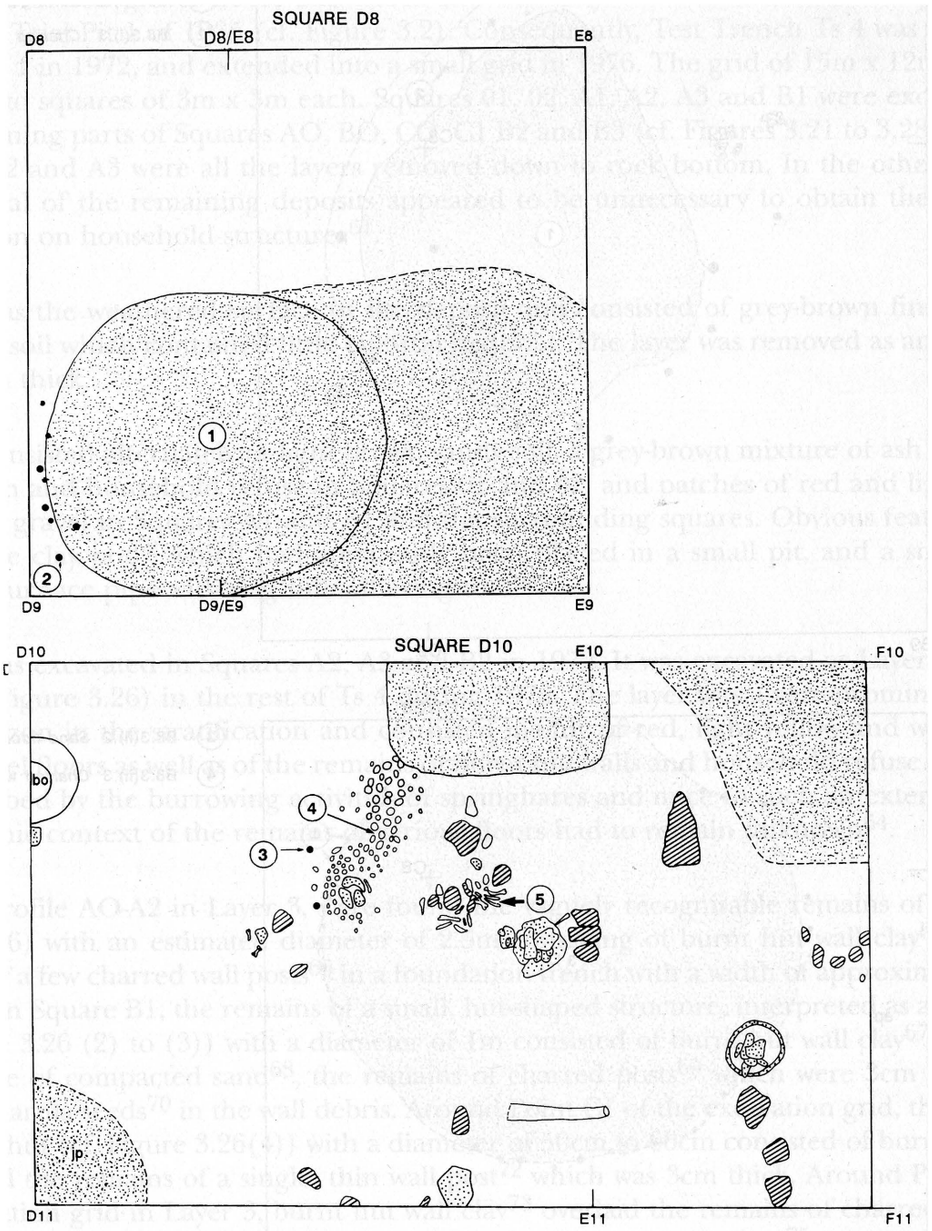

(1) D8.3.2 *Sand floor*
(2) D8.3.3 *Charred wooden posts*
(3) D10.3.2 *Charred wooden posts*
(4) D10.3.6 *Burnt hut rubble*
(5) D10.3.3 *Potsherds, bones, stones*

Site: K2
EXCAVATION: Rn 2 SQUARES: D8-E8 & D10-E10 LAYER: 3
0 50 100 cm
FIGURE 3.19

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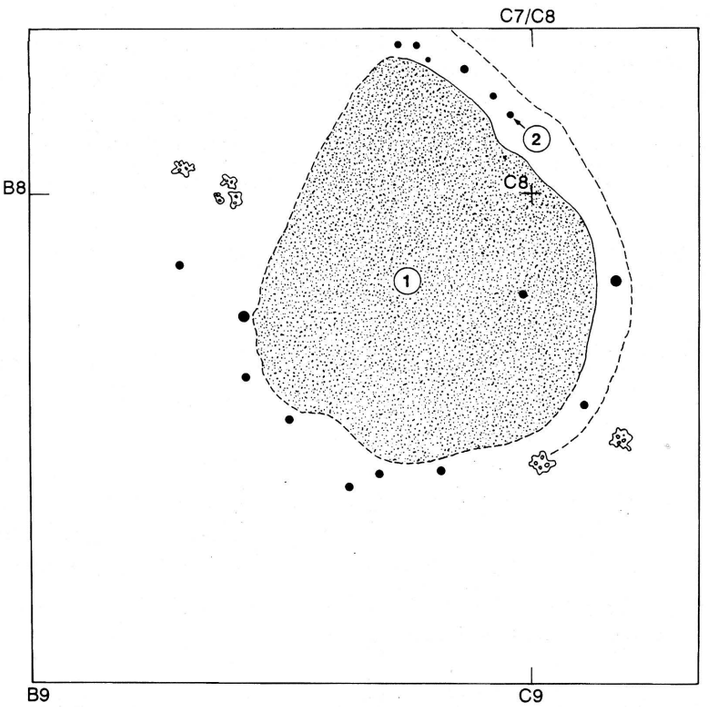
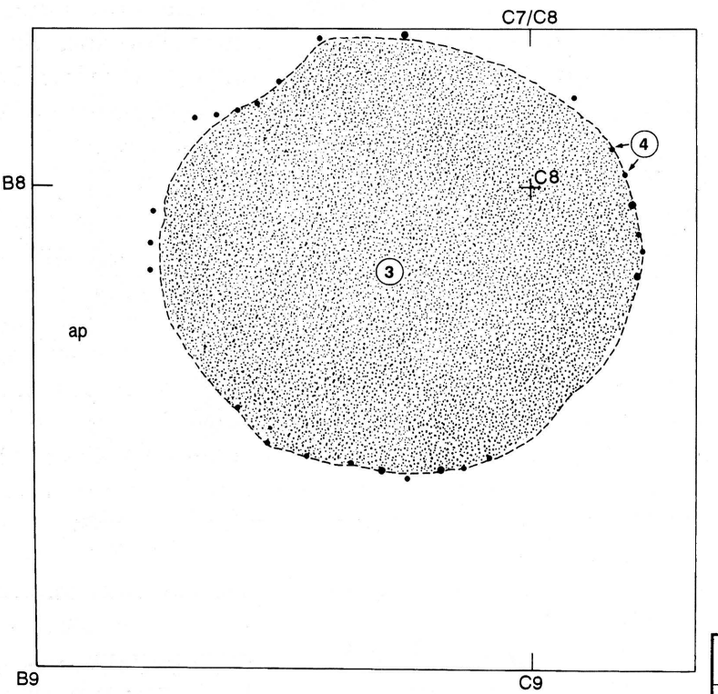


(1) B8.3(i).2 *Burnt gravel floor*
(2) B8.3(i).3 *Charred wooden posts*



(3) B8.3(ii).2 *Sand floor*
(4) B8.3(ii).3 *Charred wooden posts*

Site: K2

EXCAVATION: Rn 2
SQUARES: B7-B8-C8
LAYERS: 3(i) AND 3(ii)

0 50 100
cm

FIGURE 3.20

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Excavation Ts 4

Indications of red gravel floors and burnt hut wall clay were identified in the profiles of Gardner's Trial Pit 1 of 1935 (cf. Figure 3.2). Consequently, Test Trench Ts 4 was excavated next to Pit 1 in 1972, and extended into a small grid in 1976. The grid of 15m x 12m was subdivided into squares of 3m x 3m each. Squares 01, 02, A1, A2, A3 and B1 were excavated, as were adjoining parts of Squares AO, BO, CO, C1 B2 and B3 (cf. Figures 3.21 to 3.28). Only in Squares A2 and A3 were all the layers removed down to rock bottom. In the other squares, the removal of the remaining deposits appeared to be unnecessary to obtain the required information on household structures[61].

Layer 1 was the weathered surface of the deposit and consisted of grey-brown fine-grained, soft sandy soil which contained little cultural material. The layer was removed as an arbitrary level 15cm thick.

Layer 2 consisted alternately of light brown sandy soil, a grey-brown mixture of ash and sand, a lot of ash and household refuse in Squares 01 and 02; and patches of red and light yellow mudstone gravel in Squares A1 and B1 and the surrounding squares. Obvious features were a complete clay pot[62] which had apparently been placed in a small pit, and a smelting or smithing furnace pipe with slag still adhering to it[63].

Layer 3 was excavated in Squares A2, A3 and B2 in 1972. It was excavated as Layers 3(i) and 3(ii) (cf. Figure 3.26) in the rest of Ts 4 during 1976. The layer was a very prominent settlement horizon in the stratification and consisted mainly of red, light yellow and white mudstone gravel floors as well as of the remains of burnt hut walls and household refuse. The layer was disturbed by the burrowing activities of springhares and mice to such an extent that the stratigraphic context of the remains of various floors had to remain unknown[64].

Around Profile AO-A2 in Layer 3, were found the vaguely recognisable remains of a hut (cf. Figure 3.26) with an estimated diameter of 2.5m consisting of burnt hut wall clay[65] and the remains of a few charred wall posts[66] in a foundation trench with a width of approximetely 5cm to 10cm. In Square B1, the remains of a small, hut-shaped structure, interpreted as a grain hut (cf. Figure 3.26 (2) to (3)) with a diameter of 1m consisted of burnt hut wall clay[67] on a thin floor made of compacted sand[68], the remains of charred posts[69] which were 3cm thick, and charred marula seeds[70] in the wall debris. Around Point C1 of the excavation grid, the remains of a small hut (cf. Figure 3.26(4)) with a diameter of 50cm to 60cm consisted of burnt hut wall clay[71], and the remains of a single, thin wall post[72] which was 3cm thick. Around Point B3 of the excavation grid in Layer 3, burnt hut wall clay[73] overlaid the remains of charred, hut wall posts[74] which were 2cm to 3cm thick, and a yellow mudstone gravel floor[75] (cf. Figure 3.26 (5) and (6)). In Square A3, the wall foundation trench[76] of another hut with a diameter of approximately 2m penetrated a ground floor (cf. Figure 3.26(7)), apparently from an overlying living surface. The remains of another small hut, which is mostly in Square A4 and has therefore not been excavated as yet, was visible around Point A4 of the excavation grid, and consisted of burnt hut wall clay[77], a mudstone gravel floor[78], and the remains of thin wall posts[79].

Layer 3(iii) was excavated as Layer 4 in Squares A2, A3 and B2 in 1972. It was excavated as Layer 3(iii) in the rest of TS 4 during 1976. The layer had been damaged by springhares and consisted mainly of the remains of thick, red mudstone gravel floors in Squares AO, BO, O1 and O2, and a sandy deposit which contained patches of red gravel, ash and bone fragments elsewhere in the excavated part of Ts 4. Layer 4 appeared to be part of a habitation surface deposit related to Layer 3[80]. Two pottery vessels were found and left *in situ*[81].

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Layer 3(iv) (cf. Figure 3.27) was excavated as Layer 5 in Squares A2, A3 and B2 in 1972. It was also excavated as Layer 3(iv) elsewhere in Ts 4 in 1976. As a result of damage caused by spring-hares, the stratified contexts of various features such as patches of gravel floors remained uncertain. The layer consisted mainly of open air gravel floors and the remains of hut floors. In Square AO, a light yellow or white mudstone gravel floor[82] could either have been an open air living floor around a hut, or a hut floor. In Square BO, a hard floor made of compacted light yellow mudstone gravel[83] could have been a hut floor (cf. Figure 3.27 (1) to (3)). In Squares 01, 02, A1 and A2 the remains of a double walled hut[84] (cf. Figures 3.21 and 3.27 (4) to (8)) clearly consisted of an inner floor[85] made of white mudstone gravel, surrounded by an inner wall foundation consisting of a trench with a diameter of 4cm to 15cm wide and wall posts[86] which were approximately 5cm thick, surrounded by an outer floor[87] made of white mudstone gravel and a surrounding outer wall consisting of a trench with a width of 5cm to 10cm, wall post holes which were 3cm to 5cm wide[88] and a stepped entrance. The diameter of the inner room was approximately 2m and the diameter of the hut as a whole about 3.50m to 3.70m. This hut was surrounded by the remains of an external mudstone gravel floor[89]. Traces of at least two small hut foundations[90] were present in Squares A3 and A4.

Layer 4 was excavated as Layer 6 in Squares A2, A3 and B2 in 1972. The layer was excavated as Layer 4 in the other squares in 1976 (cf. Figure 3.28). The layer consisted mainly of the remains of at least 4 burnt huts. Considerable damage to the layer had been caused by spring-hares. In the excavated part of Square AO, the partial remains of a small structure interpreted as a grain hut (cf. Figure 3.28(8)) with an estimated diameter of 60cm to 70cm consisted of burnt wall clay[91] which also contained a considerable quantity of charred bean or cow pea seeds[92] and wall posts[93] which were 2cm to 8cm thick. In the excavated part of Square BO, the partial remains of a possible hut (cf. Figure 3.28(1) to (4)) with a diameter of 3m consisted of burnt wall clay[94], charred outer wall posts[95] which were approximately 3cm to 5cm thick, the foundation trench of an inner wall[96] and patches of floor made of red and light yellow mudstone gravel[97]. In Squares A1-B1 at Profile A1-B1, the fairly well preserved remains of a small hut (cf. Figure 3.28(5) to (7)) with a diameter of 65cm consisted of burnt wall clay[98] which contained charred bean or cow pea and grain seeds, charred wall posts[99] which were 3cm to 4cm thick and a thin floor[100], and a surrounding, stepped external floor[101] made of light yellow to white coarse mudstone gravel. At Point A2 in Squares 01, 02, A1 and A2, there appears to be a hut (cf. Figure 3.28(9) to (10)) with an estimated diameter of 3m which consisted of burnt hut wall clay[102], charred wall posts[103] which were 3cm to 4cm thick and a portion of a floor[104]. In Square A3 the remains of a small structure, interpreted as a grain hut (cf. Figure 3.28(11) to (13)) with a diameter of 70cm, consisted of burnt hut wall clay[105] which also contained charred grain seeds[106], charred wall posts[107] which were 2cm to 3cm thick, a surrounding floor[108] made of coarse, red mudstone gravel, and a low, curved wall or bench[109] made of compacted sandy clay on the outer perimeter of the gravel floor. A radiocarbon date on bone material in Layer 4 was calibrated to 1180 AD[110] (cf. Appendix 8.9).

Layer 5 was excavated as Layer 7 in Squares A2, A3 and B2 in 1972. It was excavated as Layer 5 in the other squares in 1976. A few patches of red mudstone gravel were present in the layer. The layer also consisted of light brown sandy soil as well as grey-brown ashy sand which contained potsherds and bone fragments. The base of the layer contained a few bones and potsherds, overlying the surface of the rock bottom[111].

Grave Ts 5.G1[112] (cf. Figures 3.26, 3.29 and 3.30) was initially identified as a disturbance which penetrated through a red mudstone gravel floor in Layer 3(ii). The grave appeared to be related to Layer 1 or Layer 2. It was the grave of a small child which had been buried in a flexed position on its right side, facing towards the south or southwest. Ostrich eggshell beads decorated both knees and the pelvis of the skeleton.

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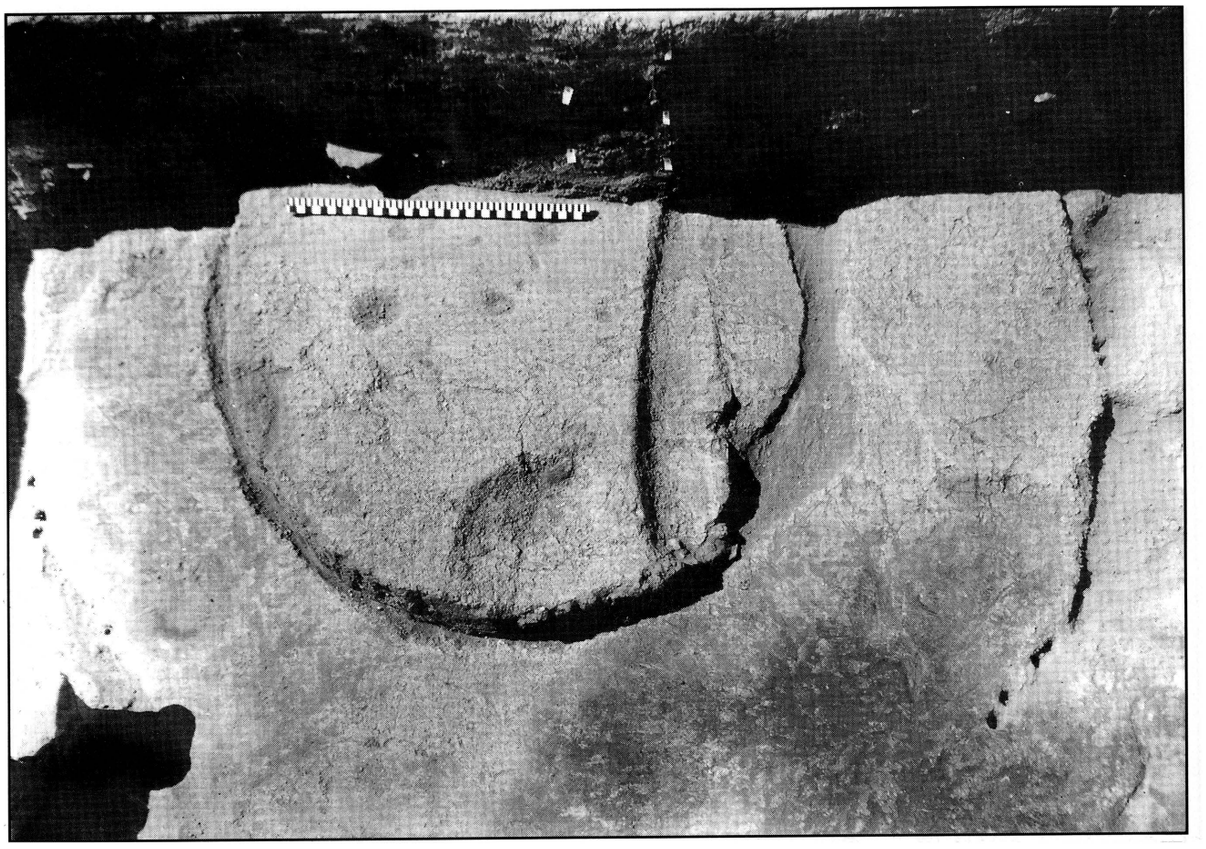

Figure 3.21[113]
Excavation Ts 4, Square 01. Features 01.3(iv).1-5: Floor and wall base remains of a large hut (cf. also Figure 3.27).

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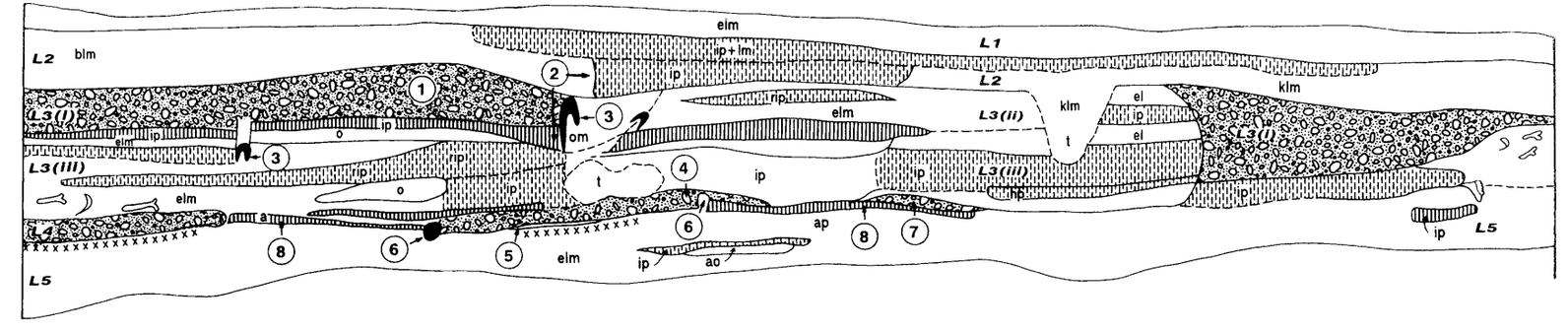

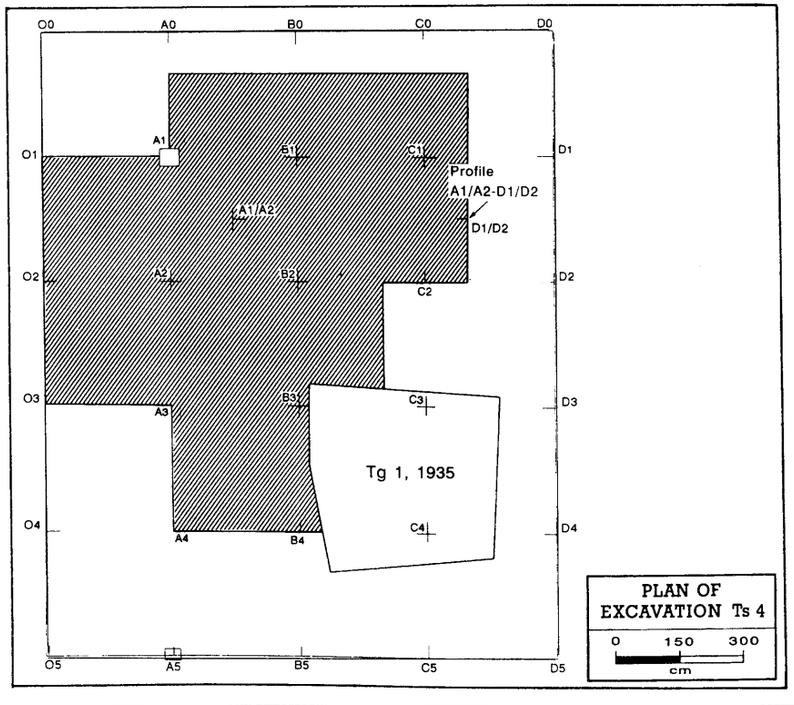

1. A0.3(i).1 *Burnt hut rubble*
2. *Hut floor*
3. *Hut wall posts*
4. A1.4.1 *Burnt hut rubble*
5. A1.4.3 *Sand hut floor*
6. A1.4.2 *Charred hut wall posts, wall trench*
7. B0.4.1 *Burnt hut rubble*
8. A1.4.4. *Light yellow gravel living floor*

Site: K2

EXCAVATION: Ts4
PROFILES:
A1-B1-C1-D1

0 50 100
cm

FIGURE 3.22

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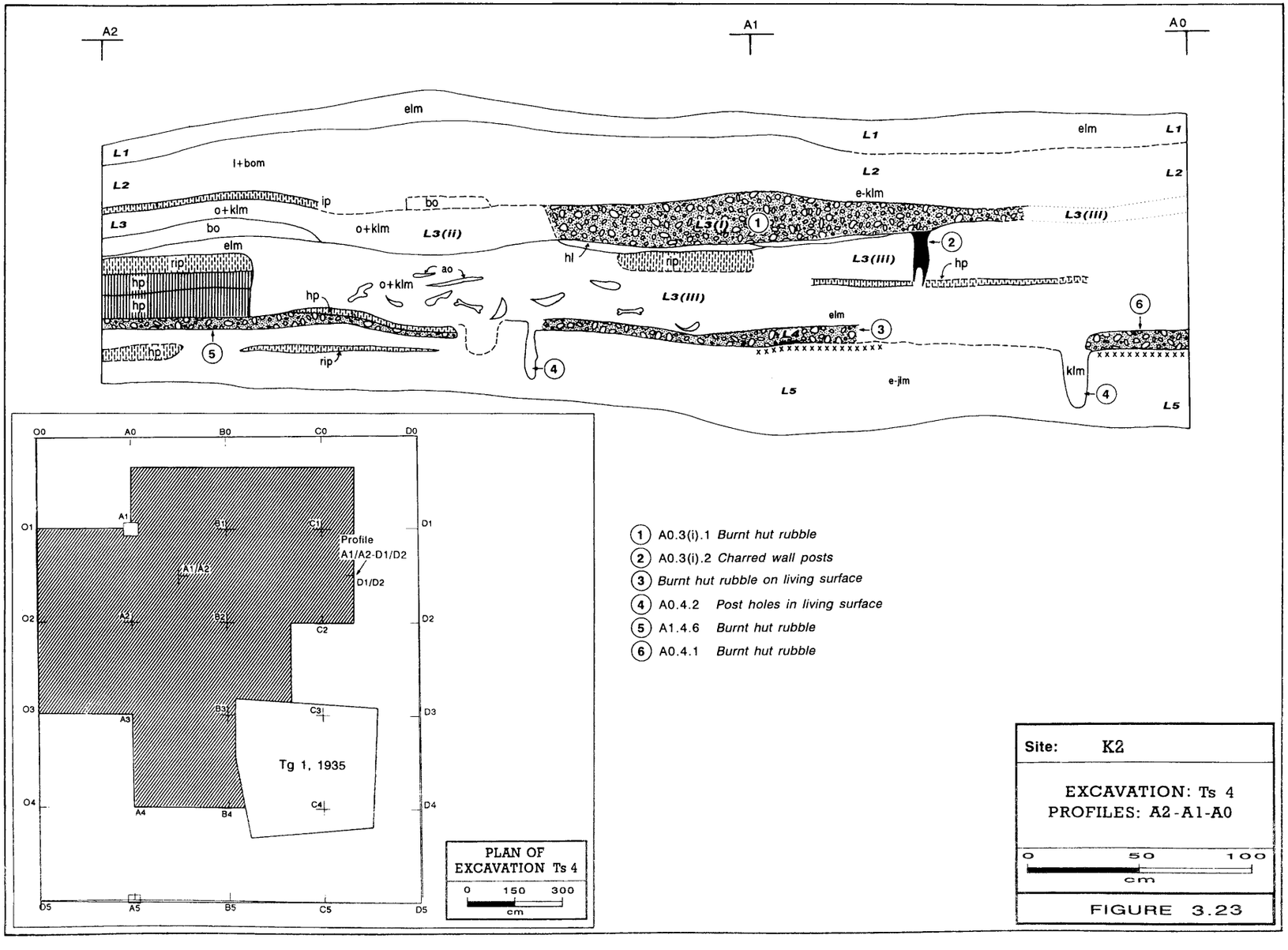

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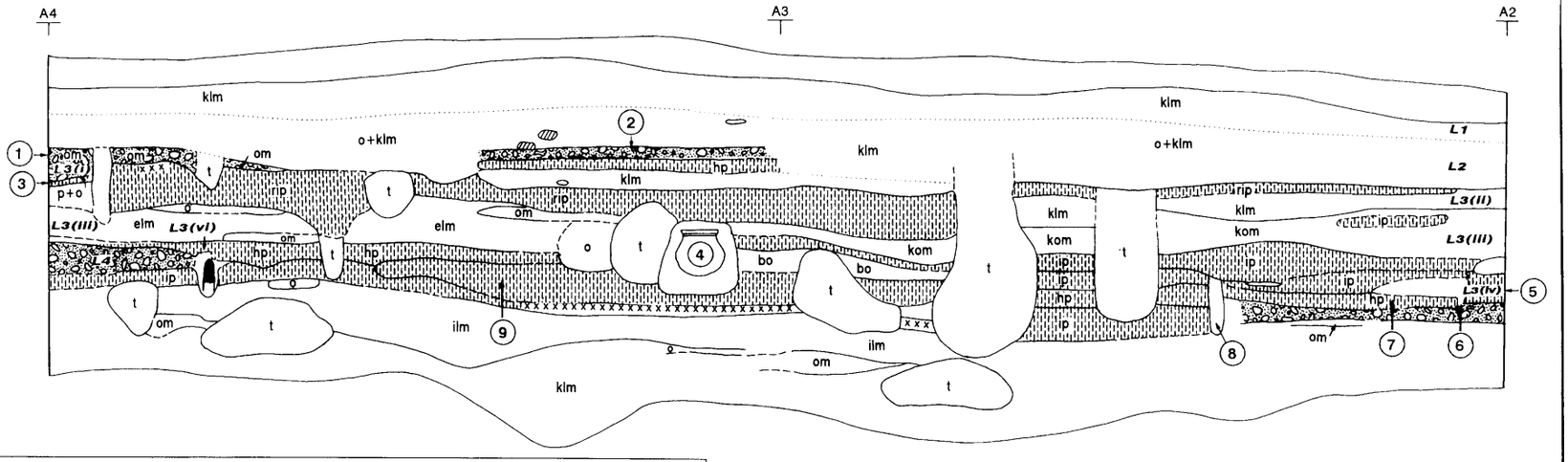

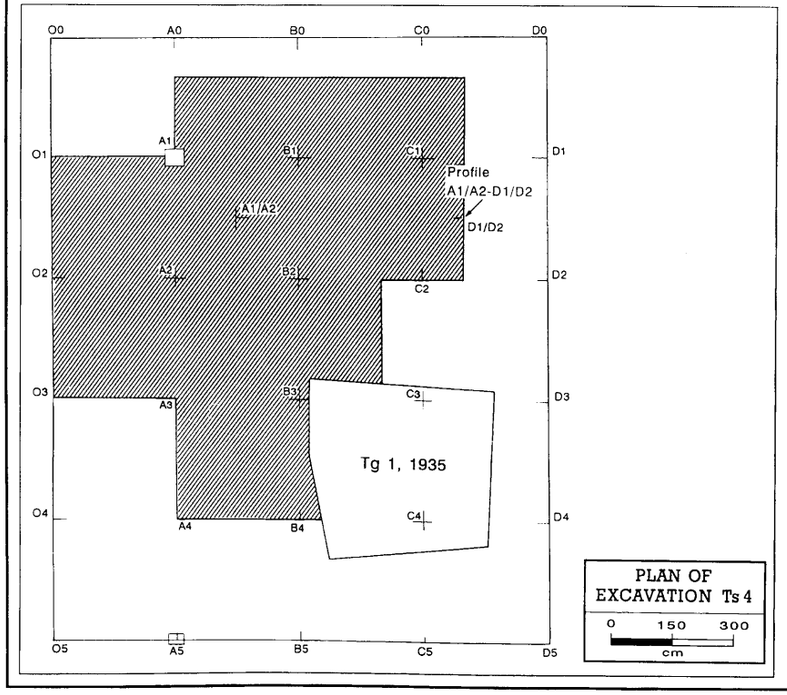

1. A3.3.5 *Burnt hut wall rubble*
2. A3.3.6 *Burnt hut rubble*
3. A3.3.12 *Burnt small hut*
4. A3.3(iii).1 *Remains of clay pot*
5. O1.3(iv).1 *Light yellow gravel hut floor*
6. O1.3(iv).2 *Inner hut wall trench*
7. O1.3(iv).3 *Light yellow gravel hut floor*
8. O1.3(iv).4 *Outer hut wall trench*
9. A3.4.3 *Red gravel floor*

Site: K2

EXCAVATION: Ts 4
PROFILES: A4-A3-A2

0 50 100
cm

FIGURE 3.24

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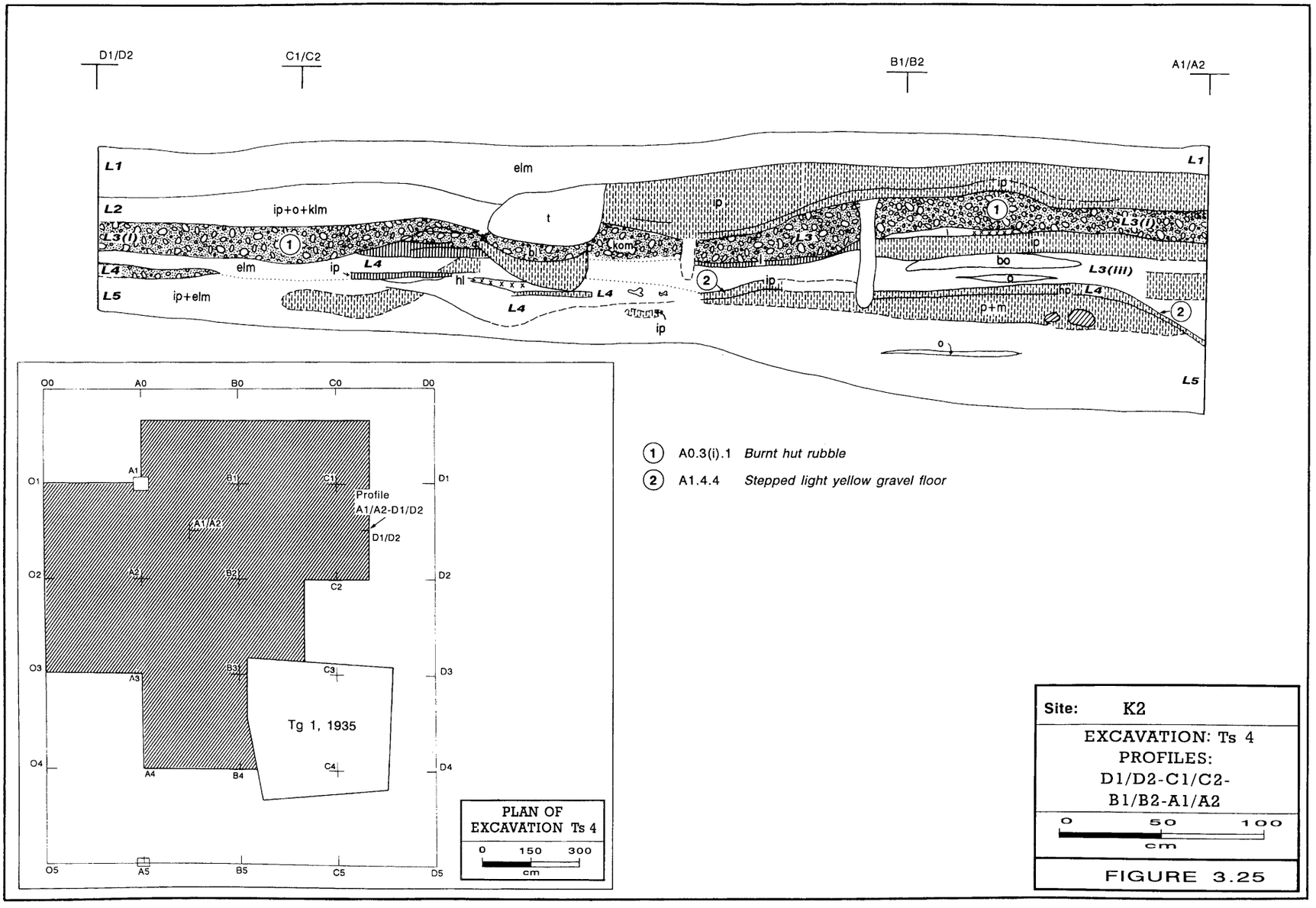

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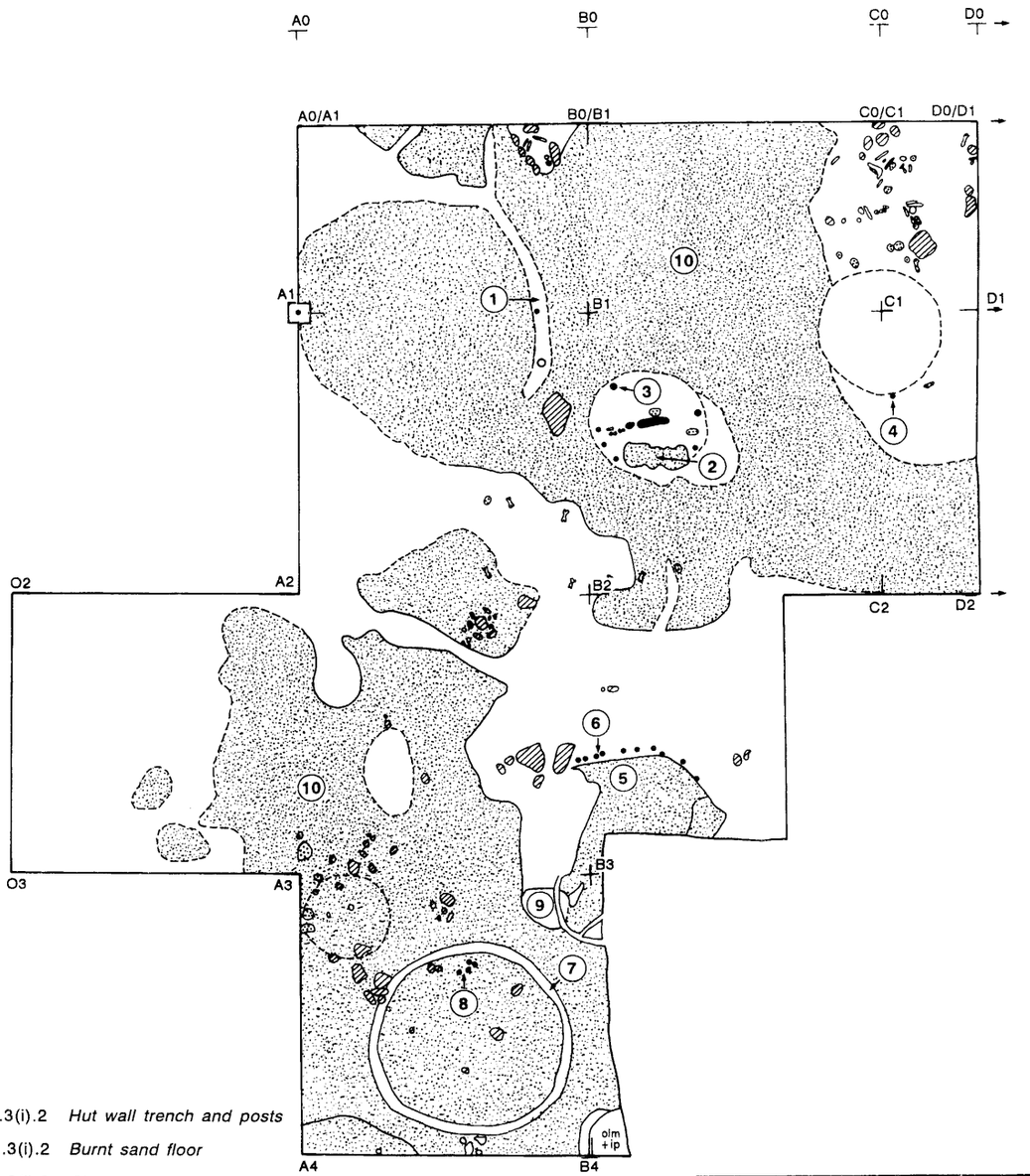

(1) A0.3(i).2 *Hut wall trench and posts*
(2) B1.3(i).2 *Burnt sand floor*
(3) B1.3(i).3 *Charred wooden posts in wall trench*
(4) C1.3(i).2 *Charred wooden post*
(5) B2.3.1(1) *Yellow gravel floor*
(6) B2.3.1(3) *Charred wooden posts*
(7) A3.3.7 *Circular trench or hut wall foundation*
(8) A3.3.10 *Charred wooden post fragments and burnt wall rubble*
(9) *Grave Ts 4.G1*
(10) *Layer of red gravel*

Site: K2

EXCAVATION: Ts 4
PLAN OF LAYER 3(ii)

0 100 200
cm

FIGURE 3.26

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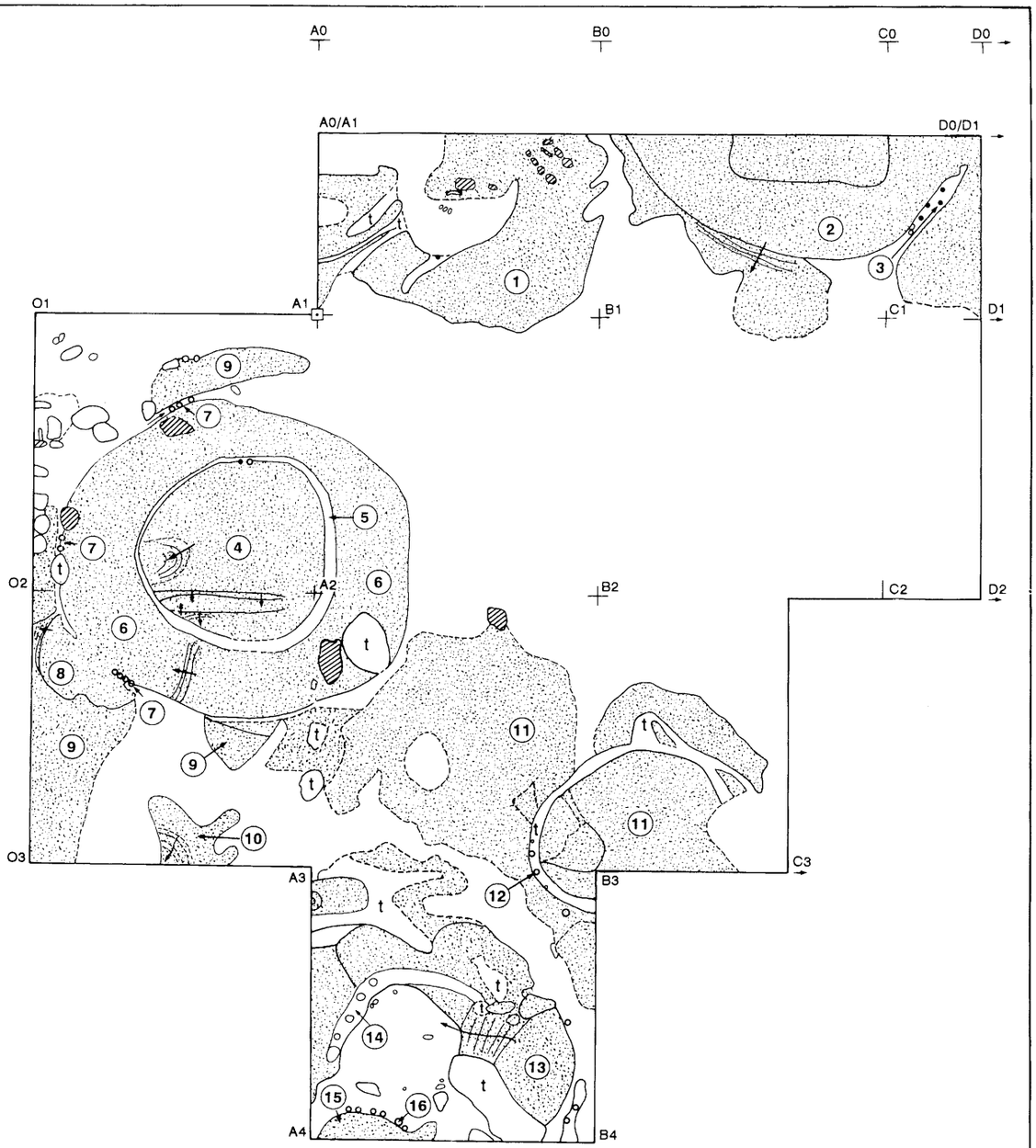

(1) A0.3(iv).1 *Light yellow gravel floor*
(2) B0.3(iv).1 *Light yellow gravel floor*
(3) B0.3(iv).2 *Wall trench with charred posts*
(4) O1.3(iv).1 *Light yellow gravel inner hut floor*
(5) O1.3(vi).2 *Inner hut wall foundation trench*
(6) O1.3(iv).3 *Light yellow gravel outer hut floor*
(7) O1.3(iv).4 *Outer hut wall foundation with post holes*
(8) *Entrance into hut*
(9) 01.3(iv).5 *Light yellow gravel living floor*
(10) 01.3(iv).6 *Stepped gravel floor*
(11) *Gravel floor*
(12) *Post hole remains in wall trench*
(13) *Stepped gravel floor*
(14) A3.5.1 *Wall trench with post holes*
(15) *Gravel floor*
(16) A3.5.2 *Hut wall foundation with post holes*

Site: K2

EXCAVATION: Ts 4
PLAN OF LAYER 3(iv)

0 100 200
cm

FIGURE 3.27

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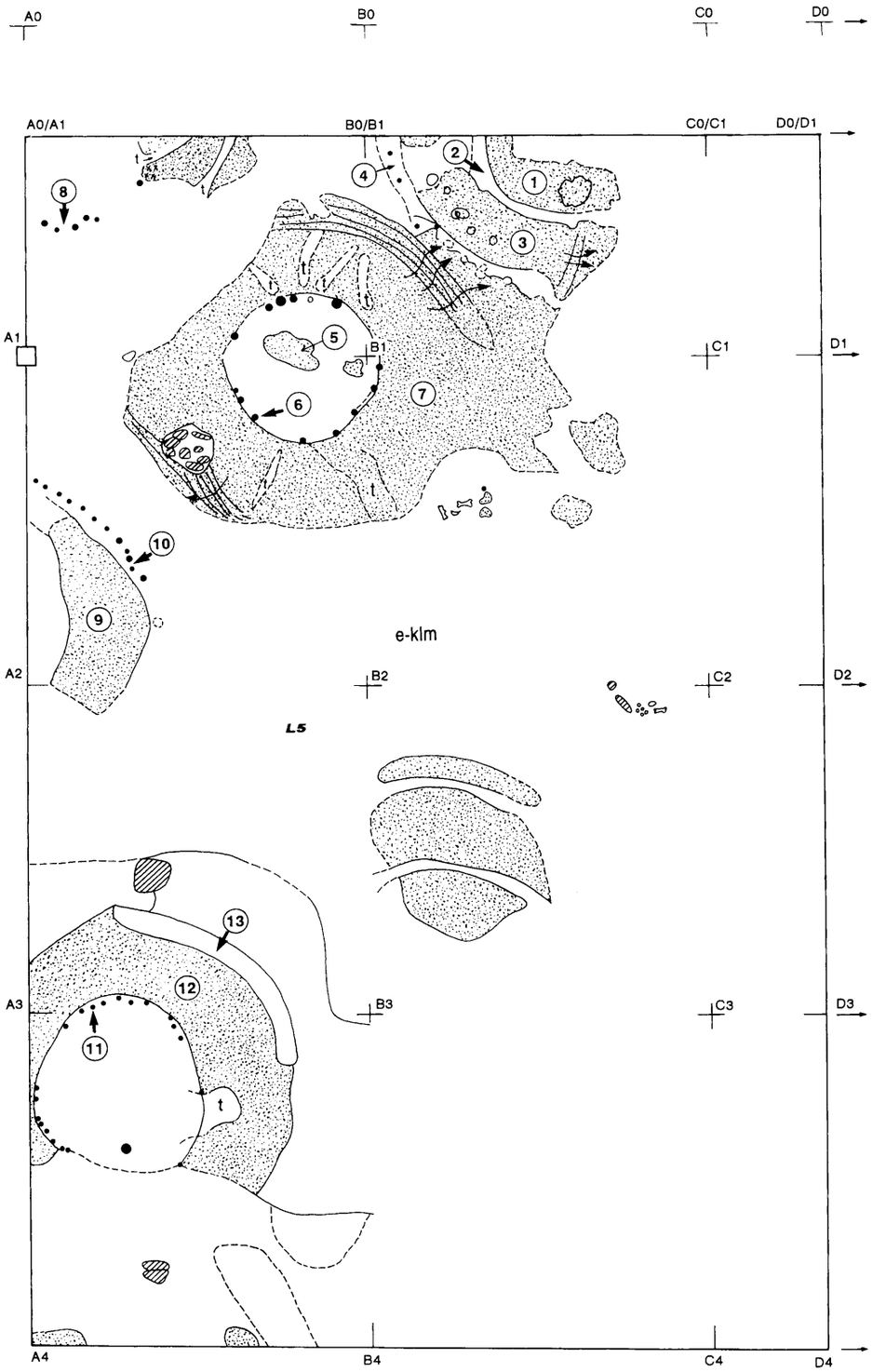

1	B0.4.3	*Red and yellow gravel hut inner floor*	8	A0.4.2.	*Charred wooden posts*
2	B0.4.5	*Foundation trench of inner hut wall*	9	A1.4.7	*Light yellow gravel floor*
3	B0.4.2	*Red gravel outer hut floor*	10	A1.4.8	*Charred wall posts*
4	B0.4.4	*Outer hut wall foundation trench*	11	A3.4.2	*Charred hut wall posts*
5	A1.4.3	*Sand hut floor*	12	A3.4.3	*Red gravel floor*
6	A1.4.2	*Charred hut wall posts*	13	A3.4.4	*Compacted sandy wall base*
7	A1.4.4	*Stepped light yellow gravel floor*			

Site: K2

EXCAVATION: Ts 4
PLAN OF LAYER 4

0 100 200
cm

FIGURE 3.28

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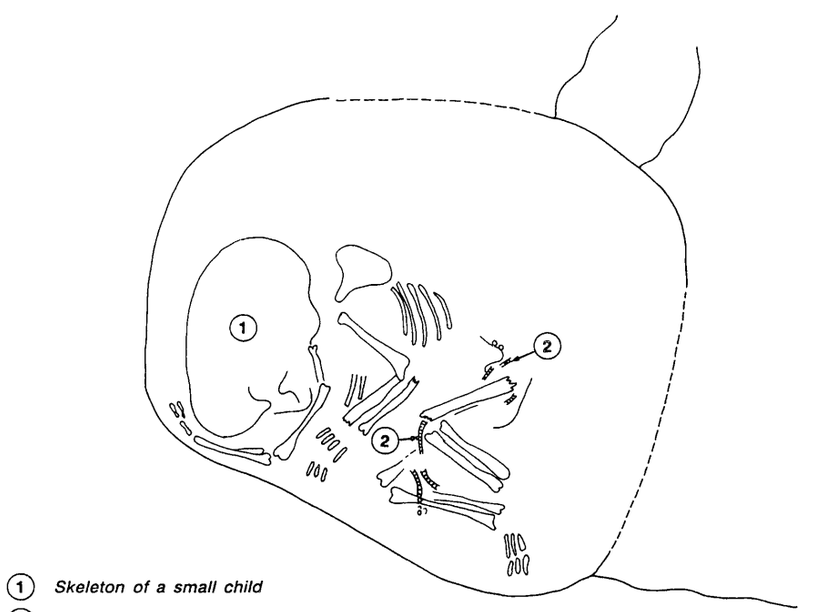

1 *Skeleton of a small child*
2 *Ostrich eggshell beads*

Site:	K2
EXCAVATION: Ts 4 GRAVE: Ts 4.G1	
0 10 20 cm	
FIGURE **3.29**	

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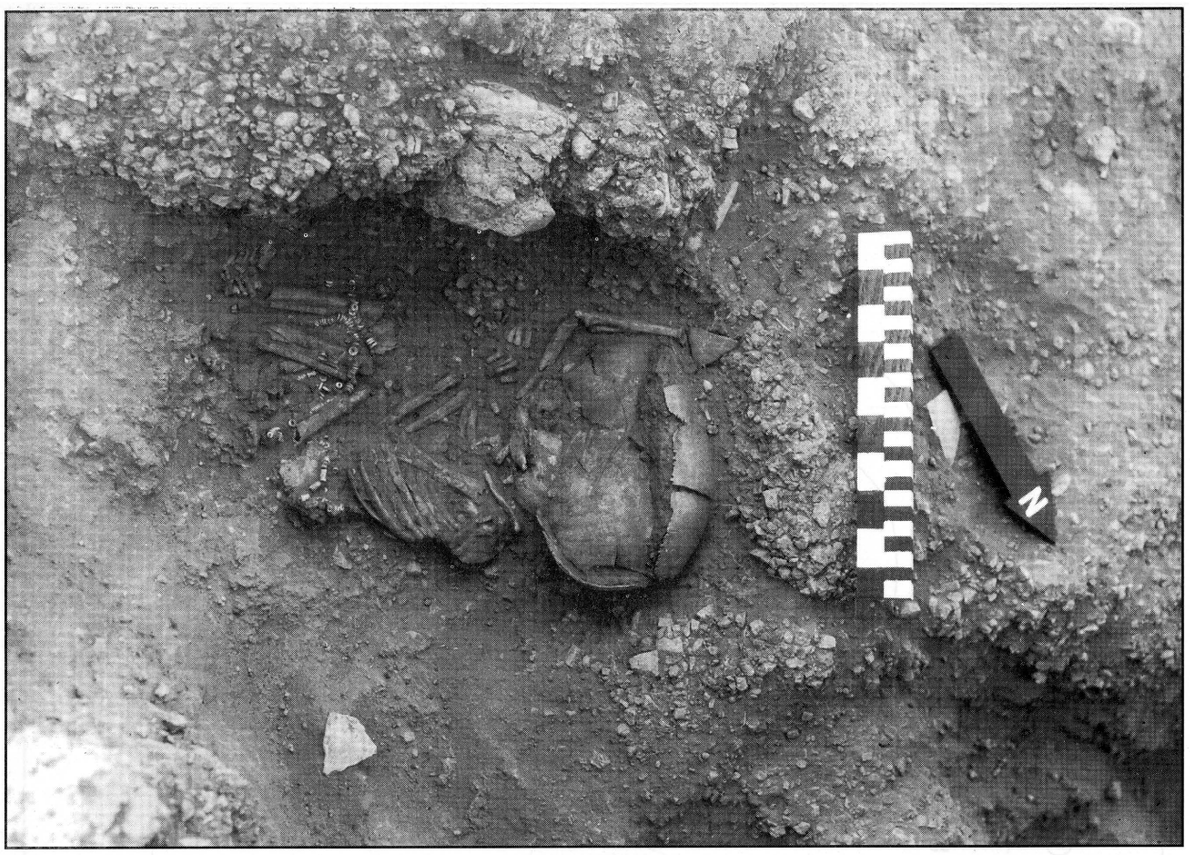

Figure 3.30[114]
Excavation Ts 4. A view of Grave Ts 4.G1 (cf. also Figure 3.29).

The north-eastern settlement area

General aspects of the north-eastern settlement area

Gardner reported the remains of huts made of poles and clay (or wattle and daub as he called them), as well as solid gravel floors and charred grain on the slope of Bambandyanalo Hill and around the perimeter of K2. Gardner repeatedly associated these remains, which he observed in his Trial Pit 12 of 1935 and on the surface of the site periphery, with the late settlement of a Nguni-speaking community[115]. His conclusions in this regard were, however, contradicted by the results of Test Excavations Rn 1, Ts 4, Ts 1 and Ts 2.

Excavation Rn 1

Rn 1 was a small excavation grid (cf. Figures 3.2 and 3.33) intended to excavate homestead remains fairly high up on the slope of Bambandyanalo Hill. The only remaining man-made feature was a section of a thick, compacted gravel floor with a smooth surface (cf. Figures 3.31, 3.32 and 3.33). The rest of any possible hut remains appear to have disappeared as a result of natural erosion on the hill slope. Judging by the extensive deposits of ash and household refuse on the lower slope of Bambandyanalo Hill, substantial settlement activities must at one time have existed on this slope. Although no further excavation work was done in Rn 1, the features and artefacts still require detailed examination and preservation.

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Figure 3.31[116]
Excavation Rn 1 in 1972. Feature B3.1.1: Remains of a gravel floor (cf. also Figures 3.32 and 3.33).

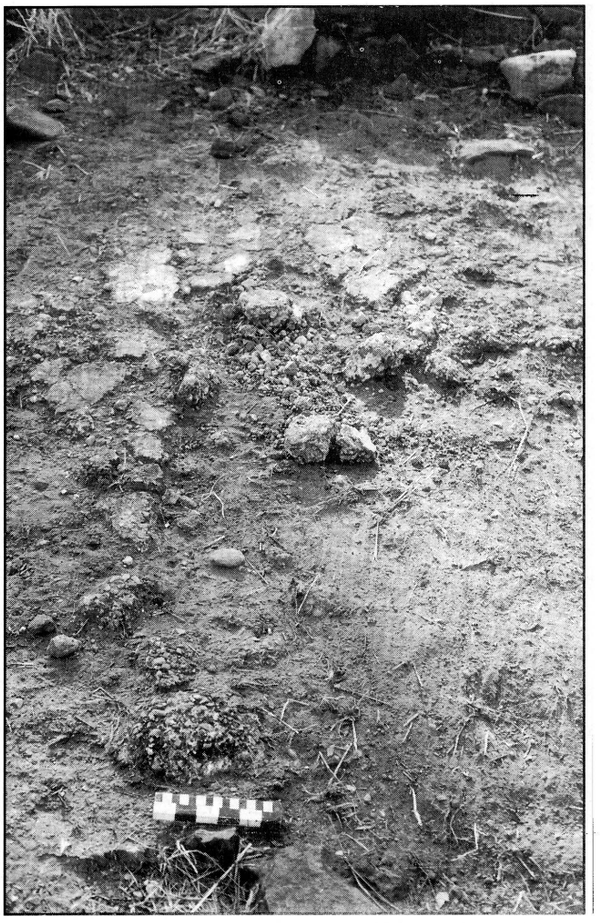

Figure 3.32[117]
Excavation Rn 1. Feature B3.1.1 in 1995: Remains of the exposed gravel floor (cf. also Figures 3.31 and 3.33).

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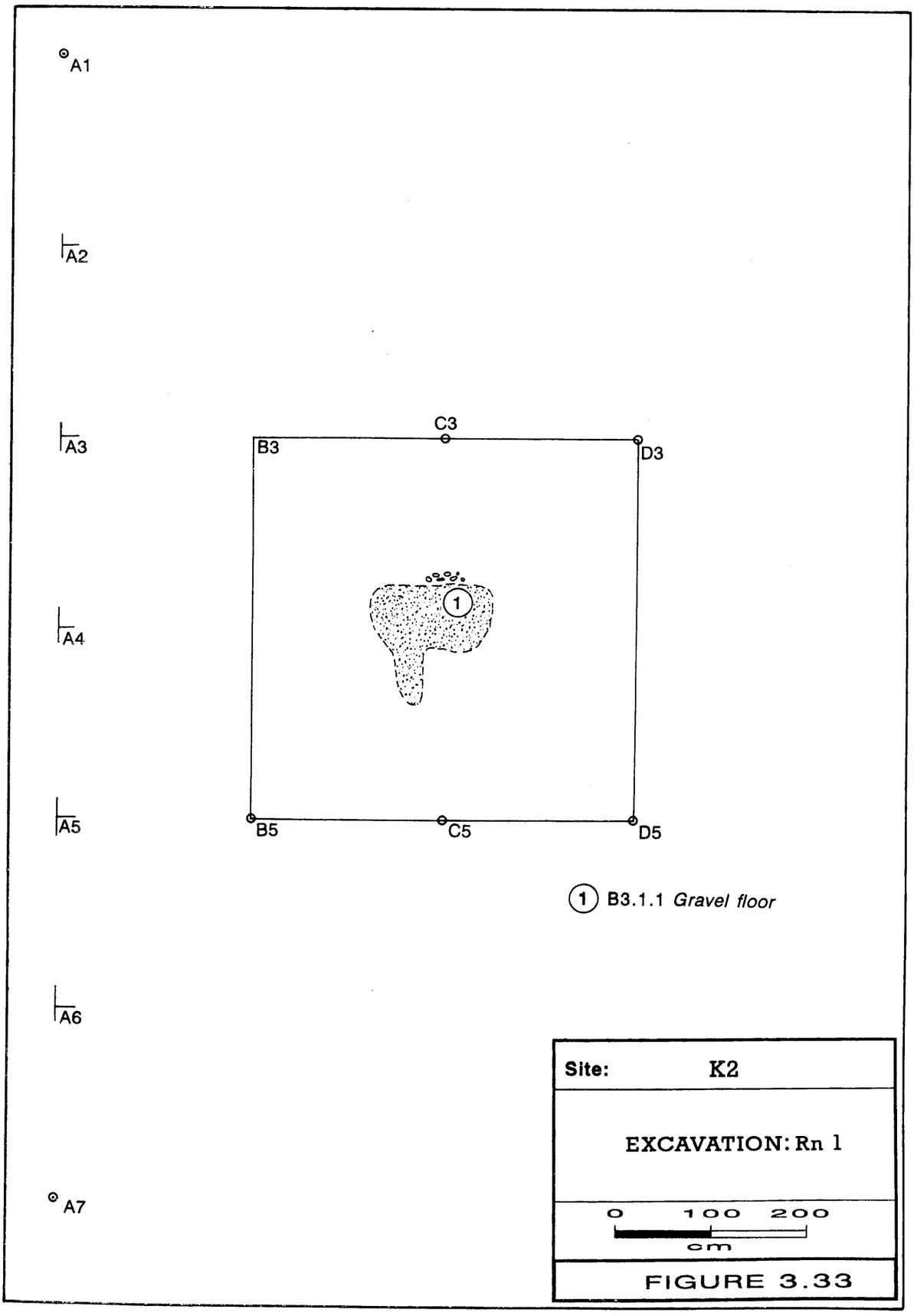

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Excavation Ts 1

Ts 1 was intended as an investigation of the midden deposit on the lower slope of Bambandyanalo Hill, in the eastern part the north-eastern settlement area (cf. Figure 3.2). Ts 1 was a test trench of 14m x 2m, subdivided into squares of 2m x 2m each (cf. Figure 3.37). Squares A4, A5 and A6 were completely excavated. The layers were mostly excavated as arbitrary layers 15cm thick (cf. Figures 3.34 to 3.37).

Layer 1 consisted of light brown sandy soil with traces of ash in its base. A considerable quantity of bone fragments and potsherds were present in the base of the layer in Squares A5 and A6. The remains of a large clay pot were recorded in Square A5 (cf. Figure 3.37 (1)). In the surface of the deposit close to Square A5 outside Ts 1, there was a big boulder with a man-made hollow in its upper side (cf. Figure 3.37(2)). It seemed to have been used by site inhabitants as a mortar stone. Household material in the layer included small concentrations of stones, bone fragments and potsherds, as well as a glass garden roller bead and a pottery figurine[118] (cf. Figures 3.36 and 3.37).

Layer 2 was a layer of light brown sandy soil. It contained stones, bone fragments, inclusions of ash and nodules of mudstone gravel. Small concentrations of stones, bone fragments and potsherds as well as several broken garden roller bead moulds made of baked clay were found in the layer[119] (cf. Figures 3.34 and 3.37). Bone fragments in Layer 2 in Square A2 were dated to 1220 AD[120], and a date on charcoal from this layer varied from 1046 to 1103 and 1114 AD[121] (cf. Appendix 8.9).



Figure 3.34[125]
Excavation Ts 1. Layer 2, viewed from the south (cf. also Figure 3.37).

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Layer 3 existed only in Squares A4 and A5 and consisted mainly of light brown, soft, sandy soil mixed with ash. Mudstone gravel nodules were present in the base of the layer. The layer contained a substantial quantity of bone fragments, potsherds, stones, broken bead moulds, and the remains of a clay pot in Square A4[122] (cf. Figure 3.37).

Layer 4 was close to the bedrock. It consisted of light brown soft, sandy soil, mixed with red and white mudstone gravel nodules. The layer also contained a patch of light grey ash, a garden roller glass bead and concentrations of stones, potsherds and bone fragments. Two of these concentrations occurred in shallow hollows in the rock bottom[123].

Layer 5 was a thin, almost sterile deposit of soft, brown, sandy soil and stones directly on the bedrock. Four shallow hollows in the rock bottom appeared to have been man-made and were filled up with household refuse[124].

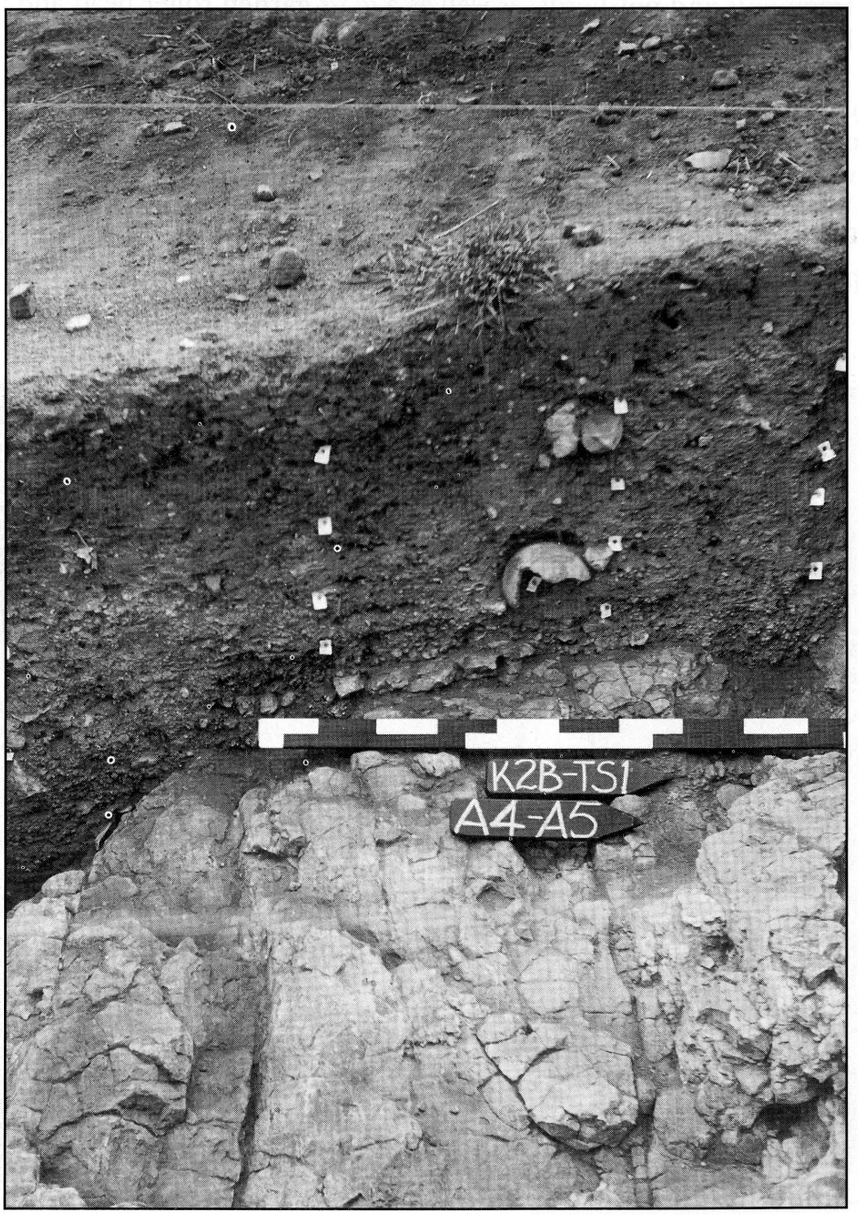

Figure 3.35[126]
Excavation Ts 1. Profile A4-A5 (cf. also Figure 3.36), overlying bedrock.

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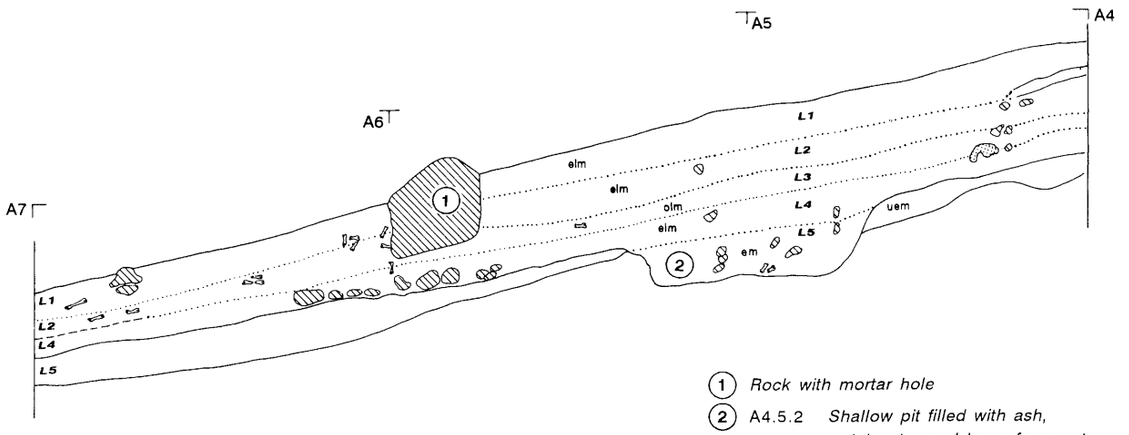
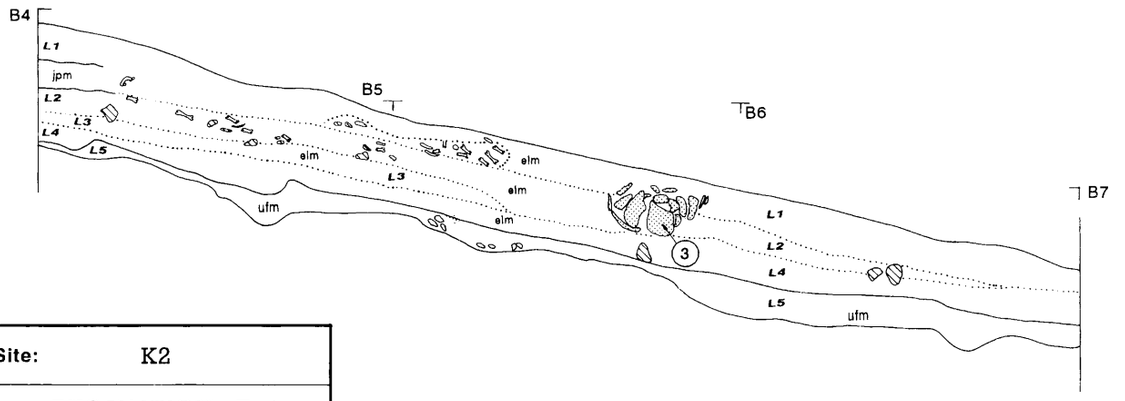


1 *Rock with mortar hole*

2 A4.5.2 *Shallow pit filled with ash, potsherds and bone fragments*



3 A5.1.1 *Ceramic vessel*

Site: K2

EXCAVATION: Ts 1
PROFILES:
A7-A6-A5-A4
B4-B5-B6-B7

0 50 100
cm

FIGURE 3.36

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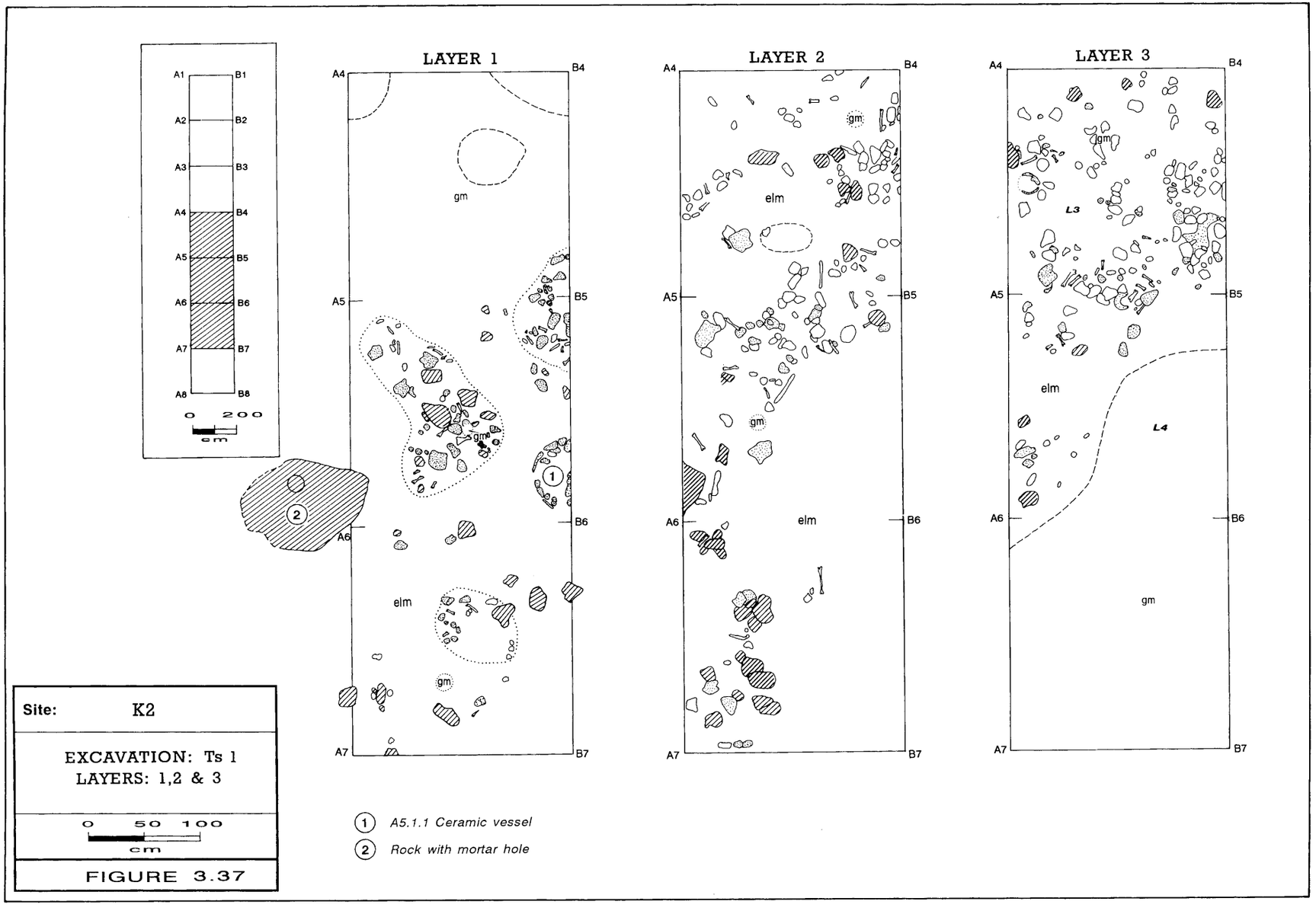

Site:	K2
EXCAVATION: Ts 1 LAYERS: 1,2 & 3	
0 50 100 cm	
FIGURE 3.37	

(1) *A5.1.1 Ceramic vessel*

(2) *Rock with mortar hole*

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Excavation Ts 2

Ts 2 (cf. Figures 3.39 to 3.43) was excavated in the midden deposit on the lower slope of Bambandyanalo Hill, in the north-eastern settlement area, to investigate the midden deposit adjacent to an old trial trench of 1934. Ts 2 was initially planned as a test trench of 2m x 12m, subdivided into squares of 2m x 2m. In 1972, Squares A1, A2 and A3 were fully excavated. In the following year, Ts 2 was expanded into a small grid. During 1973, Squares A4 and B4 were also excavated. During 1974 to 1975, the excavation was once more expanded to include the excavation of the deposit in Squares A5, B5, C5, A6, B6 and C6. The midden deposit contained the same range of household materials as Excavation Ts 1. The graves of three children were also found in Ts 2[127]. During 1993, the deposit was further investigated in a part of Square D4, which will later be incorporated into a general site grid marked Tr (cf. Figure 3.45).

The surface of the deposit probably contains material deposited by run-off rain water from higher up on the hill slope. The original surface of the deposit around Ts 2 may have been washed away by torrential rain, especially after the site surface became bare during periods of drought.

Layer 1 in Ts 2 is at present the weathered site surface. It consists of light brown, hard, sandy soil in Squares A1, A2 and A3, and a soft grey-brown mixture of ash and sand in the rest of the excavation. The layer contained scattered bone fragments, potsherds, stones, a pottery bead, a concentration of potsherds in Square B4, and a concentration of stones mainly found in Squares B5 and C5[128].

Layer 2 was a light brown to grey-brown mixture of soft sand and ash which contained a quantity of household refuse, mainly potsherds, bone fragments, stones and inclusions of ash (cf. Figure 3.39). The cultural contents of the layer included household refuse such as potsherds and bone fragments, broken bead moulds, a broken garden roller glass bead, ostrich eggshell beads, rubbing stones, and concentrations of stones in Squares A3, A4 and B4 (cf. Figure 3.39). Small patches of red mudstone gravel floor and burnt wall clay were present in the base of the layer around Profiles A3-B3. A small quantity of burnt wall clay was also recorded close to Profile A2-A3 and in Square A6. A patch of coarse, red mudstone gravel was situated in Square A4, another patch of red gravel around Profile B4-C4 and a patch of compacted white gravel in Square B6[129].

Layer 3 (cf. Figure 3.39) consisted of a mixture of light brown to grey-brown sandy soil and ash, inclusions of pure ash, except in Squares B5 and C5, where the layer was a deposit of hard, red-brown soil which contained gravel in Square B5. A patch of red mudstone gravel next to Profile A3-A4 and a patch of light yellow mudstone gravel were recorded in Square A3. Many potsherds, bone fragments and stones were scattered through the layer. A bead mould was found in Square A1, a broken clay pot was recovered in Square C5, stone concentrations were recorded in Squares A4 and B4, and a patch of ash in Square C5 was interpreted as a possible fire place[130]. Grave Ts 2.G1 was found in an old test trench adjacent to Profile A1-A2 (cf. Figures 3.39(1), 3.40 and 3.43). A disturbance in Profile A3-A4 was observed (cf. Figures 3.38, 3.39(2), 3.41 and 3.43) and later identified as Grave Ts 2.G2.

Layer 4 varied from light brown, sandy and stony soil to a grey-brown mixture of sand and ash. Adjacent to Profile A1-A2, a small mound of red gravel on the side of a small pit appeared to be the remains of a pit which had been dug and filled with household refuse by an inhabitant of the site (cf. Figure 3.39 (5)). In Square A2, two shallow pits in the bedrock had been filled

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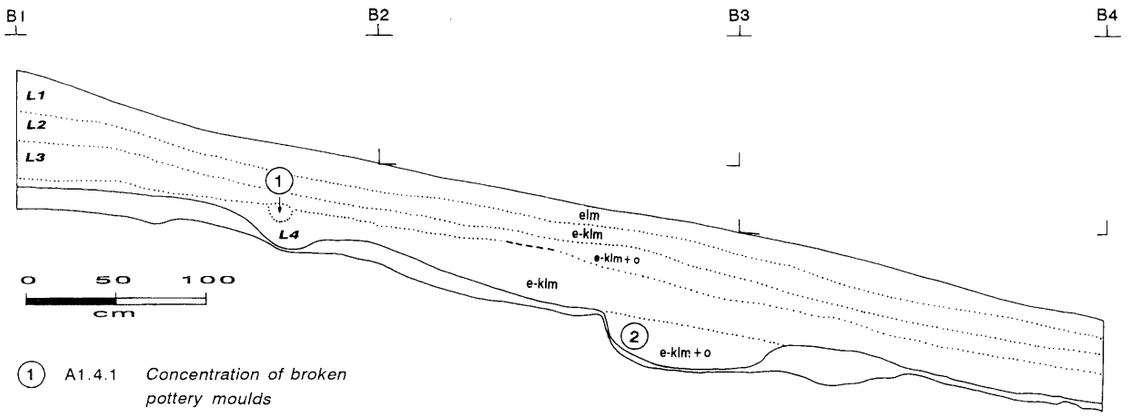
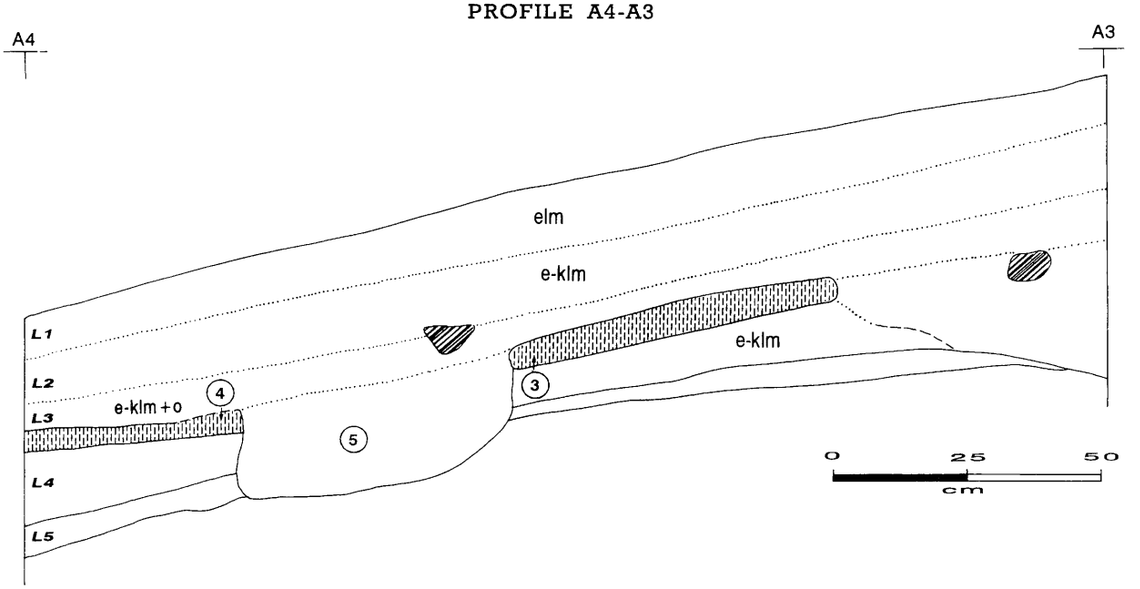
PROFILE B1-B4



(1) A1.4.1 *Concentration of broken pottery moulds*

(2) A2.4(c) *Shallow pit*

PROFILE A4-A3



(3) A3.3.1 *Red gravel*

(4) A3.3.2 *Light yellow gravel*

(5) *Grave Ts 2.G2*

Site:	K2
EXCAVATION: Ts 2 PROFILES: B1-B2-B3-B4, A4-A3	
FIGURE 3.38	

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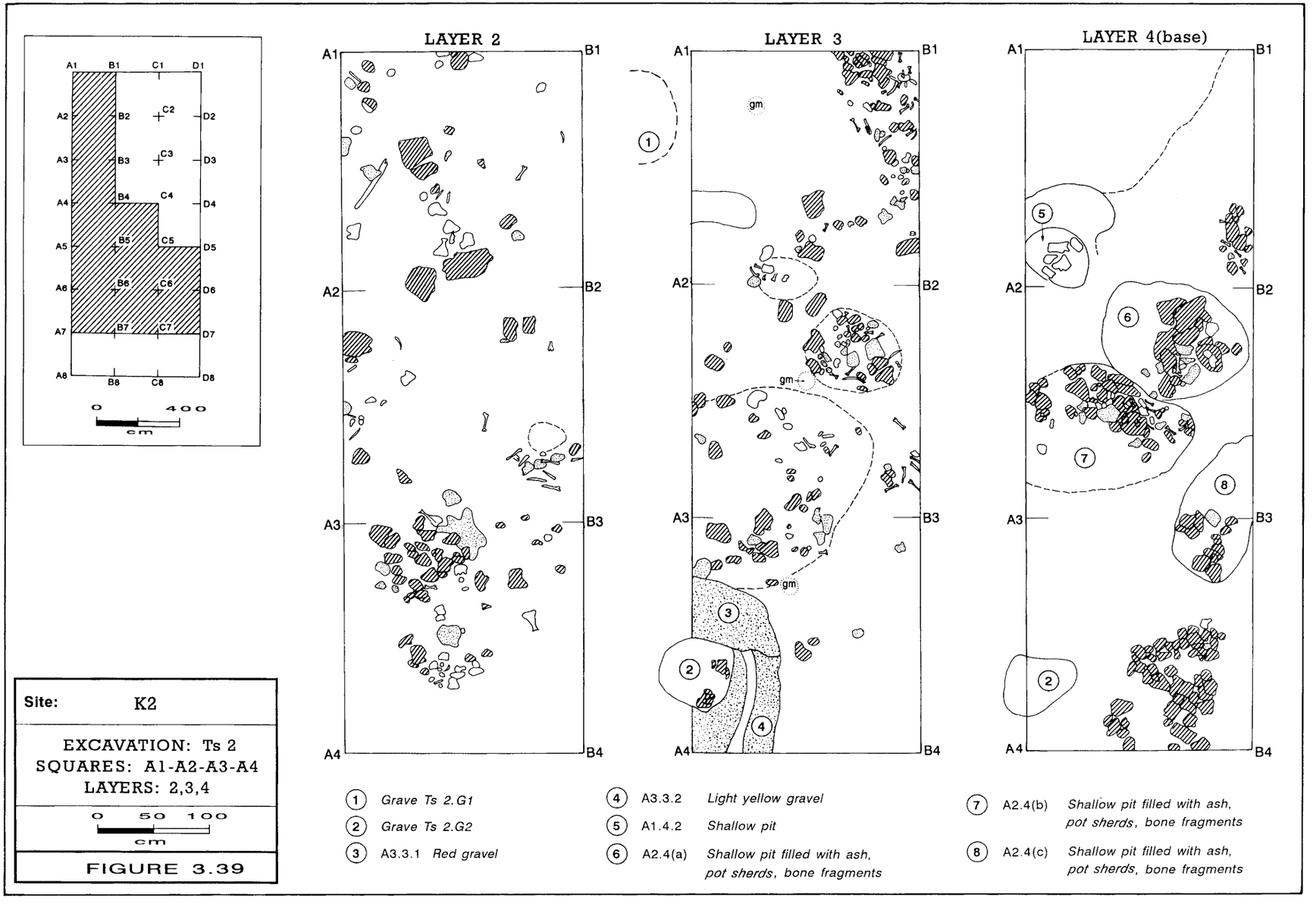

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up with stones, potsherds and bone fragments (cf. Figure 3.39(6) and (7)). The contents of these two pits were labelled A2.4(a) and A2.4(b) respectively. The layer contained potsherds, bone fragments, a concentration of broken ceramic moulds for garden-roller glass beads in Square A1, a concentration of stones in Square A3, some metal slag in Square A2 and a broken pottery figurine in Feature A2.4(a)[131]. A similar pit, Feature A2.4(c), was exposed in Profile A3-B3 (cf. Figure 3.39(8)).

Grave Ts 2.G1

Ts 2.G1 (cf. Figures 3.39(1), 3.40 and 3.43) was the badly damaged remains of a grave in a midden deposit in the bottom of the old trial trench of 1934, next to Square A1 in Excavation Ts 2. The grave had apparently been partially destroyed during the excavation of 1934 without any record of its existence. The grave was discovered in 1972 during the clearing of the old trench as part of the preparation of the site for Excavation Ts 2. The human remains consisted of the skeleton of an immature person in a flexed position on its right side, facing a south-westerly direction. The rest of the burial only consisted of a pottery bowl close to the knees, and small trade glass beads against the left wrist[132].

Grave Ts 2.G2

Grave Ts 2.G2 (cf. Figures 3.38 (5), 3.39(2), 3.41 and 3.43) was situated on Profile A3-A4 in the shallow midden deposit in the wall of the early trial trench of 1934. The human skeletal remains were in a poor state of preservation. It was the skeleton of a child lying in a flexed position on its right hand side. The facial part of the skull faced the knees in a northerly direction. The skeleton as a whole faced the east. The rest of the material buried consisted of ostrich eggshell beads around the cervical vertebrae. The beads had apparently been a necklace, and the sherds of typical K2 pottery vessels were found stacked on and around the skeleton[133].

Grave Ts 2.G3

Grave Ts 2.G3 (cf. Figures 3.42 and 3.43) was located in shallow midden deposit at Profile B4-B5. In the grave, the skeleton of a child was lying in a flexed position on its right side. The front of the skeleton was oriented towards the north and the face of the skull was turned towards the bottom of the grave. The cultural material associated with the skeleton were the sherds of at least 3 broken pottery vessels stacked around the skeleton, 5 copper anklets around each ankle, a complete garden roller bead close to the lower jaw, and several cowrie shells[134].

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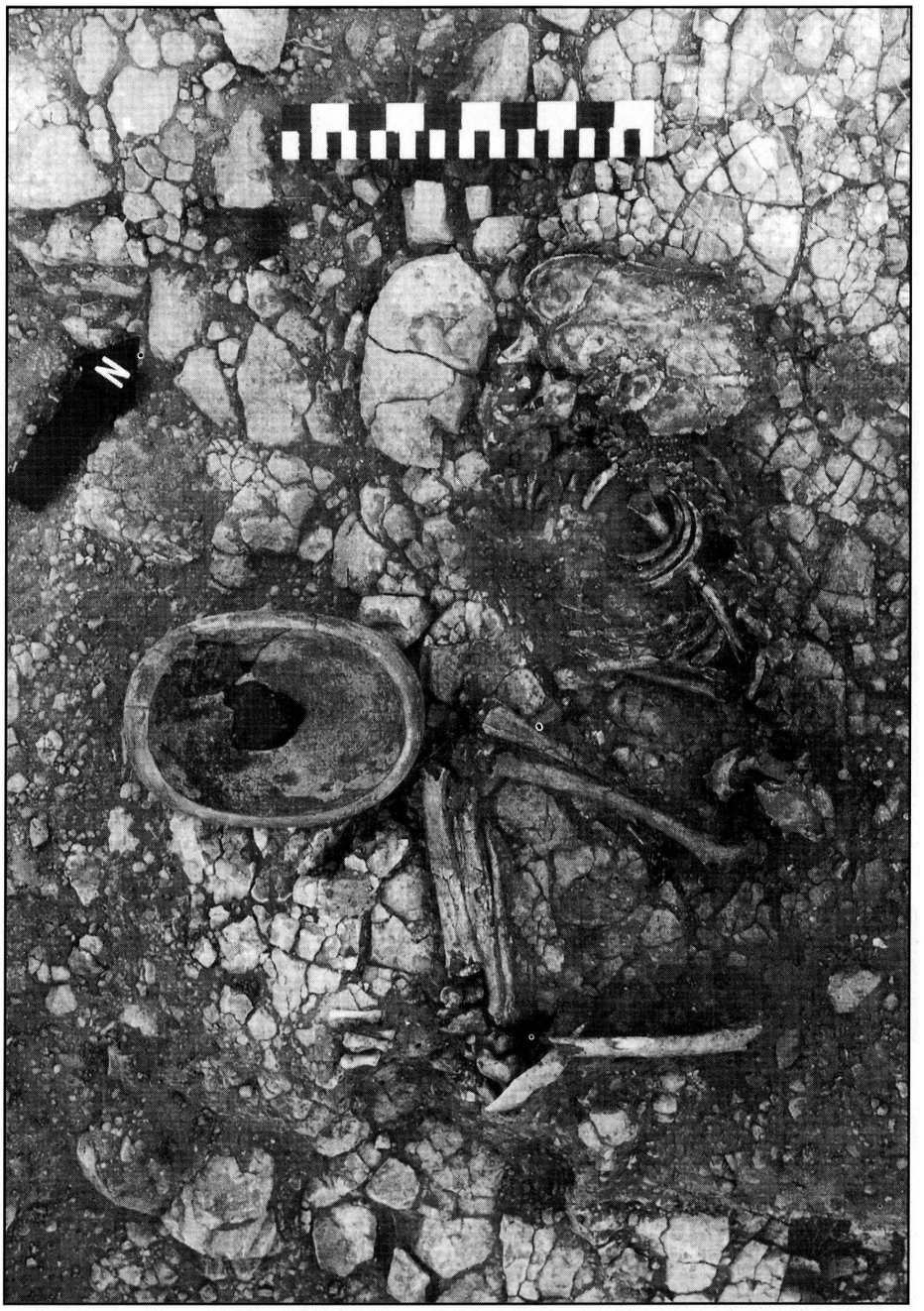

Figure 3.40[135]
A view of Excavation Ts 2: Grave Ts 2.G1 (cf. also Figures 3.39 and 3.43).

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Figure 3.41[136]
Excavation Ts 2: Grave Ts 2.G2 (cf. also Figures 3.39 and 3.43).



Figure 3.42[137]
Excavation Ts 2: A skeleton, removed from Grave Ts 2.G3 (cf. Figure 3.43).

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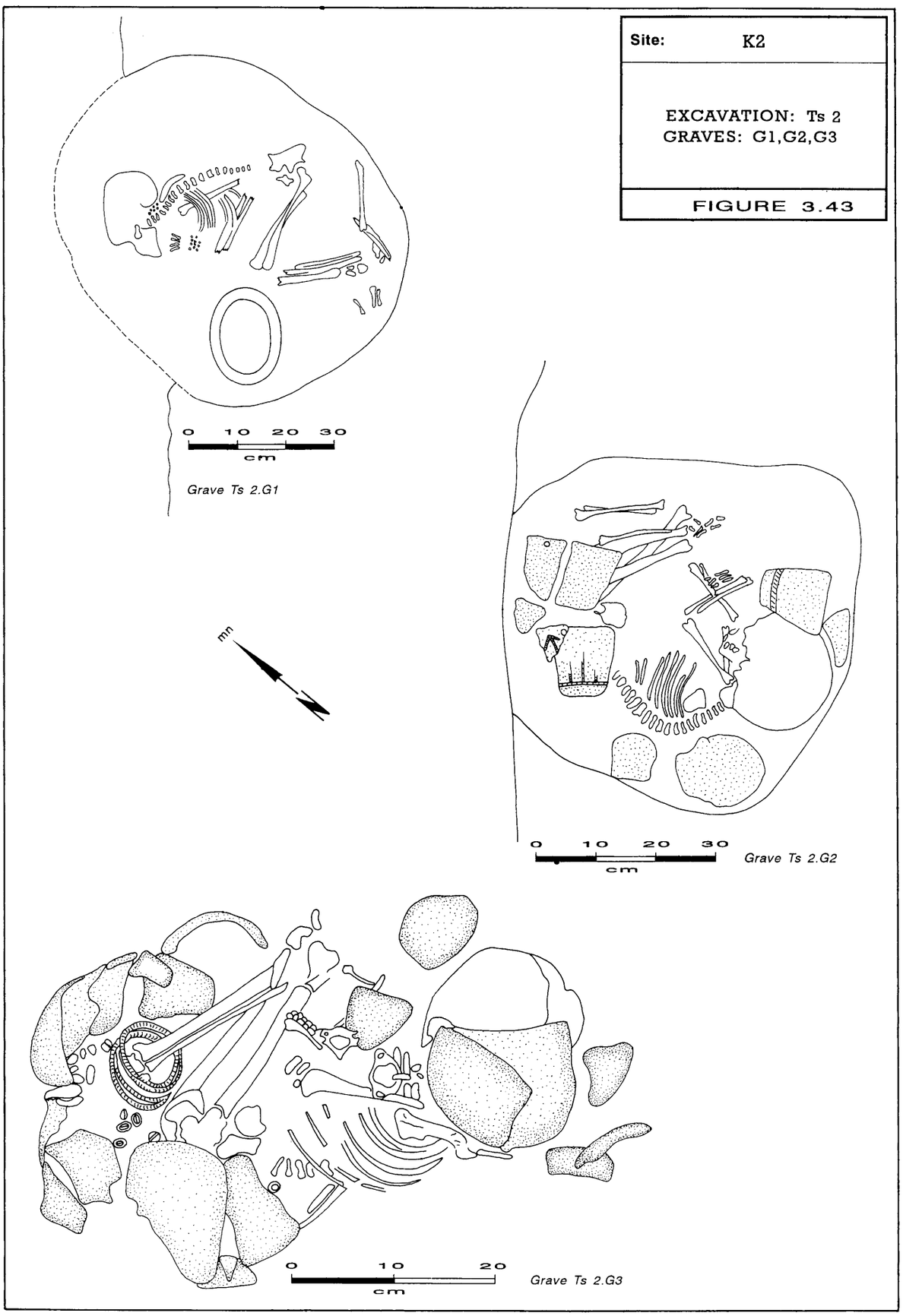

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Excavation Tr D4

Excavation Tr D4 (cf. Figure 3.45) was intended to locate more human skeletal remains during 1993 on the slope of Bambandyanalo adjacent to Excavation Ts 2. Excavation Tr D4 is part of Square D4 in the general site grid (Tr) which was, at the time of the excavation, partially surveyed by a professional surveyer. Square D4 was subdivided into 10m x 10m squares, which were in turn subdivided into 2m x 2m squares. An area of 4m x 4m, consisting of 2m x 2m Squares D4/a1/1, 2, 6 and 7 was excavated. Squares D4/a1/1 and D4/a1/2 partially overlapped Squares A1 and A2 in Ts 2 (Figure 3.45) which had been excavated twenty-one years earlier.

Layer 1 of Tr D4 consisted of disturbed soil from the earlier excavation of 1934.

Layer 2 is the surface layer of the deposit, consisting of light brown sandy soil mixed with ash, containing stones, bone fragments and potsherds. The layer was arbitrarily excavated to a depth of 15cm below the surface. Bone from this layer was dated to 1033 AD[138] (cf. Appendix 8.9).

Layer 3 is similar to Layer 2, consisting of light brown, sandy soil containing household refuse such as bone fragments, potsherds and stones. The layer was excavated as an arbitrary layer of 15cm.

Layer 4 is the bottom layer of the midden deposit, consisting of a mixture of light brown sandy soil, ash, bone fragments and stones overlying the mudstone gravel stratum of sterile bedrock. Shallow pits in the bedrock below in the base of Layer 3 appear to have been made by the site inhabitants and filled up with soil containing household refuse.

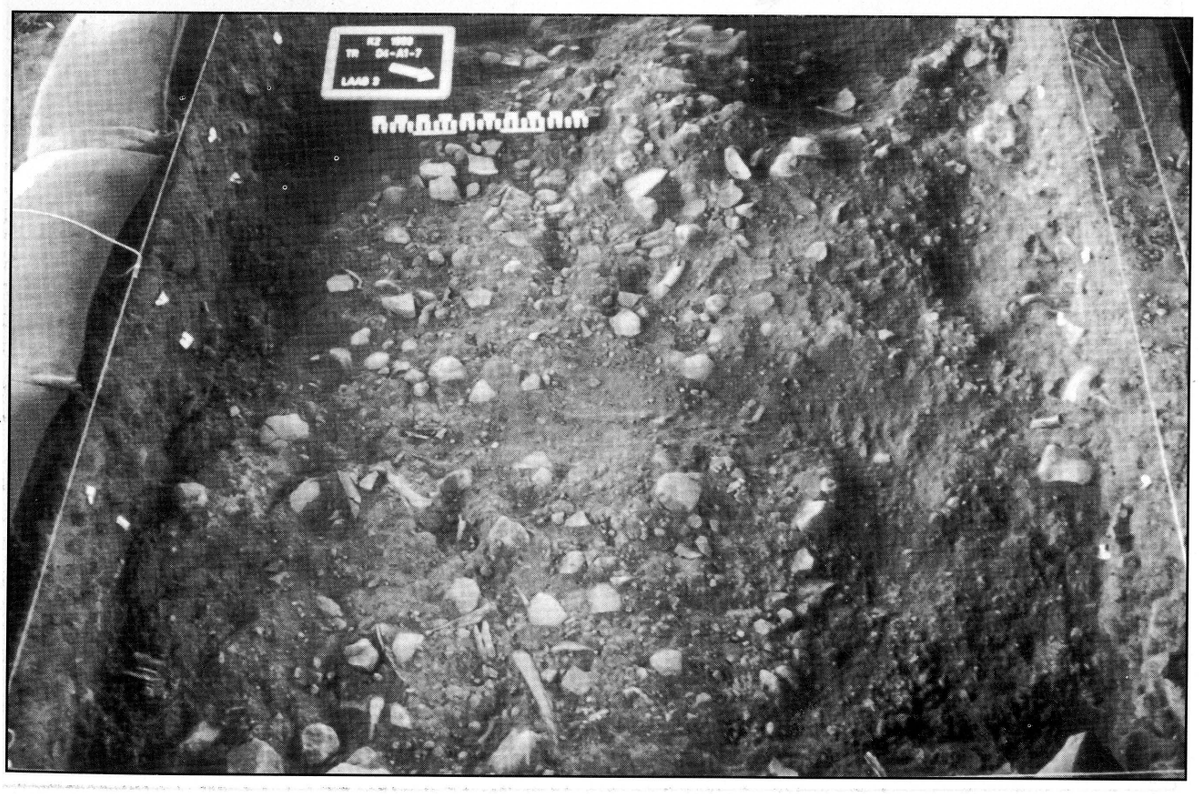

Figure 3.44[139]
Excavation Tr D4. A view of Layer 3 (cf. also Figure 3.45).

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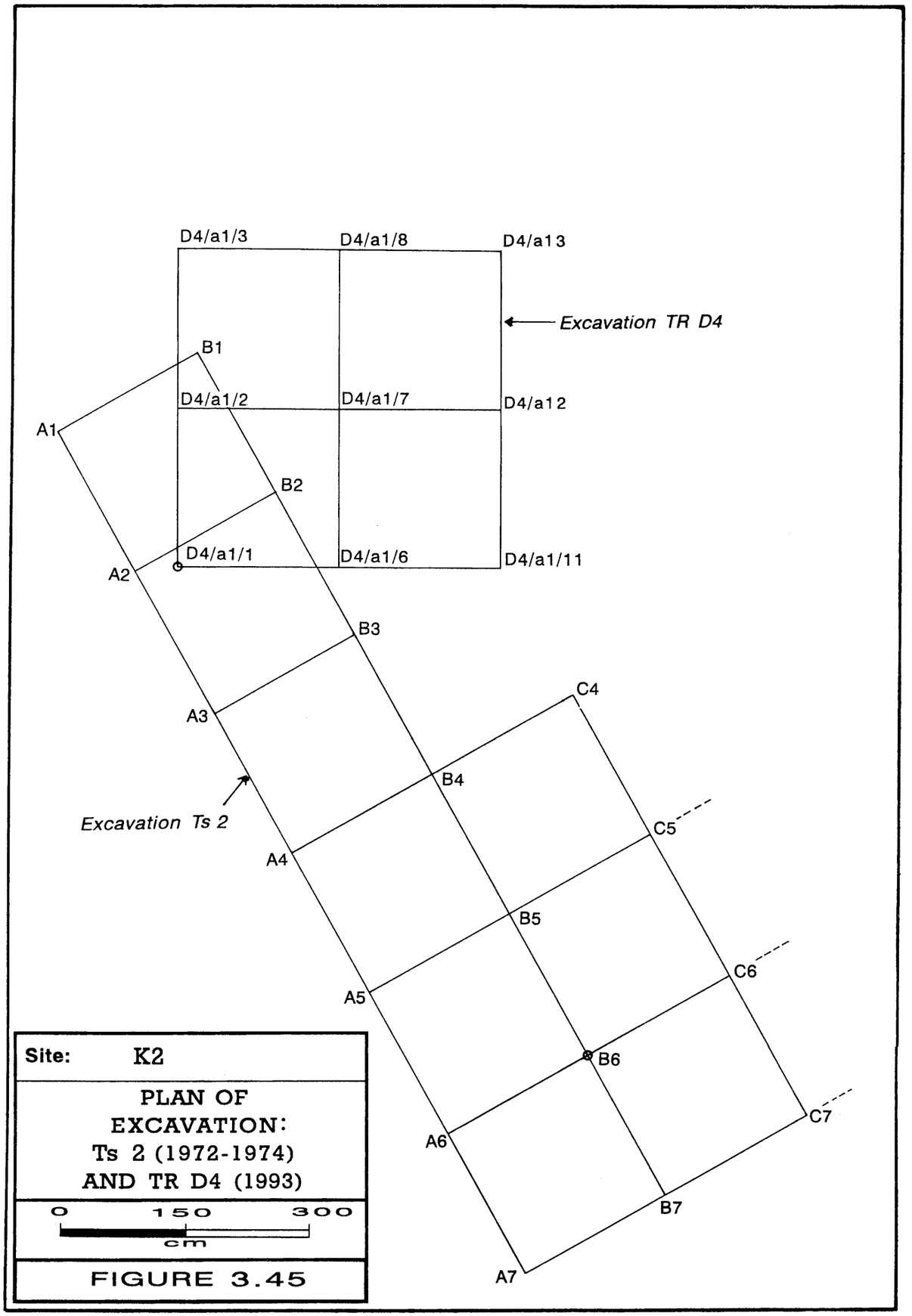

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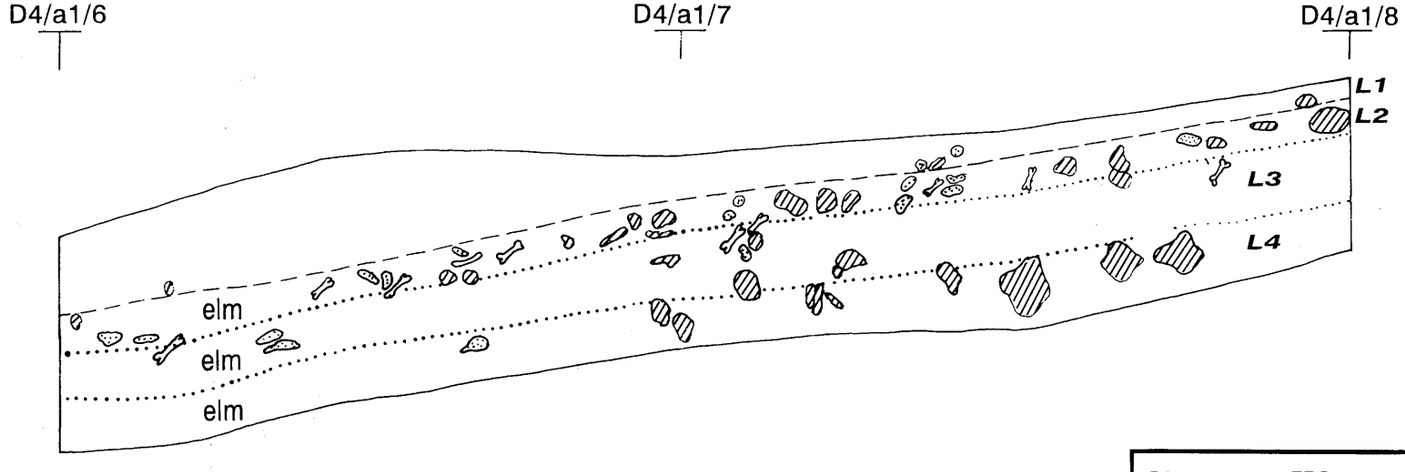

Site: K2

EXCAVATION: TR D4
SQUARE: D4/a1
PROFILE: D4/a1/6-D4/a1/8

0 50 100
cm

FIGURE 3.46

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The western and northern settlement area

General aspects of the western and northern settlement area

The closest Gardner came to investigating the western and northern perimeter of K2 was his Trial Trench 2 of 1935 to the north of the central midden, and the western side of his huge excavation blocks of 1936 to 1940[140]. No records seem to exist of any excavation or surface survey in the peripheral area between Gardner's excavations and the western cliffs as well as the northern valley entrance to K2.

During 1972 and 1973, Excavations Ts 5 and Ts 6 were intended to investigate the stratification and cultural contents of the deposits adjacent to Gardner's excavations as close to the western and northern peripheral area as possible (cf. Figure 3.2).

Ts 5 was excavated in 1972 in the western wall of Strip 15 in Gardner's Blocks 3 and 4 which he excavated in 1938[141]. In this part of his excavation, Gardner found human burials KS 56, KS 57, KS 58 and KS 63[142]. Gardner also reported the presence of patches of gravel and the remains of burnt hut walls in the upper levels in his Blocks 4 and 5 to the west of the central midden, which he seemed to associate with his assumed later post-Hottentot, Black community at K2[143].

Excavation Ts 6 was excavated in 1973, close to the western end of Gardner's Trial Trench 2 of 1935, where he claimed to have found all aspects of the material culture of a Black community, including their pottery, huts made of poles and clay, burnt millet and metal artefacts[144].

Excavation Ts 5

Ts 5 (cf. Figures 3.47 to 3.49) was a test trench of 10m x 2m, subdivided into squares of 2m x 2m. Squares A2, A3 and A4 were completely excavated in 1972. The stratification consisted mainly of midden material which contained patches of mudstone gravel and the remains of two graves. Square A5 was excavated in 1993 in search of more human skeletal material.

Layer 1 (cf. Figure 3.47) consisted of a light brown to grey-brown mixture of sand and ash and contained few potsherds and bone fragments. A patch of fairly loose, red mudstone gravel was present at Profile A2-B2, with a small concentration of potsherds lying on its surface. At Profiles A3-A5 and A5-B5, a patch of loose gravel appeared to have been part of a living floor. Mounted in this floor was a stone with small hollows in its flat upper surface, which could have been used as some kind of an anvil stone when cracking hard seeds, such as marula pips, with a hammer stone[145].

Layer 2 (cf. Figure 3.47) was a grey-brown deposit of mixed sand and ash which contained a considerable quantity of potsherds and bone fragments. The deposit contained a concentration of bones and potsherds at Profile A5-B5 and a red mudstone gravel patch at Profiles A2-A5 and A5-B5. A disturbance in Square A3 later turned out to be Grave Ts 5.G2[146].

Layer 3 (cf. Figure 3.47) consisted mainly of light brown to grey-brown, ashy sand, but tended to contain more red-brown sand and less ash and fewer potsherds in its base. The sterile deposit of red-brown sand below Layer 3 was penetrated in Square A3 by a small pit which contained grey-brown ashy sand. Another pit in Square A4 was also filled with midden deposit[147]. Layer 3 was dated to 1286 AD[148] (cf. Appendix 8.9).

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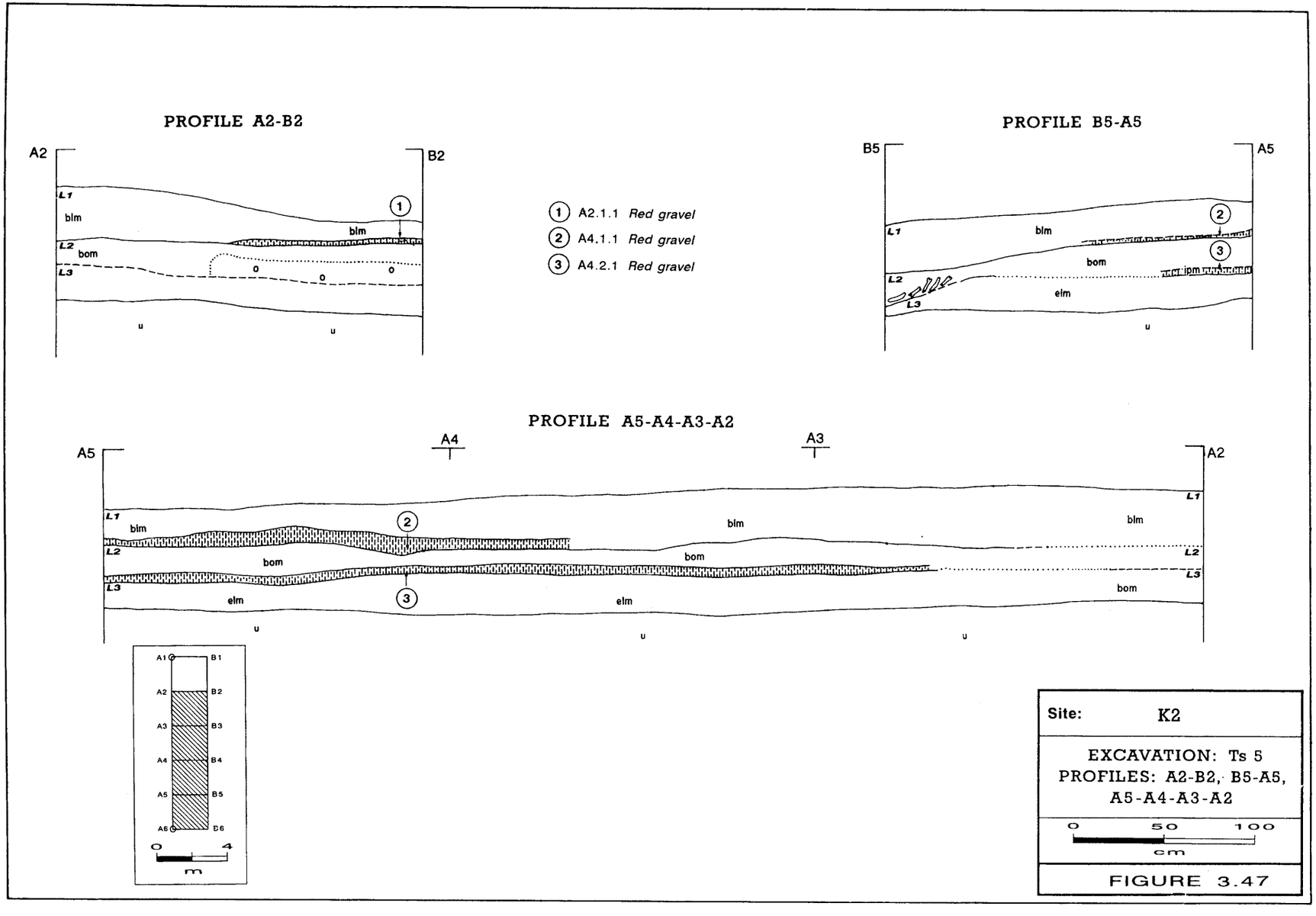

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Grave Ts 5.G1

This grave (cf. Figure 3.49) is the remaining part of the grave of a child in the wall of Gardner's excavation. Only the skull and a few other bones were left in the grave. The rest had already either been removed by Gardner's excavation team, or disintegrated when the wall of the old excavation eventually collapsed. The skull was lying on its right side, facing south. The sherds of a pottery vessel were positioned in front of the skull. The grave penetrated the patch of red mudstone gravel in the base of Layer 1 in Square A2, which indicated that the child was buried during or after the development of Layer 1[149].

Grave Ts 5.G2

This grave (cf. Figures 3.48 and 3.49) is the grave of a small child at Profile A4-B4. Damage to the grave and skeleton had been caused by the burrowing activity of an animal, possibly a springhare. The child was buried in a flexed position on its right side, with its front facing north-east and the face of the skull oriented towards the north. The scapula of a big animal such as a cow had been placed above the child's head. The skeleton also had small, red-brown trade glass beads around its pelvis. The grave pit penetrated the patch of red mudstone gravel in the surface of Layer 2 in Square A3, which indicated that the child was buried during or after the development of Layer 1[150].

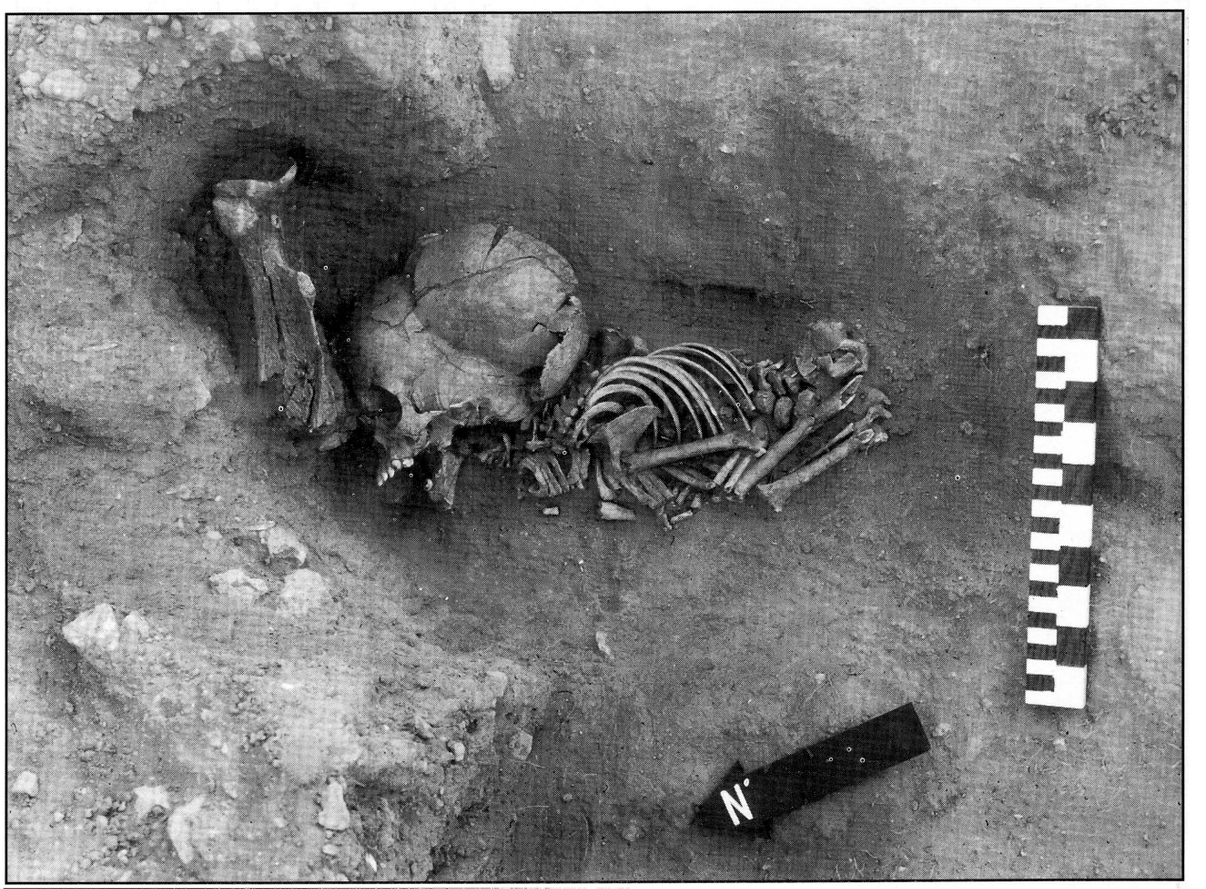

Figure 3.48[151]
Excavation Ts 5. A view of Grave Ts 5.G2 (cf. also Figure 3.49).

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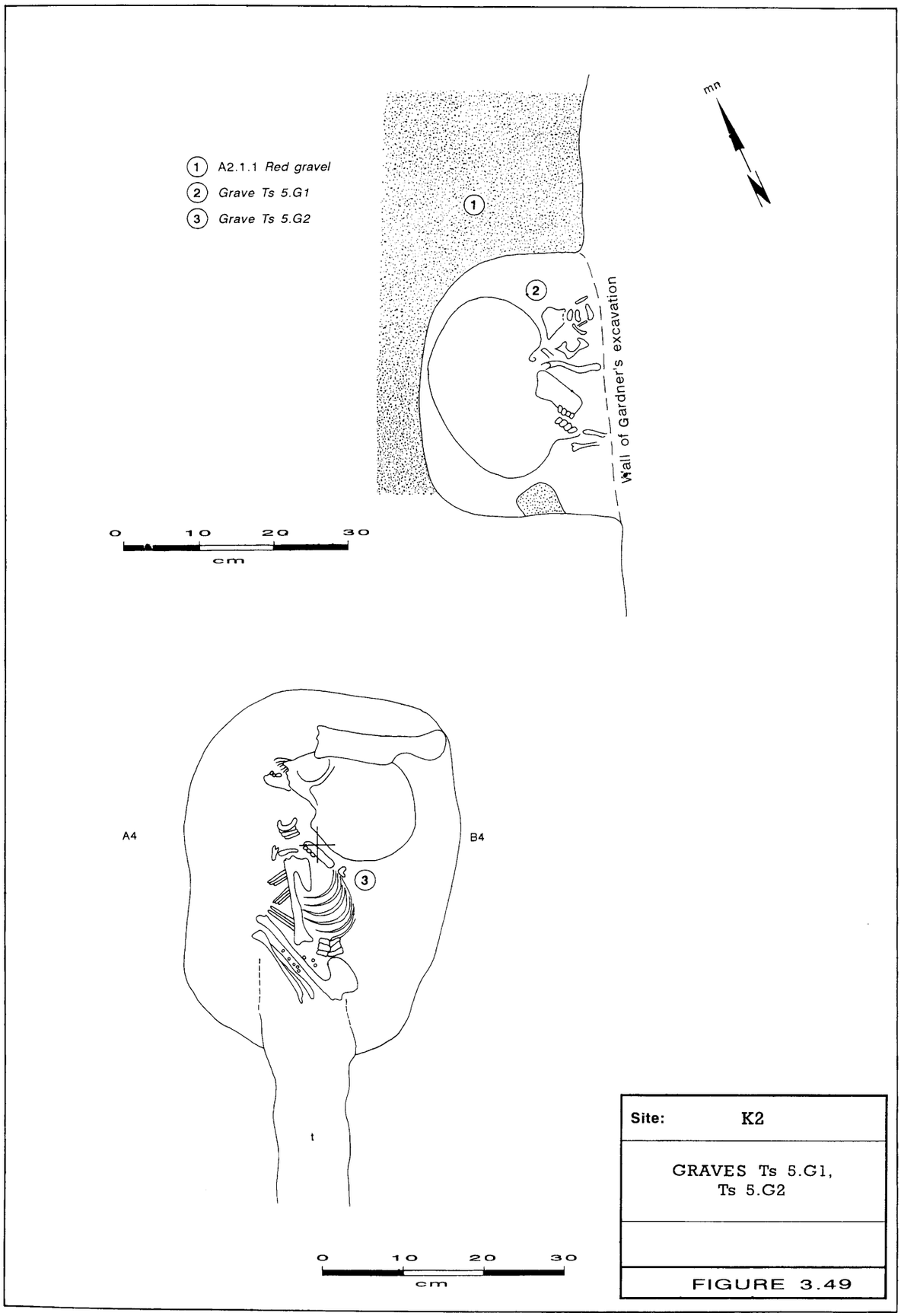

Site:	K2
GRAVES Ts 5.G1, Ts 5.G2	
FIGURE 3.49	

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Excavation Ts 6

Ts 6 (cf. Figure 3.51) was a test trench of 12m x 3m, subdivided into squares of 3m x 3m. Square A2 was completely excavated, as well as a part of Layer 1 in Squares A1 and A3.

Layers 1, 2 and 3 were excavated as arbitrary levels of a mixed deposit of burnt hut wall clay, charcoal, charred grain, potsherds, bone fragments and stones. This deposit represented the last phase of the stratified deposit in this part of the site, and appeared to be the remains of a homestead area which had been destroyed by fire. The absence of prominent hut floors, however, might indicate that the burnt hut debris could have been brought from elsewhere and dumped there on the underlying midden deposit of Layers 4 and 5[152].

Layers 4 and 5 were clearly a midden deposit which consisted alternately of light brown sandy soil, a grey-brown mixture of sand and ash, and patches of white ash[153].

Layers 6, 7, 8 and 9 are arbitrary levels of a white deposit of humous material, which may be interpreted as the compacted manure of an animal kraal. This deposit also included traces of light grey-brown, sandy ash, especially in Layer 9. The base of Layer 9 was black and appeared to have been burnt[154]. A radiocarbon date on bone material in Square A2 in Layer 7 was calibrated to 1167 AD[155] (cf. Appendix 8.9).

Layers 10, 11, 12 and 13 were deposited between Profile B2-B3 and a solid rock protrusion from below. The layers were slightly visually stratified and consisted mainly of a grey-brown mixture of sand and ash. Layer 12 also contained a fair quantity of gravel nodules[156]. Layer 14 appeared to be a grey-brown, water-borne deposit of sand on the rock bottom[157].

This part of K2 could perhaps be interpreted as the location of an animal pen during an early phase of the settlement history of the site, and as the dumping place for household refuse as well as the eventual dumping place of burnt hut rubble during a later phase in the site history. These deposits might be be considered to be part of the northern periphery of the central household area on K2.

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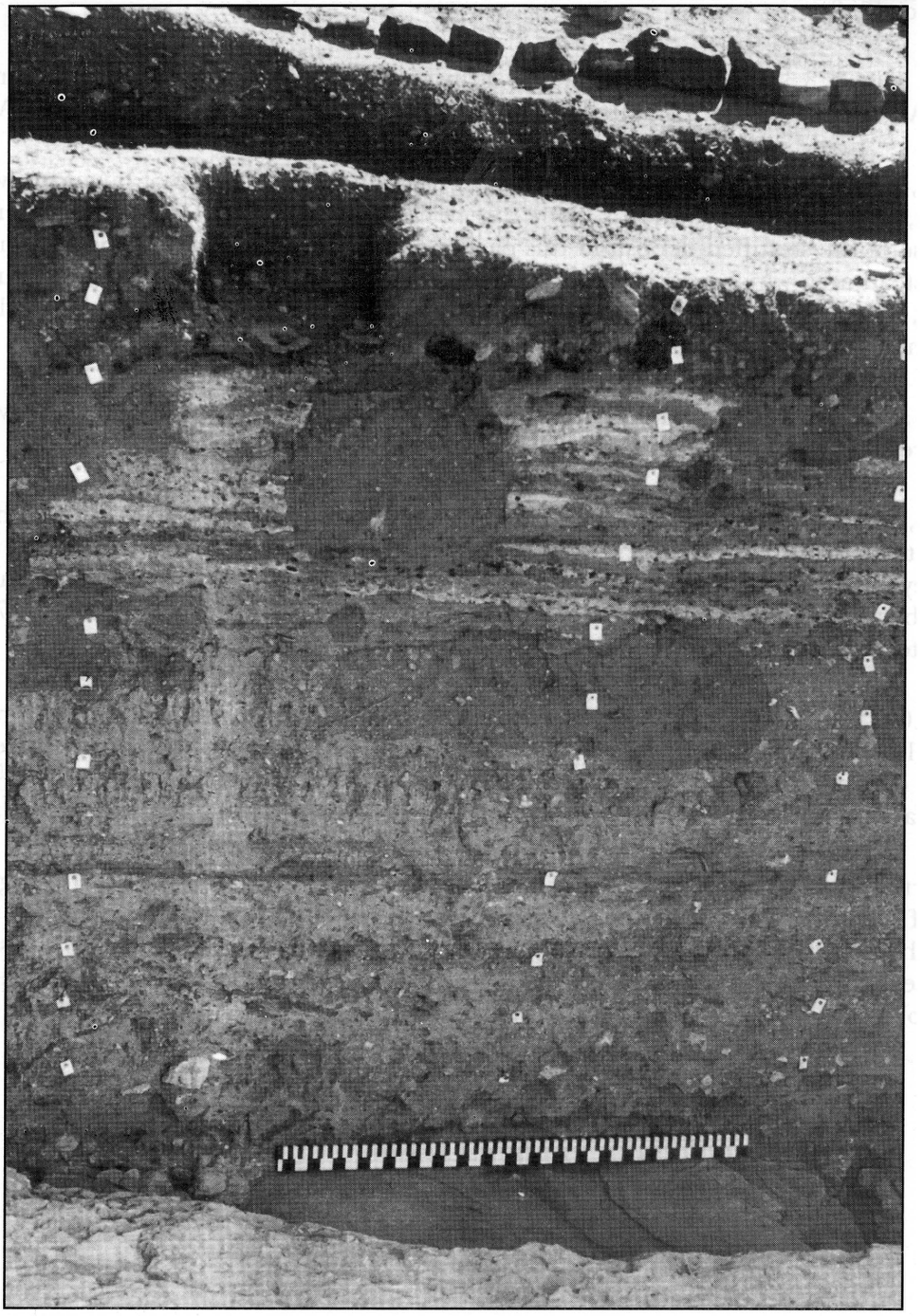

Figure 3.50[158]
Excavation Ts 6. A view of Profiles B2-B3 (cf. also Figure 3.51).

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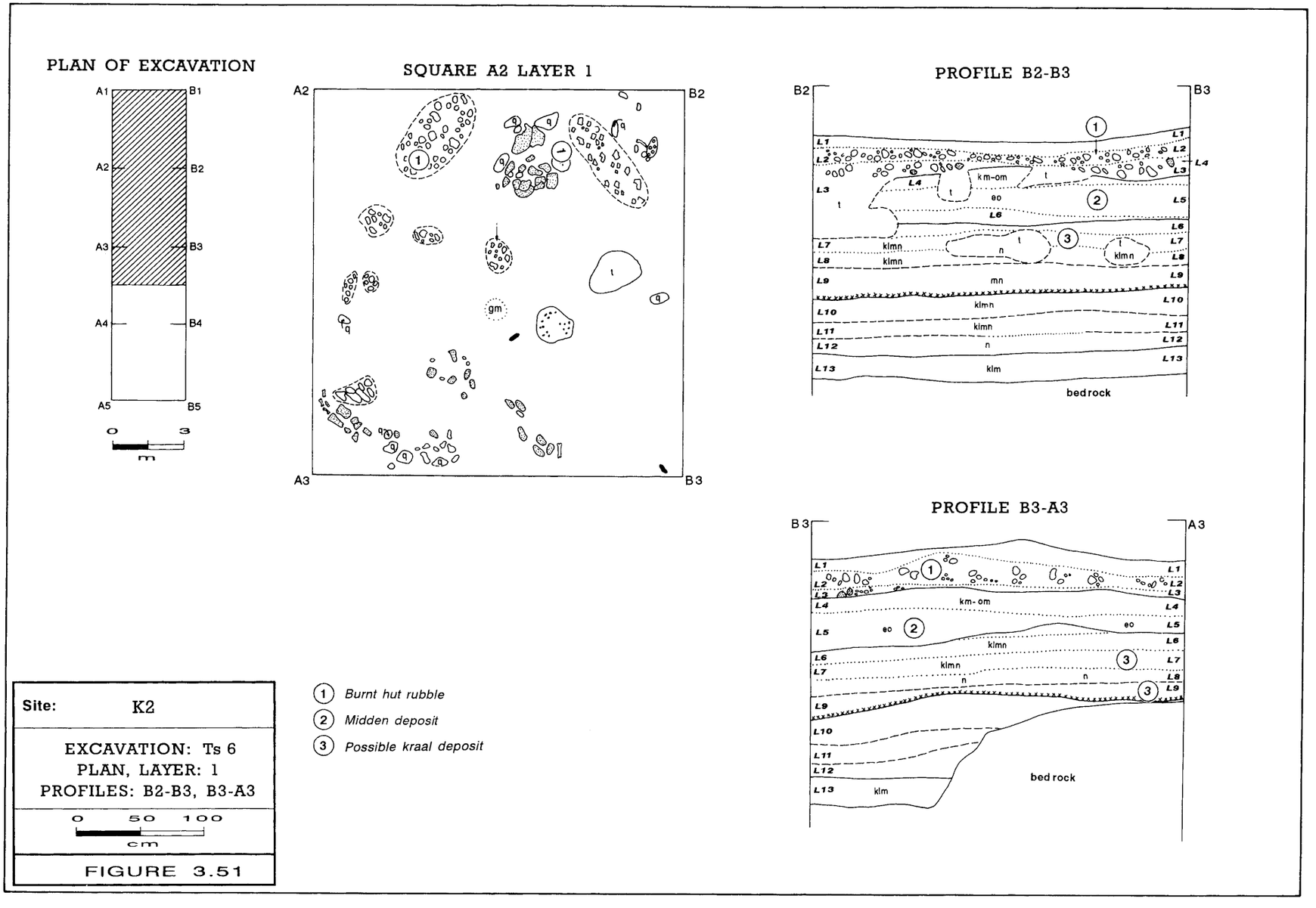

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3.3 The Mapungubwe site complex

General stratigraphy and excavations on the Mapungubwe complex

Although Mapungubwe Hill and the Southern Terrace were investigated and described as separate stratigraphc units during Phase Three of the Greefswald Archaeological Project, both belong to a single Iron Age settlement site of an estimated 10 hectares. Mapungubwe Hill is generally interpreted as the settlement site of high-ranking community members, and the Southern Terrace contains most of the settlement deposits representing the settlement remains of large communities during a settlement sequence of approximately 260 years.

Mapungubwe Hill

General aspects of Mapungubwe Hill

During the excavations in Phase 1, between 1934 and 1940, Gardner removed most of the archaeological deposits on the north-western part of Mapungubwe. The deposits in the central part of the Hill were, to a large extent, excavated by Jones and Schofield in 1934, exposing the remains of stone walling. Numerous mortar holes can be observed in the rock surface of the Hill. A small portion of the deepest deposits are still present on the north-western perimeter of the settlement area on Mapungubwe.

The remains of gravel floors are still visible in the collapsed walls of the old excavations on Mapungubwe Hill. In the lower layers, these floors are mostly made of red mudstone gravel and yellow to yellow-white mudstone gravel. Mudstone deposits are exposed by natural erosion on the slopes of the hills adjacent to Mapungubwe. Floors in the upper layers on Mapungubwe Hill are made of gravel from weathered dolerite intrusions in the surrounding landscape.



Figure 3.52[159]
An aerial view of Mapungubwe Hill from the south-west, ca 1972 (cf. also Figure 3.53).

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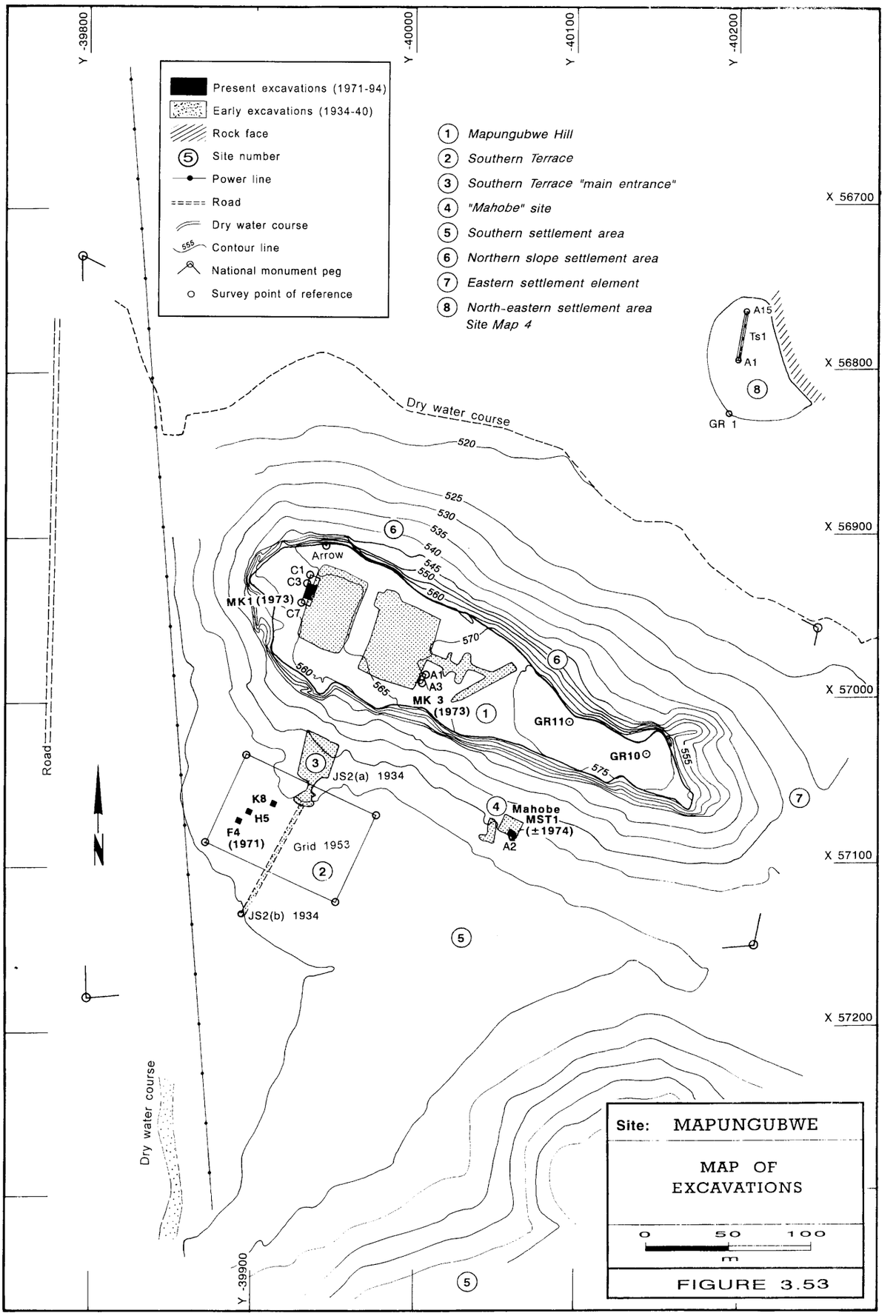

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Excavation Mk 1

Mk 1 (cf. Figures 3.54 to 3.74) was excavated in 1973 in the collapsed north-western wall of Gardner's excavation (cf. Figure 3.54) in the deep depression close to the north-western end of Mapungubwe Hill. Mk 1 was meant to investigate the only remaining complete stratification and to obtain as much stratigraphic information as possible to support a reconstruction of the site chronology and cultural contents of the Hill.

Mk 1 was a small grid of 18m x 6m, subdivided into squares of 3m x 3m (cf. Figure 3.63) located more or less inside Sections 4 and 5 of Gardner's Block 7, which he had not excavated, and was situated adjacent to his Section 6, which he did excavate.

Layer 1 (cf. Figures 3.63 to 3.65) in Mk 1 was the weathered surface of the deposit. It consisted of soft light brown fine-grained sandy soil with an abundance of grass roots. The layer contained a little household refuse such as bone fragments and potsherds[160].

Layer 2 (cf. Figures 3.55 to 3.56 and 3.63 to 3.65) was a deposit of light brown, soft, sandy soil containing more household refuse than Layer 1, mainly potsherds and bone fragments. Patches of two yellow-brown, thin floors made of dolerite gravel were present in Square B3 (cf. Figure 3.65(1)), as were another dolerite floor in Square B4, a small concentration of potsherds and a bone fragment as well as a concentration of stones in Square B3, and a stone platform built with flat stones in a horizontal position on vertical stones at Profile C3-C4[161] (cf. Figure 3.63(1)). An obvious aspect of the layer was the large quantity of arrow linkshafts and points scattered throughout the layer. These also occurred as a concentration in Square B4[162].

Layer 3 (cf. Figures 3.63 to 3.65) was a thin deposit of soft light brown sandy soil in Squares A3 and B3. The layer contained the remains of two patches of yellow-brown, thin floors made of dolerite gravel[163] (cf. Figures 3.65(2) and 3.64(1)).

Layer 4 (cf. Figures 3.63 to 3.66) varied from light brown sandy soil which tended to become hard, compacted, red-brown soil. The stone platform in Square B3 in Layer 2 had apparently already been in use in Layer 4, where a thin dolerite gravel floor was built against the stone platform (cf. Figure 3.63(2)). This particular floor had been renewed and consisted of three layers of floor with no particular planform[164]. Another thin, dolerite floor was present in Squares B3, A4 (cf. Figures 3.66(1), 3.64(2)) and in B4. The layer also contained a patch of ash at Profile C3-C5 and two arrow linkshafts or points made of bone[165].

Layer 5 (cf. Figures 3.63 to 3.65 and 3.67) consisted mainly of light brown sandy soil, small concentrations of stones and patches of thin floors made of yellow-brown dolerite gravel (cf. Figures 3.67(1) to (5) and 3.64(4)). One of these floors could have been the floor of a double-walled hut[166].

Layer 6 (cf. Figures 3.63 to 3.65 and 3.68) was a deposit of light brown sandy soil and contained the remains of several patches of thin floors made of dolerite gravel, two stone platforms and two concentrations of stones. In Squares A4 and B4, the remains of a thin, yellow-brown floor made of dolerite gravel[167] with a circular planform was surrounded by what appeared to be wall foundation trenches and may be interpreted as the remains of a hut, or possibly two superimposed huts (cf. Figure 3.68(1)), half of which was lost when the wall of Gardner's excavation collapsed. The relationship between these floors and the overlying floor remains in Layer 5 was not clear. Patches of dolerite gravel floor were also present in Square B3 (cf. Figures 3.68(2)) and in Squares A5 and B5.

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In Square B3 at Profiles B3-C3 and C3-C4 in Layer 6, two rough stone platforms[168] were present (cf. Figures 3.63(4), 3.65(7), 3.68(3) to (4), 3.69(8) to (9)) and a few potsherds and stone concentrations in Squares A3 and B5 respectively (cf. Figure 3.68(5), (6)). In Squares A4, B4 and B5, several arrow linkshafts or points were scattered through Layer 6. These arrow components might be related to the base of Layer 2, directly overlying Layer 6 in these squares[169].

Layer 7 (cf. Figures 3.63 to 3.65 and 3.69) was mainly a deposit of light brown sandy soil which contained household refuse and patches of floors made of yellow-brown dolerite gravel, and also a few patches of floors made of red mudstone gravel. The patches of red gravel floor[170] were located in Square A3, close to the wall of Gardner's old excavation (Figure 3.69(1)). In Square B3, a well-made, thin mustard yellow floor made of dolerite gravel[171] against the stone platform[172] could have been an outdoor living floor associated with the platform (cf. Figures 3.69(2) to (9), 3.65(7), (9)). In Squares A4 and B4, patches of floors[173] were made of yellow-brown dolerite gravel and red mudstone gravel (cf. Figures 3.69(3) to (5), 3.64(6), (7)) and were partially surrounded by the hut wall foundation trench (Figure 3.69(10)) from above. In Squares B4 and B5 across Profile B5-C5, there was a patch of floor which had been made of a mixture of yellow-brown dolerite gravel and light yellow mudstone gravel (cf. Figure 3.69(7)). In Square B5 at Profile C5-C6, a patch of floor had been made of yellow-brown dolerite gravel (cf. Figure 3.69(6)).

Layer 8 (cf. Figures 3.63 to 3.65 and 3.70) consisted mainly of light brown sandy soil which contained potsherds and bone fragments scattered throughout the layer, concentrations of bone fragments, potsherds and stones, and the remains of various gravel floors. In Square A3, the remains of two rough floors[174] consisted of coarse, red mudstone gravel (cf. Figures 3.70(1), (2) and 3.65(12)). In Square B3, patches of a thin, rough floor[175] had been made of a mixture of yellow-brown dolerite gravel and coarse, red mudstone gravel (cf. Figures 3.70(3), 3.63(7) and 3.65(10)). Underlying this floor at Profile C3-B3 was another patch of floor[176] made of mudstone and dolerite gravel (cf. Figure 3.65(11). Features in the centre of Excavation Mk 1 in Squares A3, B3, A4 and B4 were the remains of a succession of several floors[177] made of a mixture of yellow-brown dolerite gravel and coarse, red mudstone gravel, light yellow mudstone gravel and yellow-brown dolerite gravel respectively (cf. Figures 3.70(4) to (7) and 3.63(8)). In Square A5 and adjacent parts of Squares A4 and B5, the remains of what appeared to be a hut with an estimated diameter of approximately 2,10m consisted of a floor[178] made of coarse, red mudstone gravel, and a thin wall made of wooden poles (cf. Figures 3.70(9) to (10)). The cultural material in the layer included a concentration of stones, bone fragments and potsherds[179], and a concentration of small glass beads[180] in Square A5.

Layer 9 contained the complex remains of homestead structures consisting of gravel floors, burnt hut wall clay, charred poles in wall foundations, stone structures and household refuse. The layer was subdivided into Layers 9(i) and 9(ii).

In Layer 9(i) (cf. Figures 3.63 to 3.65 and 3.71), patches of a rough floor[181] in Square A3 consisted of red mudstone gravel (cf. Figures 3.71(1) and 3.65(14)). On the perimeter of this floor there was a stone with a small hollow in its flat upper surface, which could have been a small mortar stone[182]. In Square B3, the floor remains consisted of a patch of floor made of coarse, red mudstone gravel[183] at Profile B3-C3 (cf. Figures 3.71(2) and 3.65(15)), a patch of floor made of yellow-brown dolerite gravel[184] at Profile C3-C4 (cf. Figures 3.71(3) and 3.63(9)), and a patch of floor made of yellow-brown dolerite gravel[185] which partially surrounded one of the mortar stones[186] (cf. Figure 3.71(4)). Three separate mortar stones[187] were each mounted in a small pit with supporting stones in Square B3 (cf. Figure 3.71(5) to (7)). Also in Square B3, a fourth pit with supporting stones[188] but without a mortar stone (cf. Figure 3.71(8)), was filled up with sandy soil deposit. In Squares B3 and B4, a weathered floor

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made of red mudstone gravel[189] partially surrounded one of the mortar stones[190] (cf. Figure 3.71(14)). A concentration of stones (cf. Figure 3.71(16)) was found in Square B5, as well as ash and household refuse[191] which later turned out to be part of the contents of a large refuse pit[192] in Layers 9(ii), 10 and 11 (cf. Figures 3.71(15) and 3.65(20)). A small patch of wall clay[193] was observed in Profile B6-A6.

Layer 9(ii) (cf. Figures 3.63 to 3.65 and 3.72) consisted mainly of light brown sandy soil, gravel floors and burnt hut remains. Most of the remains of the huts had previously been removed during Gardner's excavation. In Square A3, the remains of a part of a hut-shaped structure consisted of a thick layer of burnt wall clay[194], (cf. Figure 3.65(16)), a gravel floor[195] which was burnt black, surrounded by charred wall posts which were 2cm to 3cm thick in a foundation trench[196] (cf. Figure 3.72(1) to (2)). This hut was surrounded by an external floor made of compacted sand[197] (cf. Figure 3.72(3)) which was also burnt black. On this floor and in the burnt clay of the wall, charred grain and other seeds[198] were found. In Square B3 at Profiles B3-C3 and C3-C4, the remains of a floor made of a mixture of red mudstone gravel and yellow-brown dolerite gravel[199] could possibly have been a hut floor (cf. Figures 3.72(4) and 3.63(12)). Also in Square B3, a patch of white ash contained charred grain[200].

In Square A4 in Layer 9(ii), burnt wall clay[201] and the underlying remains of a floor made of coarse, red gravel[202] appear to be part of a structure (cf. Figures 3.72(5), 3.64(11) to (12)) which had, to a large extent, been removed by Gardner's excavation team. In Square A5 and the adjacent parts of Squares A4 and B5, the remains of a hut with an inner diameter of 1,47m consisted of burnt wall clay and a floor made of red mudstone gravel[203] (cf. Figure 3.72(12)). Part of this hut disappeared when the wall of Gardner's excavation collapsed. Patches of floor made of red mudstone gravel[204] were found in Squares B4 and A5.

In Square B5 and an adjacent part of Square A5, a large pit penetrated Layers 9(ii), 10 and 11 down to bedrock and was filled with ashy soil which also contained pure ash, stones, bone fragments, potsherds, and arrow linkshafts or points made of bone[205] (cf. Figures 3.72(9), 3.73(21) and 3.65(20)). The pit and its contents could be related to Layer 2.

Layer 10 (cf. Figures 3.63 to 3.65 and 3.73) consisted of the burnt remains of a big double-walled hut, external gravel floors around the hut, and household refuse scattered throughout the layer. A large part of the hut had been removed by Gardner's excavation team. In Square A3 and the adjacent part of Square B3, the remains of three floors made of red mudstone gravel[206] and a patch of floor made of yellow-brown dolerite[207] had been made in vertical succession (cf. Figures 3.73(1) to (4) and 3.65(22)), apparently as a new open-air living floor outside the big hut. In Square B3, at Profiles B3-C3 and C3-C4, a patch of floor made of a mixture of light red mudstone gravel and yellow-brown dolerite gravel[208] and a patch of coarse red gravel[209] as well as charred posts[210] could have been part of a hut-shaped structure (cf. Figures 3.73(5) to (7) and 3.63(13) to (14)).

On one side of Gardner's excavation, various features were part of the remaining half of a large double walled hut (cf. Figures 3.73(8) to (13) and 3.64(13) to (14)). This hut consisted of widely spread burnt wall clay[211], the remains of an inner hut space with a diameter of 2,60m consisting of a well-made floor of hard, compacted red mudstone gravel[212] and a surrounding inner wall[213] built of poles which were 3cm to 4cm thick in a foundation trench with a width of 5cm to 8cm, and an outer space consisting of a floor[214] and the surrounding outside wall[215] of charred posts which were 4cm to 7cm thick in a foundation trench with a width of 5cm to 10cm, and a stepped entrance[216] (cf. Figure 3.73(8) to (12)). What appears to be a storage space between the inner and outer wall was flanked by radial rows of poles[217] (cf. Figure 3.73(13)). It had no floor and contained charred seeds[218] and bone fragments. The hut remains had been damaged by wall foundation trenches from overlying layers.

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On the outside of the hut, an external floor made of red mudstone gravel[219] was flanked by a slightly curved wall of poles[220] which were 3cm to 5cm thick and which joined the hut at a right angle. Lying on this floor were a concentration of potsherds[221] in Square B3, and the remains of 8 charred posts[222] lying side by side in Square B4, next to the hut. External floors against the hut consisted of a succession of floors made of red mudstone gravel[223] on one another in front of the hut entrance, patches of a stepped floor made of coarse, red mudstone gravel[224] in Squares B4 and B5 (cf. Figure 3.73(19)), and patches of floors made of red mudstone gravel[225] at Profile C4-C5 in Square B4 (cf. Figures 3.73(14) and (19) and 3.63(16) and (17)). The external floors were partially destroyed by the refuse pit[226] in Square B5.

Layer 11 (cf. Figures 3.63 to 3.65 and 3.74) consisted mainly of prominent gravel floors and the remains of at least three huts, two of which had been burnt down. Traces of open-air walls made of poles were also present. Underneath burnt wall clay in Square A5, the layer contained loose, light brown sandy soil with patches of broken floors tilted in various directions, as well as bone fragments, potsherds and other household refuse. In Square A3, the burnt debris of part of a structure appeared to be the remains of a possible hut, consisting of burnt wall clay[227] overlying a floor made of red mudstone gravel[228], a hut wall base at Profile B3-A3[229] and a curved wall trench containing charred post remains[230] which were 2 cm to 6cm thick (cf. Figures 3.74(1) and (3) and 3.65(23)). A feature consisting of a concentration of upright bone fragments was exposed next to Profile C3-B3 (cf. Figure 3.59).

At Profile B4-C4 in Squares B3 and B4 and adjacent portions of Squares A3 and A4, the remains of a hut with a diameter of approximately 1,90m consisted of burnt wall clay[231] overlying a thin, damaged floor made of compacted sand[232]. The surrounding hut wall remains consisted of charred posts[233] which were 2cm to 5cm thick in a wall foundation trench with a width of 10cm (cf. Figures 3.74(4) to (5), 3.64(26) and 3.64(29)). A concentration of bone fragments and the sherds of a pottery vessel were lying on the hut floor underneath the wall clay. A surrounding stepped, open-air floor against the outside of the hut (cf. Figures 3.74(2) and 3.64(32)) consisted of hard, compacted, red mudstone gravel[234].

In Square B3 in Layer 11, a curved row of upright, flat stones[235] was part of a circular stone structure, the rest of which was expected to be in the as yet unexcavated Square C3. The structure was left intact in Excavation Mk 1 (cf. Figure 3.74(6)). Against this stone structure at Profile C3-C4, the remains of part of a small, unidentified structure consisted of burnt wall clay and an almost straight row of charred posts[236] which were 2cm to 4cm thick (cf. Figure 3.74 (7)). The rest of this structure was expected still to be in the unexcavated deposit of Square C2. It was also left intact in Square B3.

In Square B5, the remains of a small hut (cf. Figure 3.74(11)) consisted of burnt wall clay[237], the remaining portion of a hut floor made of red mudstone gravel[238], a surrounding wall trench[239] with a width of 10cm to 15cm and post holes which were 2cm to 3cm wide. The correct context of this hut could possibly be the base of Layer 10.

The rest of Layer 11 consisted of burnt wall clay, especially in Square A4[240] and Squares A5, C4 and C5[241], as well as underlying parts of external floors made of red mudstone gravel[242]. Charcoal from the huts in Layer 11 were dated to 1243 AD[243] and 1252 AD[244] (cf. Appendix 8.9).

Underneath Layer 11, which was the bottom layer of the stratification, several mortar holes were present in the sandstone rock surface of Mapungubwe Hill.

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Figure 3.54[245]
Excavation Mk 1. A view of the excavation in progress.

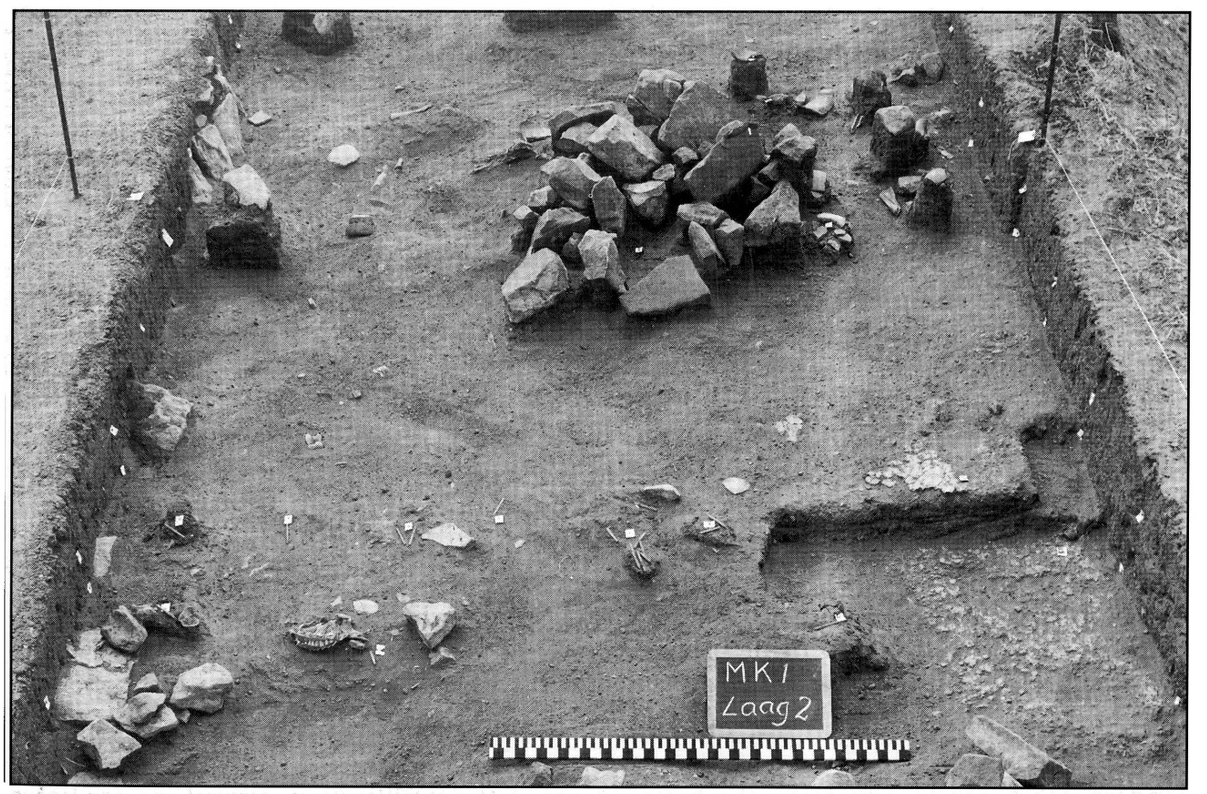

Figure 3.55[246]
Excavation Mk 1. A view of Layer 2.

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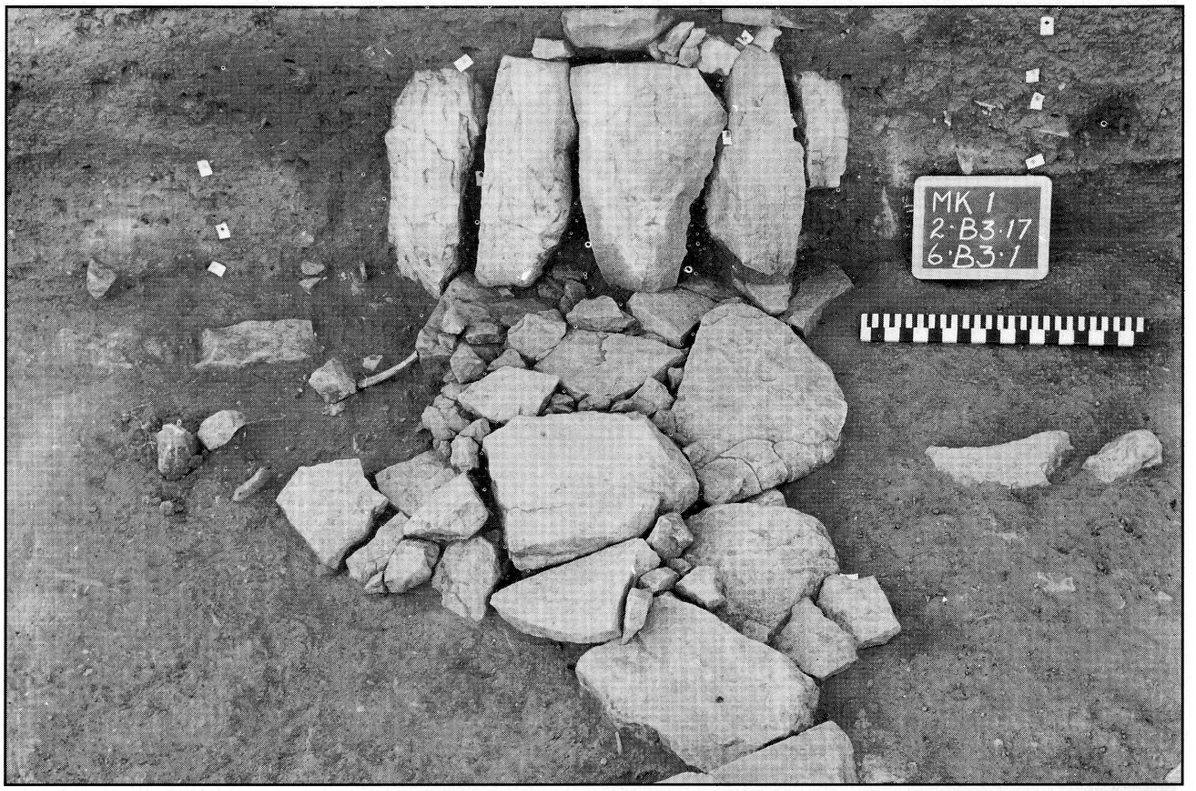

Figure 3.56[247]
Excavation Mk 1. A view of stone platforms: Feature B3.2.17 can be seen in the background with stone platform B3.6.1 in the foreground (cf. also Figures 3.66 and 3.69).

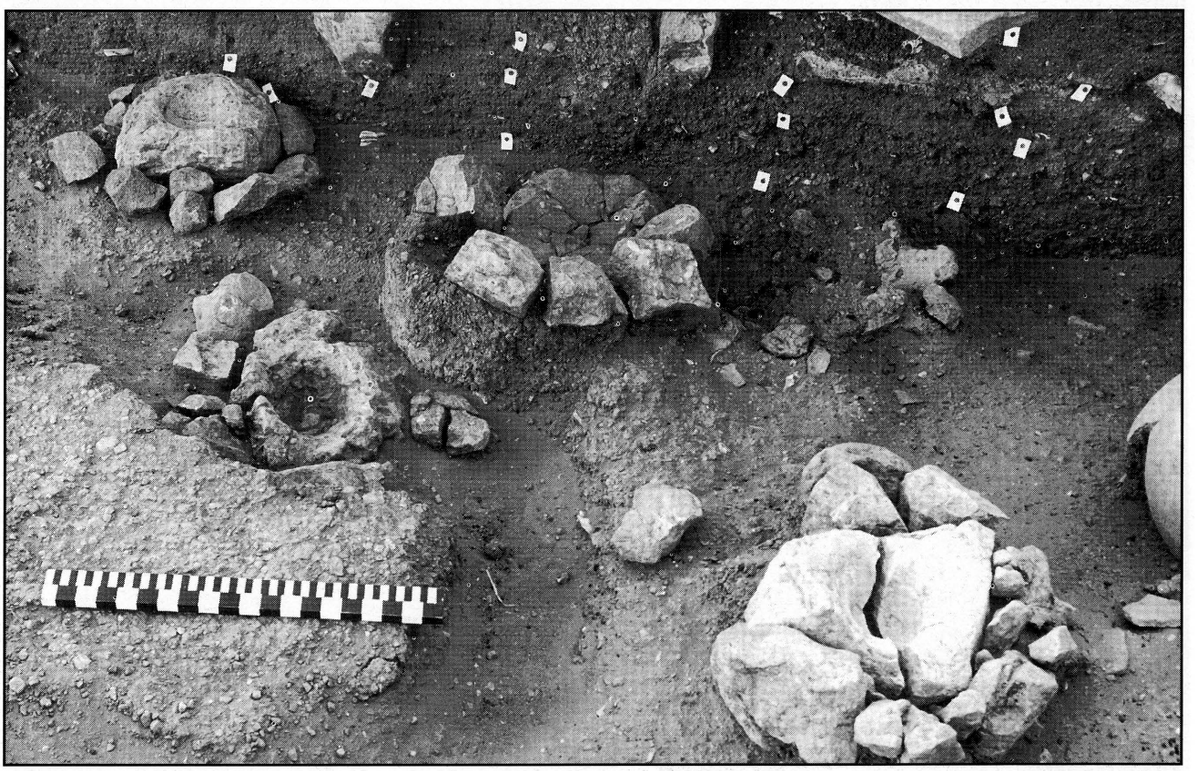

Figure 3.57[248]
Excavation Mk 1. A view of mortar stones *in situ*: Features B3.9(i).6, B3.9(i).5, B3.9(i).7, B3.9(i).4 (cf. also Figures 3.71 and 3.72).

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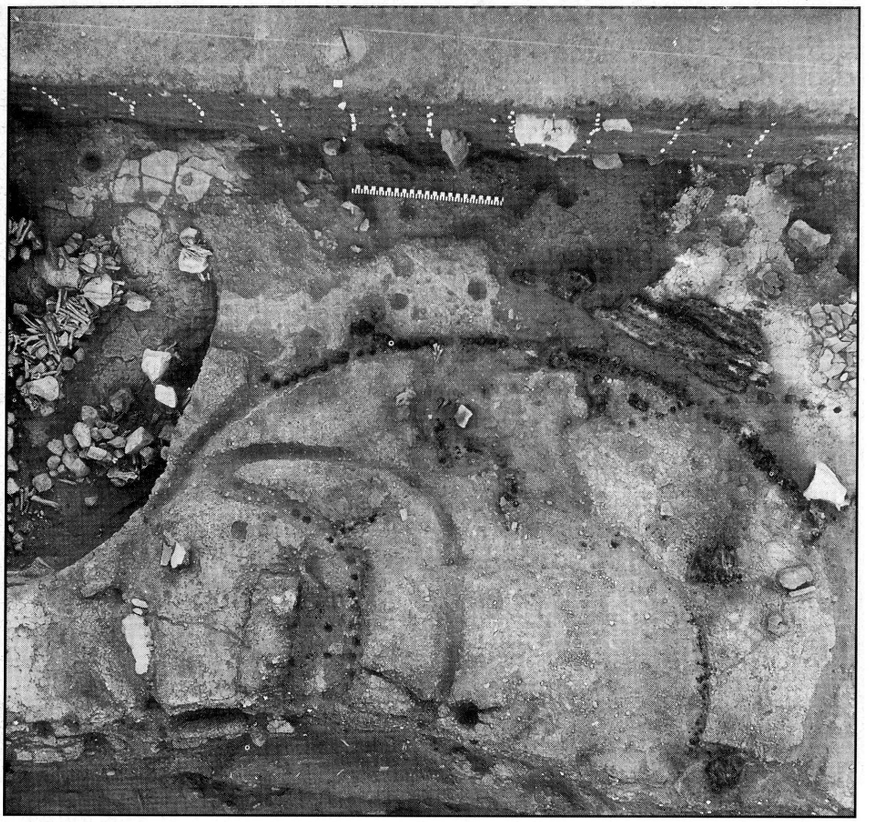

Figure 3.58[249]
Excavation Mk 1, Layer 10. A view of Features A4.10.2 to 5 (cf. also Figure 3.73).

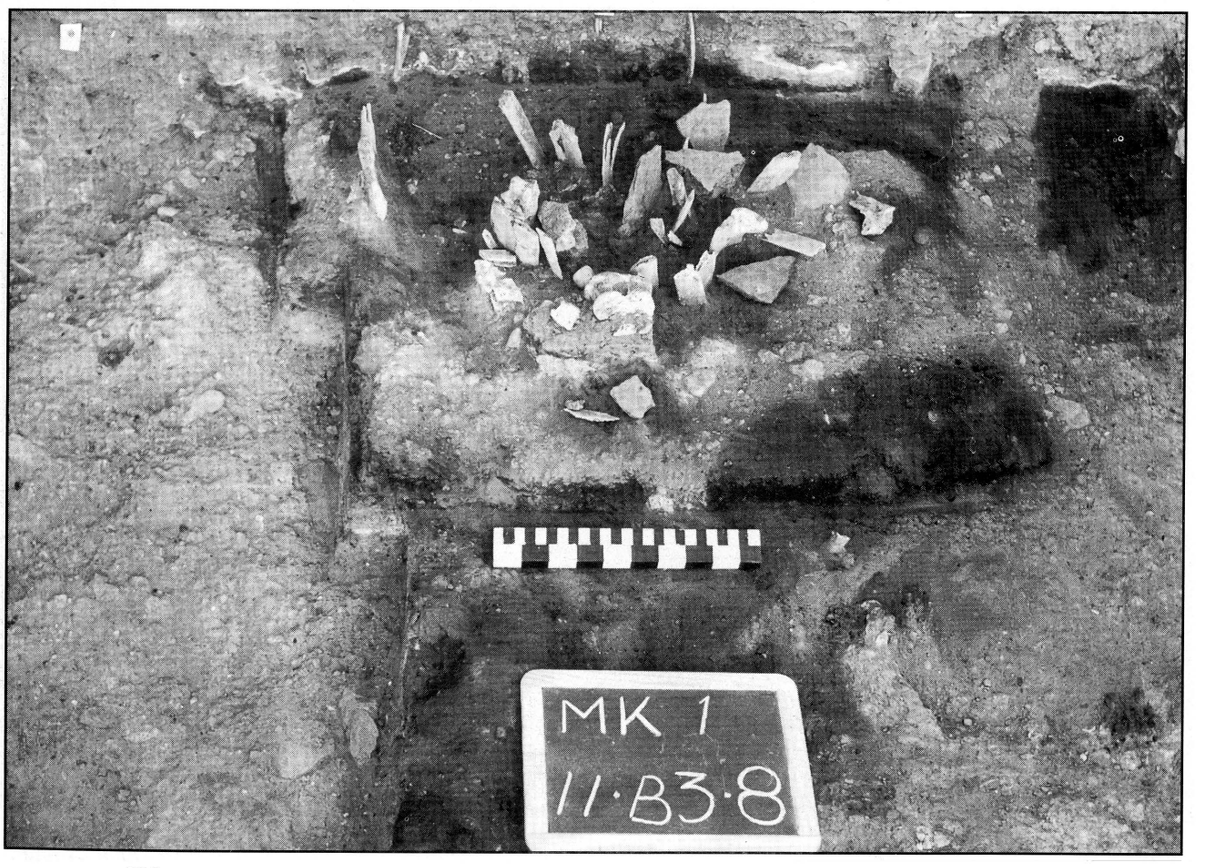

Figure 3.59[250]
Excavation Mk 1, Layer 11. A view of Feature B3.11.8 consisting of bone fragments, many set upright.

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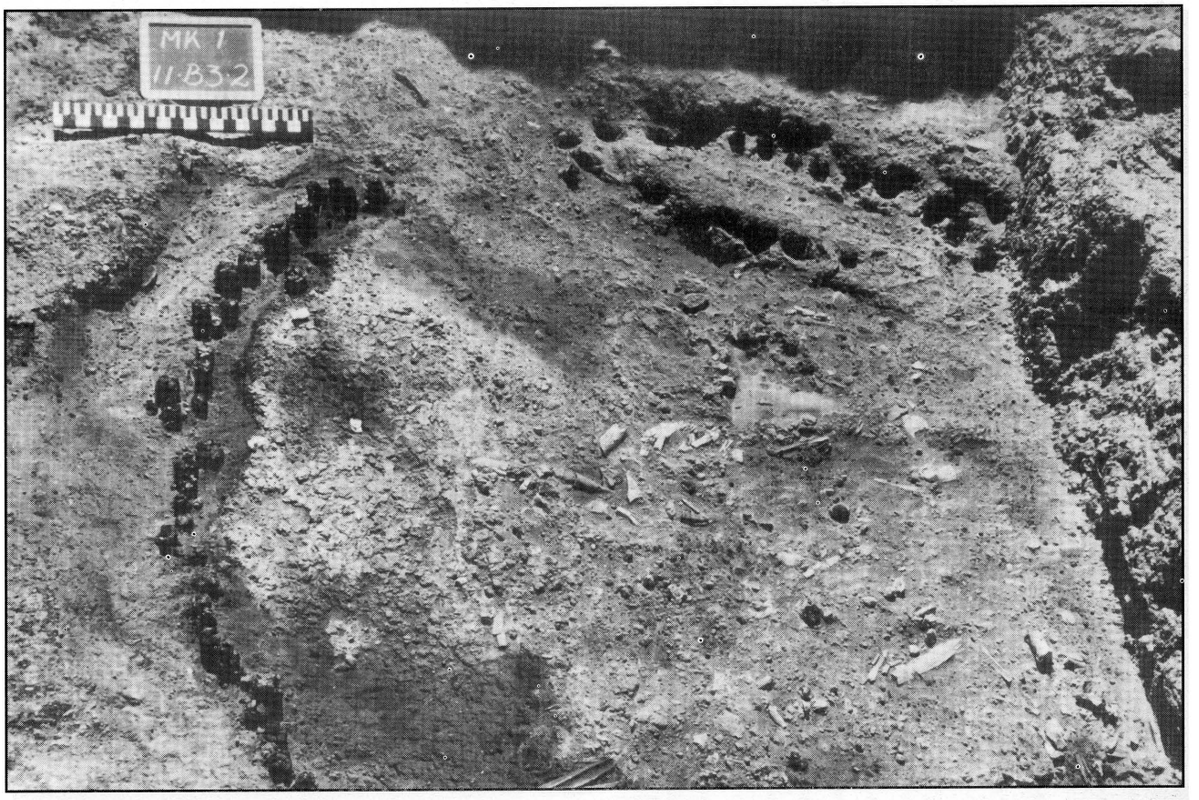

Figure 3.60[251]
Excavation Mk 1, Layer 11. A view of Features A3.11.1 to 3 (cf. also Figure 3.74).

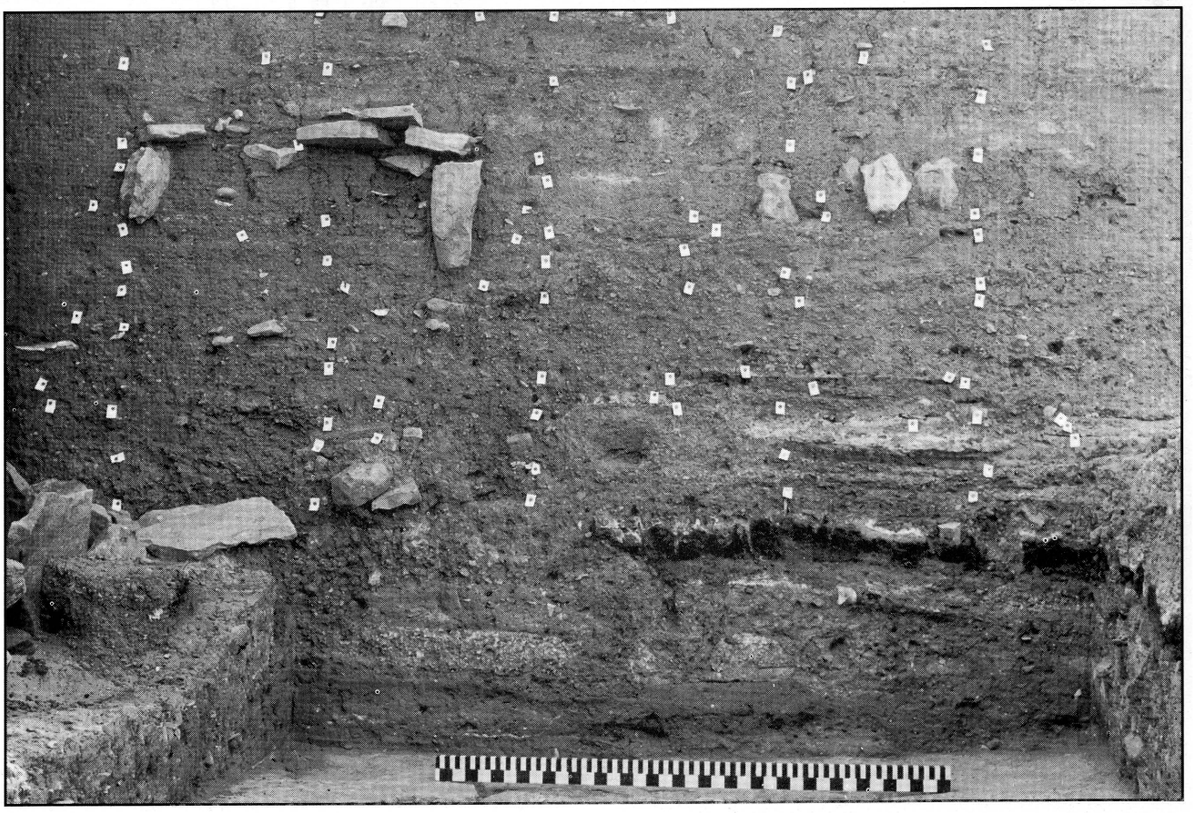

Figure 3.61[252]
Excavation Mk 1. A view of Profiles C3-B3 (cf. also Figure 3.65).

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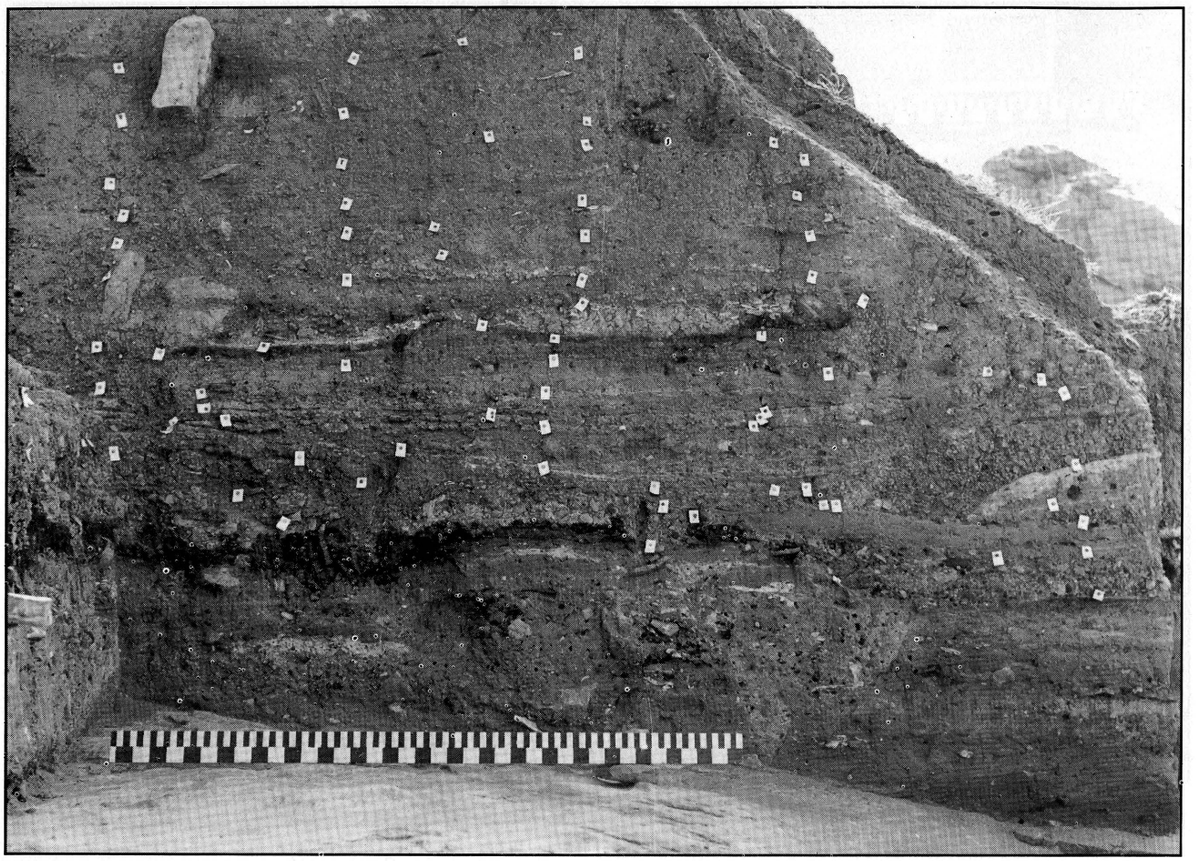

Figure 3.62[253]
Excavation Mk 1. A view of Profiles B3-A3 (cf. also Figure 3.65).

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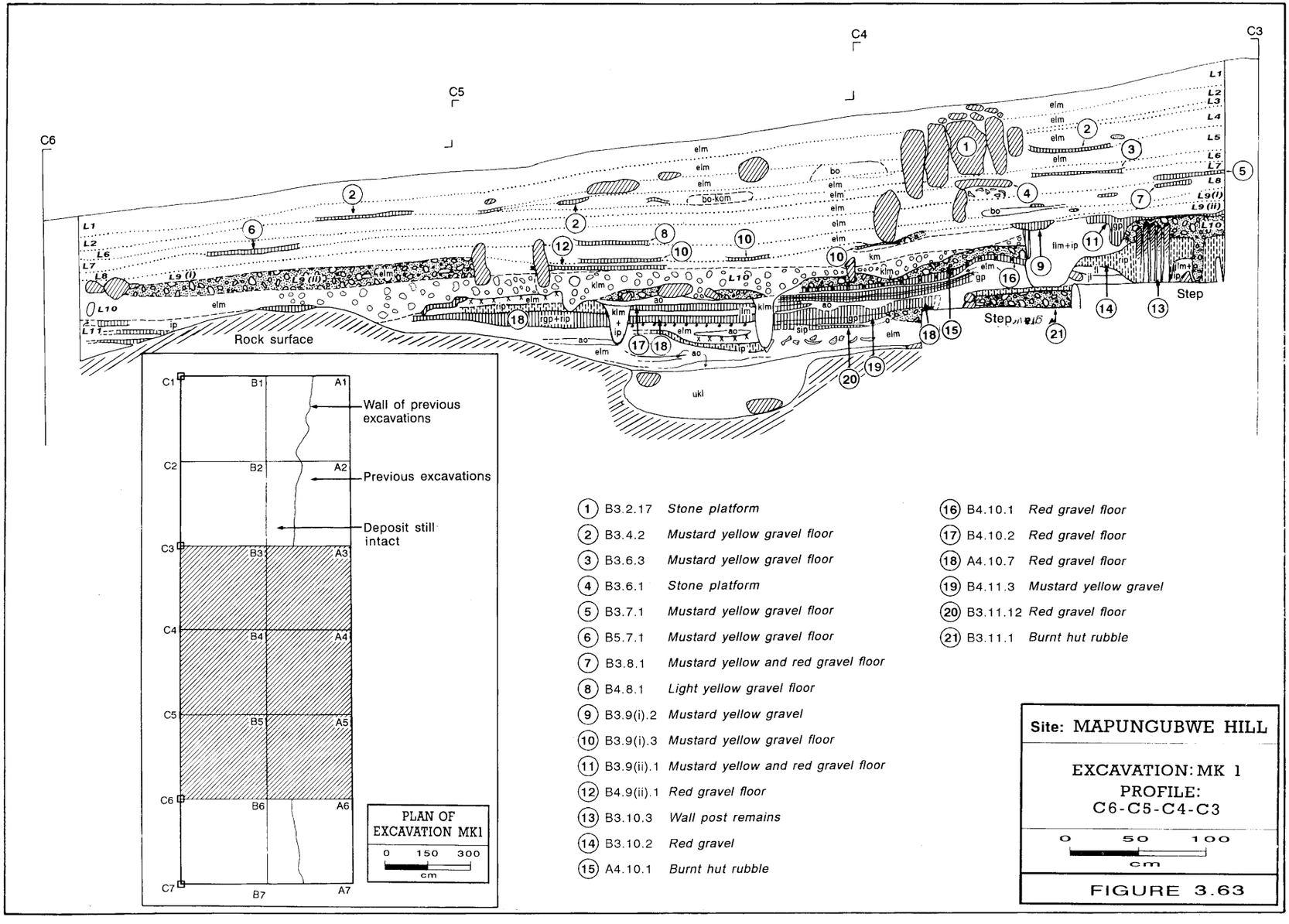

FIGURE 3.63

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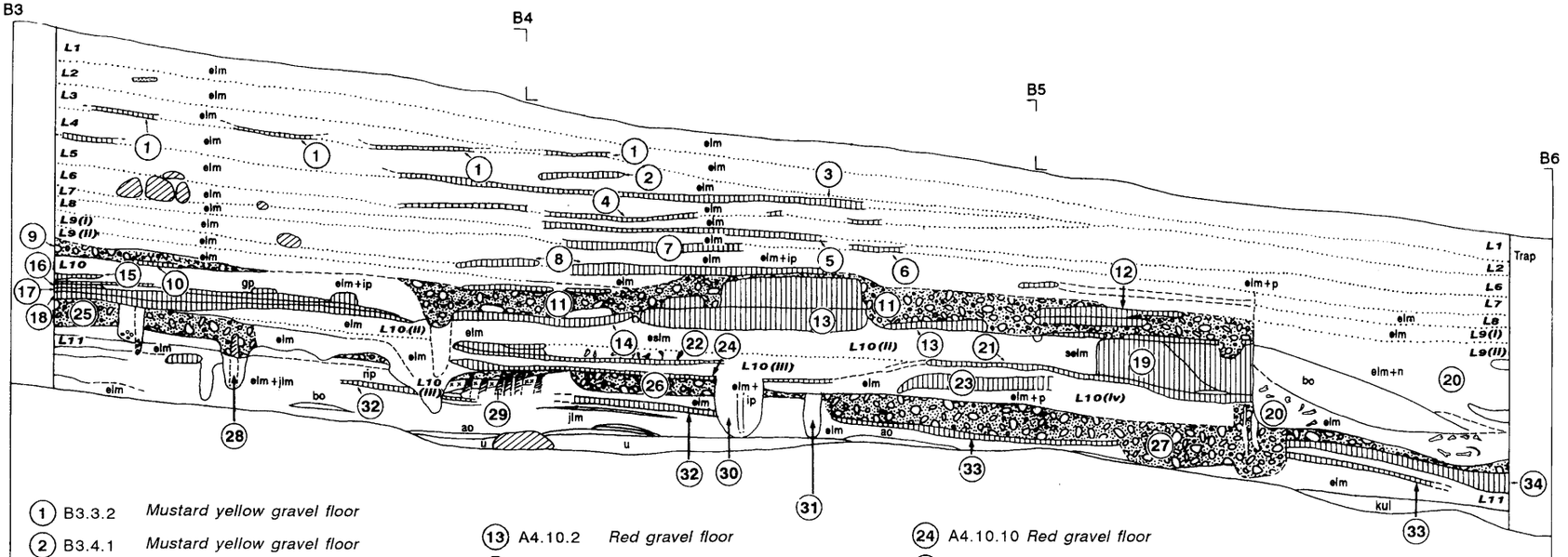

1. B3.3.2 *Mustard yellow gravel floor*
2. B3.4.1 *Mustard yellow gravel floor*
3. B3.4.2 *Mustard yellow gravel floor*
4. B4.5.1 *Mustard yellow gravel floor*
5. A4.6.2 *Mustard yellow gravel floor*
6. B4.7.1(1) *Mustard yellow gravel floor*
7. B4.7.1(2) *Mustard yellow gravel floor*
8. B4.8.3(1) *Mustard yellow and red gravel floor*
9. A3.9(ii).1 *Burnt hut rubble*
10. A3.9(ii).3 *Sand floor*
11. A4.9(ii).1 *Burnt hut rubble*
12. A4.9(ii).2 *Red gravel floor*
13. A4.10.2 *Red gravel floor*
14. A4.10.3 *Red and light yellow gravel floor*
15. A3.10.1 *Red gravel floor*
16. A3.10.3(2) *Red gravel floor*
17. A3.10.3(3) *Red gravel floor*
18. A3.10.3(4) *Red gravel floor*
19. A5.10.16 *Red gravel floor*
20. B5.9(ii).1 *Pit with ash, pot sherds, bone*
21. A4.10.7 *Red gravel floor*
22. A4.10.9 *Red gravel floor*
23. A4.10.8 *Red gravel floor*
24. A4.10.10 *Red gravel floor*
25. A3.11.1 *Burnt hut rubble*
26. B3.11.1 *Burnt hut rubble*
27. A5.11.1 *Burnt hut rubble*
28. A3.11.4 *Charred wall posts*
29. B3.11.2 *Charred wall posts*
30. A4.11.4 *Wall post holes*
31. A4.11.3 *Sand wall base*
32. A4.11.5 *Red gravel floor*
33. A4.11.2 *Red gravel floor*
34. A5.11.3 *Red gravel floor*

Site: MAPUNGUBWE HILL

EXCAVATION: MK 1
PROFILE:
B3-B4-B5-B6

0 50 100
cm

FIGURE 3.64

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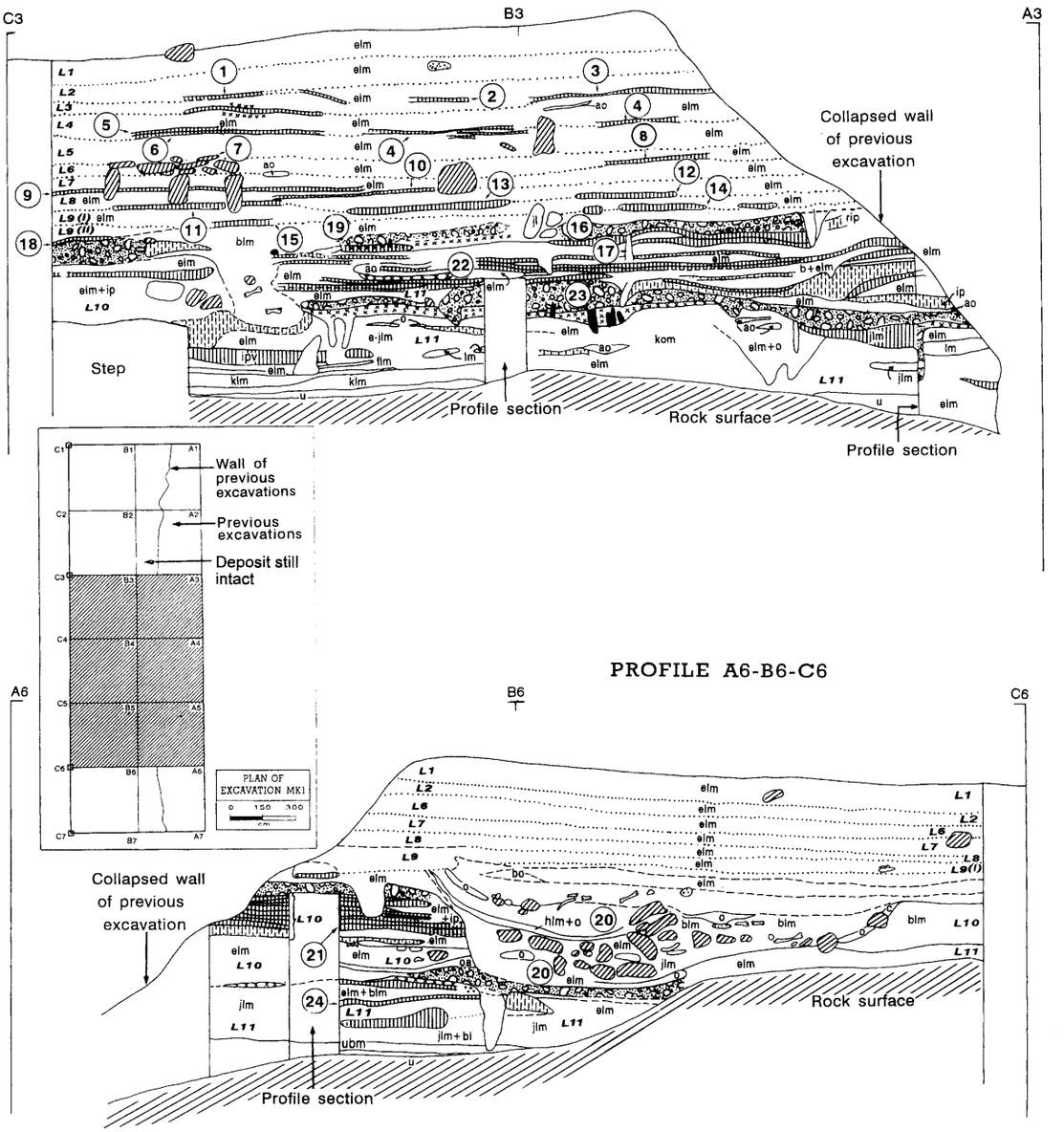

(1)	B3.2.2	*Mustard yellow gravel floor*	(13)	B3.8.3	*Mustard yellow and red gravel floor*
(2)	B3.3.1	*Mustard yellow gravel floor*	(14)	A3.9(i).1	*Red gravel floor*
(3)	B3.3.2	*Mustard yellow gravel floor*	(15)	B3.9(i).1	*Red gravel floor*
(4)	B3.4.2	*Mustard yellow gravel floor*	(16)	A3.9(ii).1	*Burnt hut rubble*
(5)	B3.4.2(2)	*Mustard yellow gravel floor*	(17)	A3.9(ii).2(2)	*Hut wall trench*
(6)	B3.4.2(3)	*Mustard yellow gravel floor*	(18)	B3.9(ii).1	*Red and mustard yellow gravel*
(7)	B3.6.2	*Stone structure*	(19)	A3.9(ii).3	*Sand floor*
(8)	A3.6.1	*Mustard yellow gravel floor*	(20)	B5.9(ii).1	*Pit with ash, potsherds, bone fragments*
(9)	B3.7.1	*Mustard yellow gravel floor*	(21)	A5.10.7-11	*Red gravel floors*
(10)	B3.8.1	*Red and mustard yellow gravel floor*	(22)	A3.10.1-3	*Layers of red gravel floor*
(11)	B3.8.2	*Red and mustard yellow gravel floor*	(23)	A3.11.1	*Burnt hut rubble*
(12)	A3.8.1	*Red gravel floor*	(24)	A5.11.3	*Red gravel floor*

Site: MAPUNGUBWE HILL

MK 1
PROFILES: C3-B3-A3
& A6-B6-C6

0 50 100
cm

FIGURE 3.65

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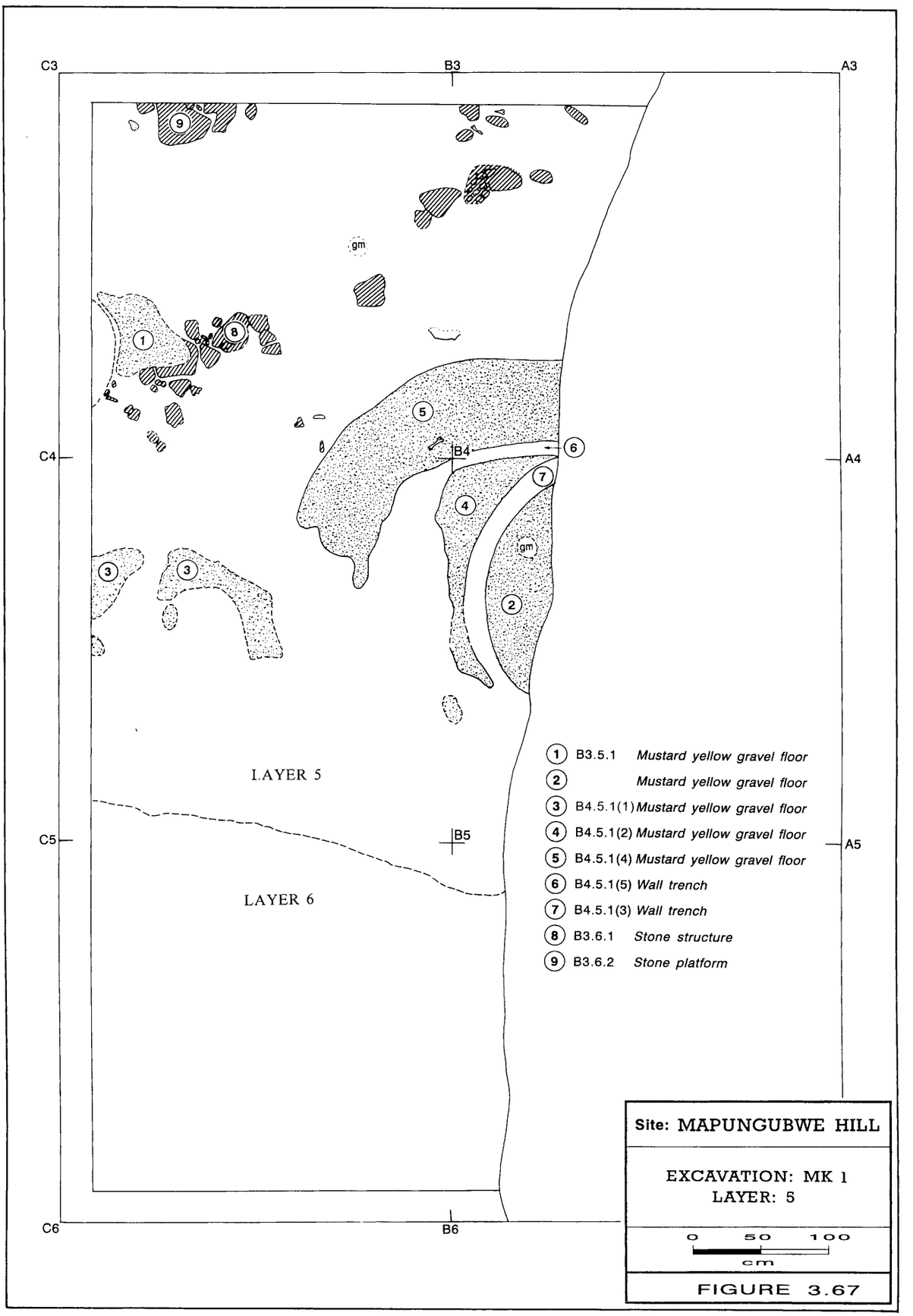

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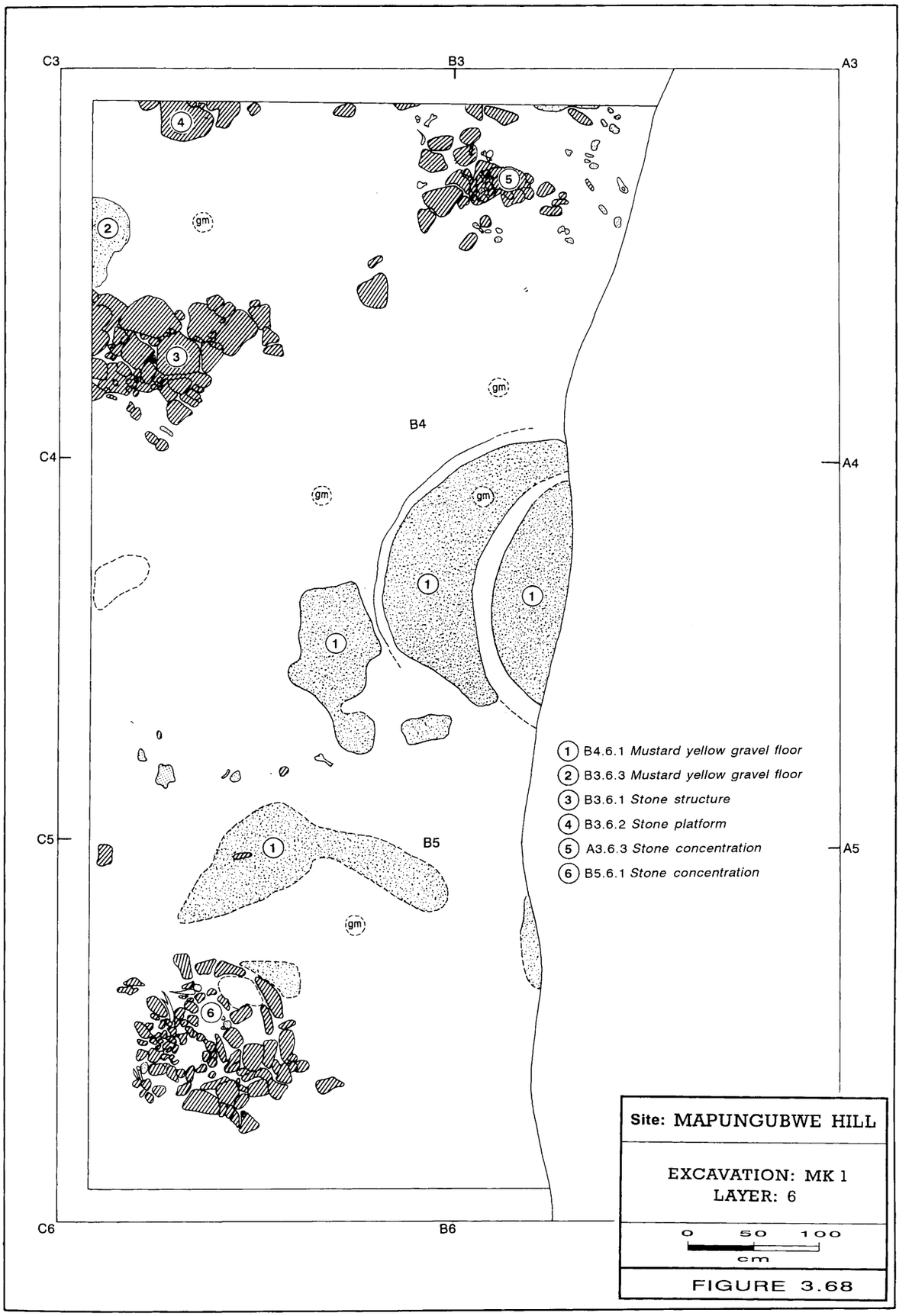

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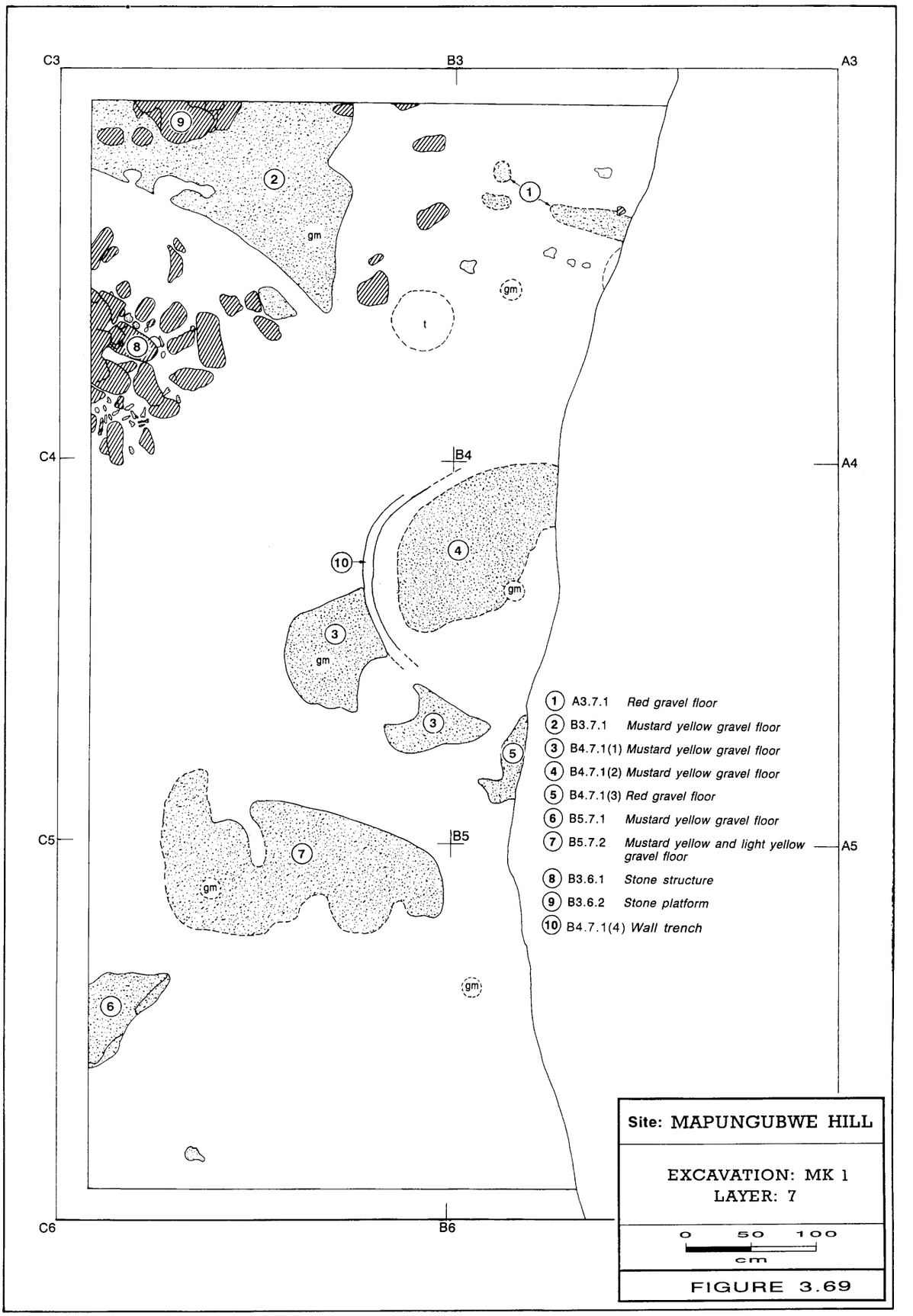

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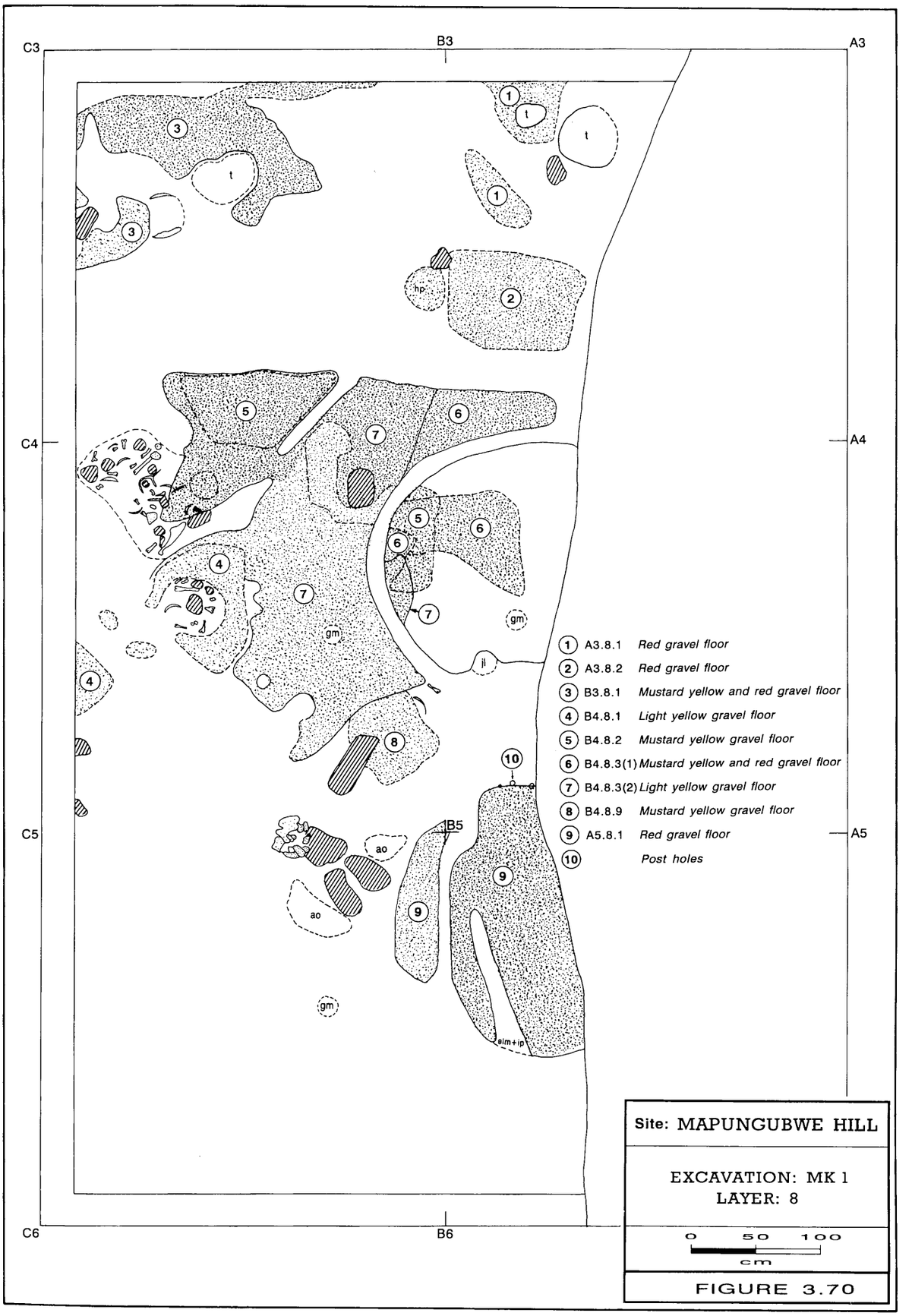

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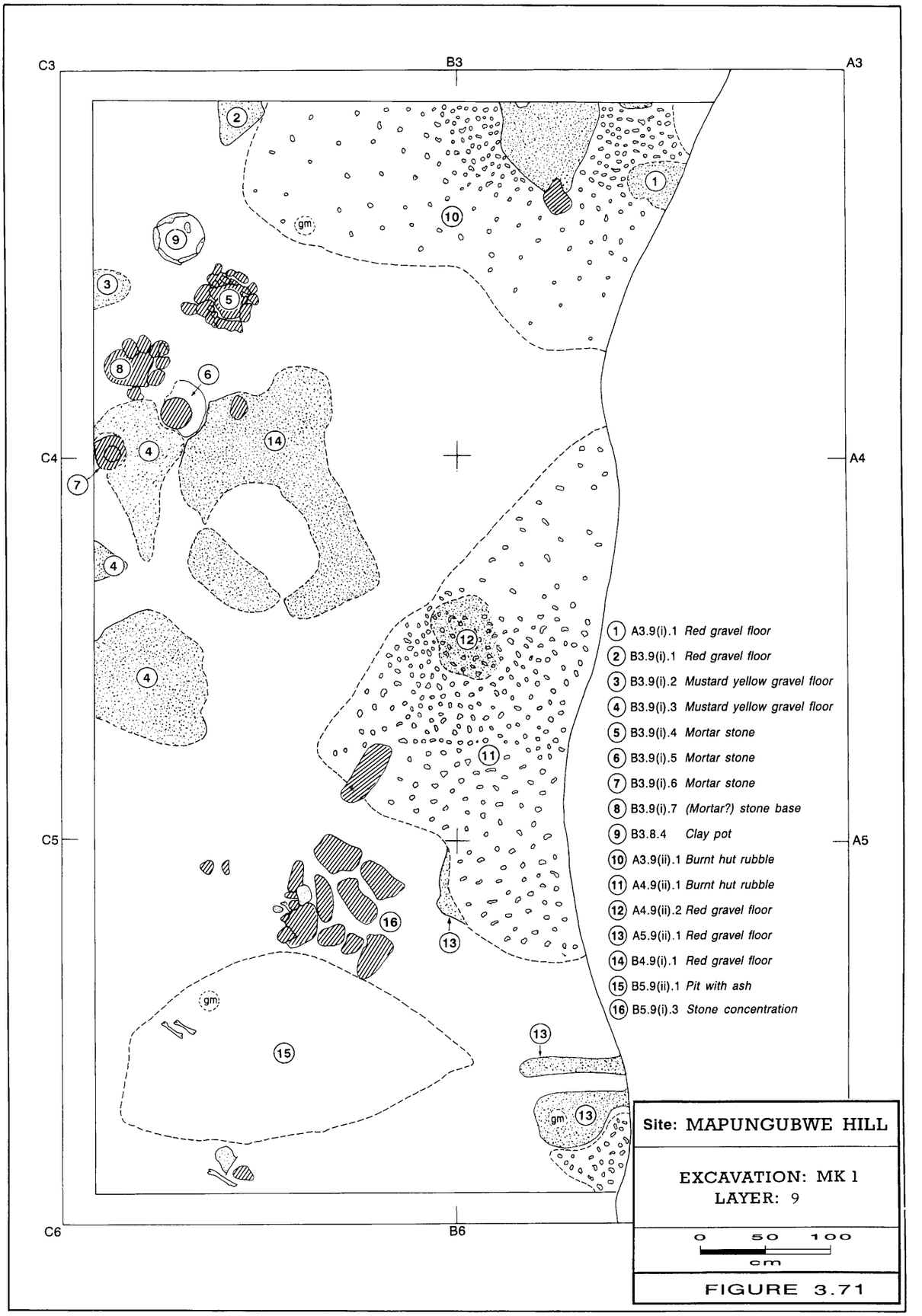

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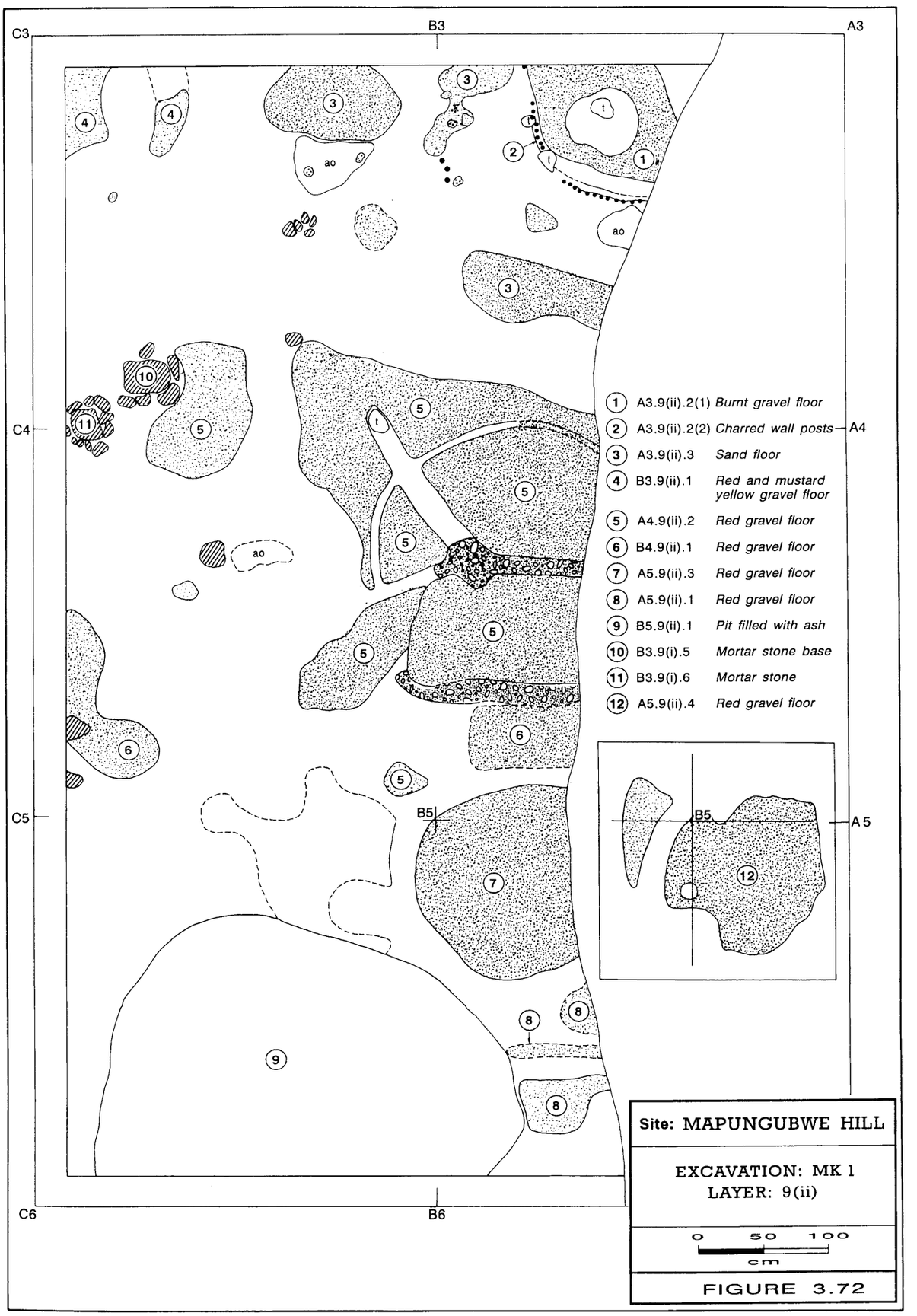

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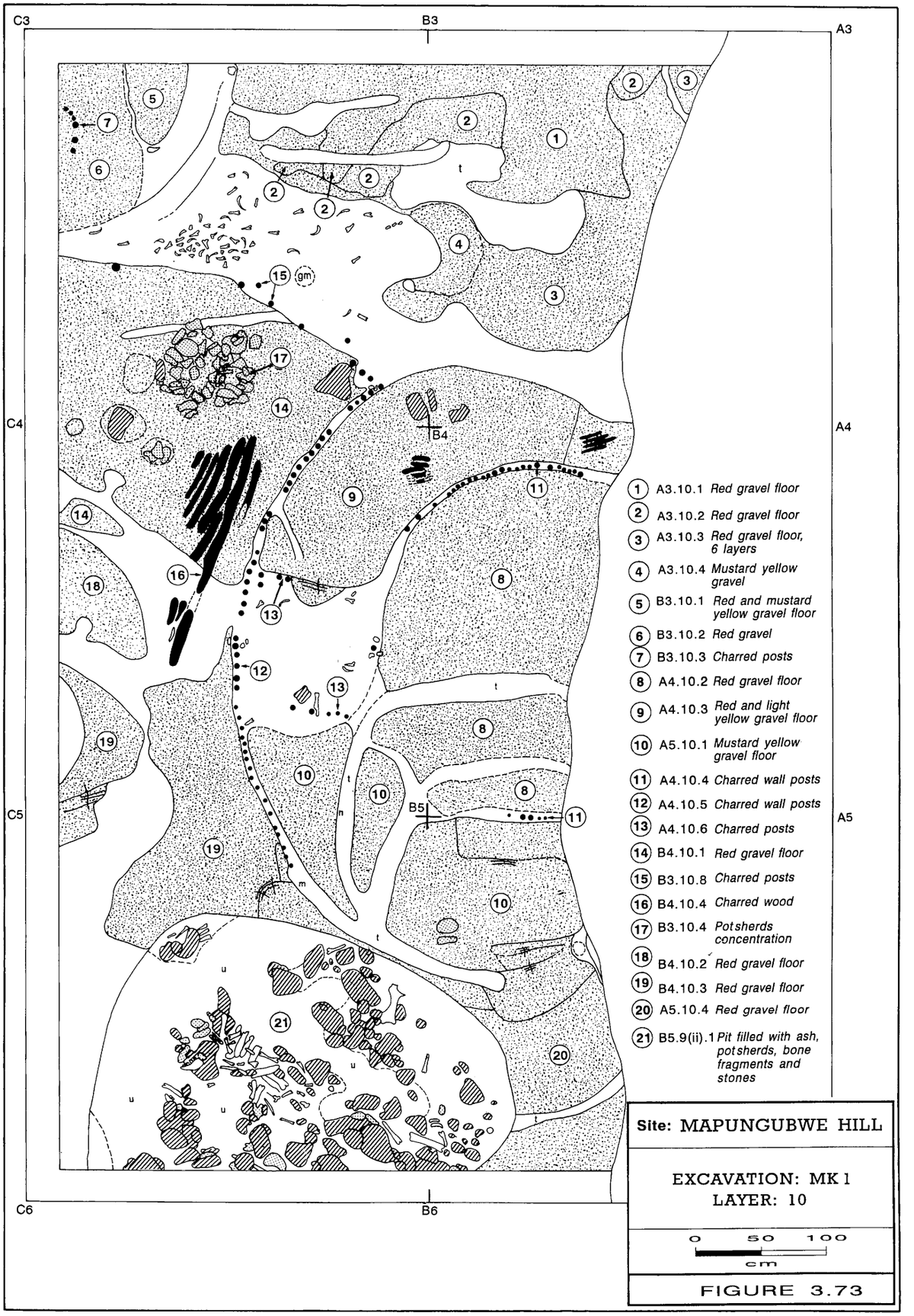

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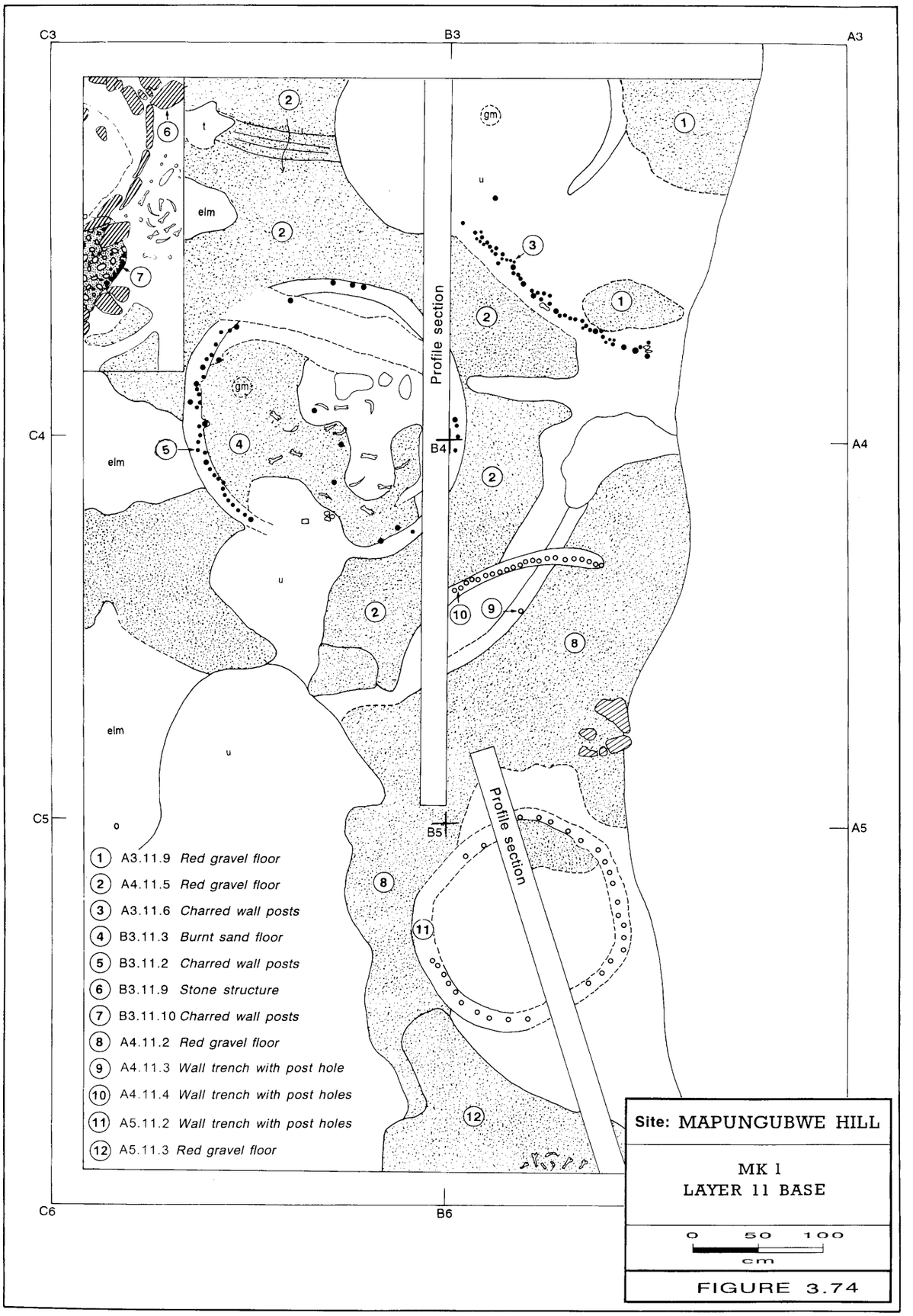

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Excavation Mk 3

The remains of thin floors made of yellow-brown dolerite gravel were visible in a portion of the collapsed eastern wall of Gardner's excavation of Mapungubwe Hill. In this visibly stratified portion of the Hill deposit relatively close to the grave area, Test Trench Mk 3 was excavated in 1973 in the wall of Gardner's old excavation. Mk 3 was a trench of 6m x 3m, subdivided into two squares of 3m x 3m. The excavation of Mk 3 was limited to the removal of a strip of 1m in the wall of Gardner's excavation[254].

Layer 1 consisted of a layer of light brown fine-grained, sandy soil which was stripped off as an arbitrary layer 15cm thick. It may be interpreted as weathered surface material, which contained a small number of artefacts[255]. The base of the layer contained many small stones scattered throughout the soil.

Layer 2 was a deposit of compacted, light brown sandy soil. It contained a patch of very light brown, fine sand and a concentration of stones[256] in Square A2. A clay pot[257] was *in situ* in the underlying deposit, with its rim only visible in Layer 2 in Square A1. A bone linkshaft or point and fragments of tortoise shell were found in Square A1. Two gold beads were also found in the layer[258].

Layer 3 (cf. Figure 3.76) consisted of light brown fine sandy soil which included many stones scattered throughout the layer. Several bone fragments were present at Profile B1-B2 and a patch of soft sand was found in Square A2. A fairly thin, yellow-brown layer of dolerite gravel[259] in the wall of the old excavation in Profile A1-B1 appeared to be the remaining part of a floor, most of which had been removed by Gardner's excavation team. In Square A2 and the adjacent part of Squares A1 and B2 was a large, thin floor of yellow-brown dolerite gravel[260] on which lay a large concentration of scattered stones. Layer 3 was dated to 1220 AD[261] (cf. Appendix 8.9).

Layer 4 (cf. Figure 3.76) was a thick deposit of light brown, sandy soil which contained the remains of several floors. This layer was subdivided into Layers 4(i), 4(ii) and 4(iii). The light brown sandy deposit in Layer 1 lay on a thin floor made of yellow-brown dolerite gravel[262] in Square A2 and the adjacent part of Square B2. Layer 4(ii) contained a concentration of stones in Square A1 and lay on the remains of a thin floor made of yellow-brown dolerite gravel[263]. The light brown sandy deposit of Layer 4(iii) was lying on the remains of a floor which consisted of several patches of yellow-brown dolerite gravel[264] in Square A1, B1, A2 and B2, as well as on a thin floor made of yellow-brown dolerite gravel[265] in Squares A2 and B2.

Layer 5 was a deposit of light brown sandy soil, overlying several patches of floors made of yellow-brown dolerite gravel. These remains consisted of a patch of gravel floor[266], mostly in Square A1, a very small portion of a floor[267] at Profile A1/B2-A3/B3, a floor[268] in Square A2, and a very small patch of floor[269] in a wall of Gardner's excavation in Square B2.

Layer 6 consisted of light brown sandy soil which contained a small concentration of potsherds and bone fragments[270] as well as charred seeds[271] in Square A2, and several patches of floors. These floor remains were part of a well-made floor of yellow-brown dolerite gravel[272] with a blackened, burnt surface mainly in Square B1, a rough patch of floor made of red mudstone gravel[273] in Squares A1 and B1, and a well-made floor of yellow-brown dolerite gravel[274] with a blackened, burnt surface mostly in Square A2.

Layer 7 (cf. Figure 3.76) was a deposit of light brown sandy soil which contained a patch of compacted gravel[275] in Squares A1 and A2, and patches of a floor made of mixed red and light yellow mudstone gravel[276] in Squares A2 and B2.

Underneath Layer 7, a deposit of sterile, light brown to red sand and sandstone fragments overlie the weathered sandstone surface of Mapungubwe Hill[277].

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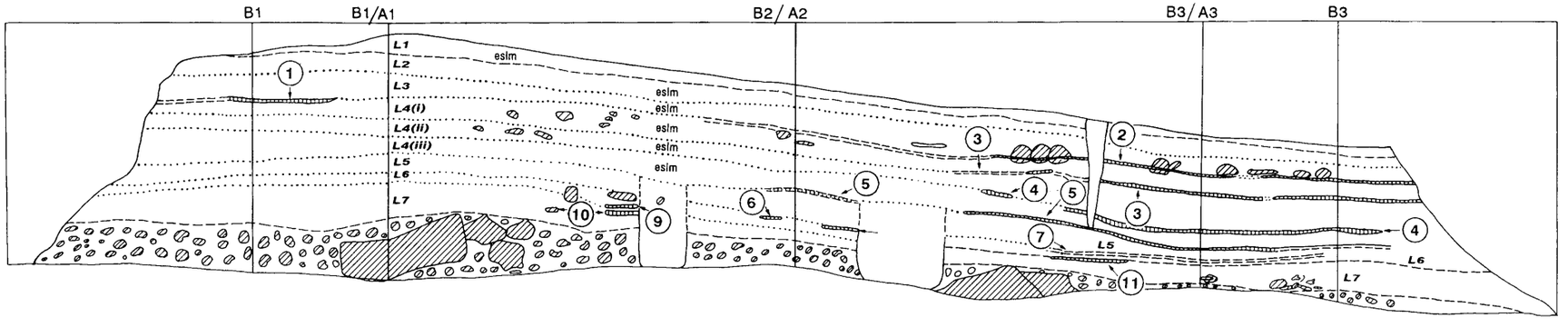

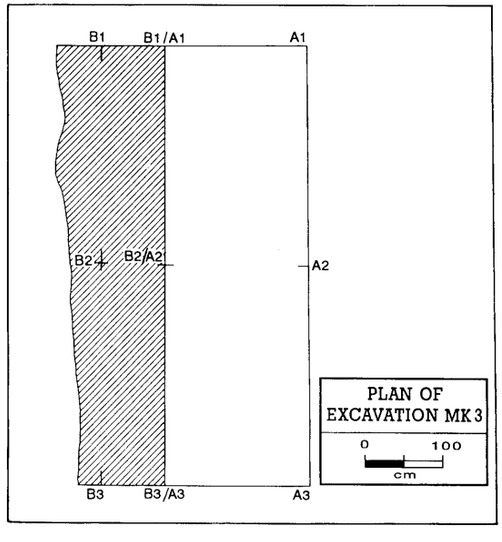

(1) A1.3.2 *Mustard yellow gravel floor*
(2) A2.3.3 *Mustard yellow gravel floor*
(3) A2.4(i).1 *Mustard yellow gravel floor*
(4) A2.4(ii).1 *Mustard yellow gravel floor*
(5) A2.4(iii).1 *Mustard yellow gravel floor*
(6) A1.5.2 *Mustard yellow gravel floor*
(7) A2.5.1 *Mustard yellow gravel floor*
(8) A2.5.2 *Mustard yellow gravel floor*
(9) A1.6.1 *Mustard yellow gravel floor*
(10) A1.7.1 *Compacted gravel*
(11) A2.7.1 *Red gravel floor*

Site: MAPUNGUBWE HILL

EXCAVATION: MK3
PROFILES:
B1-B1/A1-B2/A2-
B3/A3-B3

0 100
cm

FIGURE 3.75

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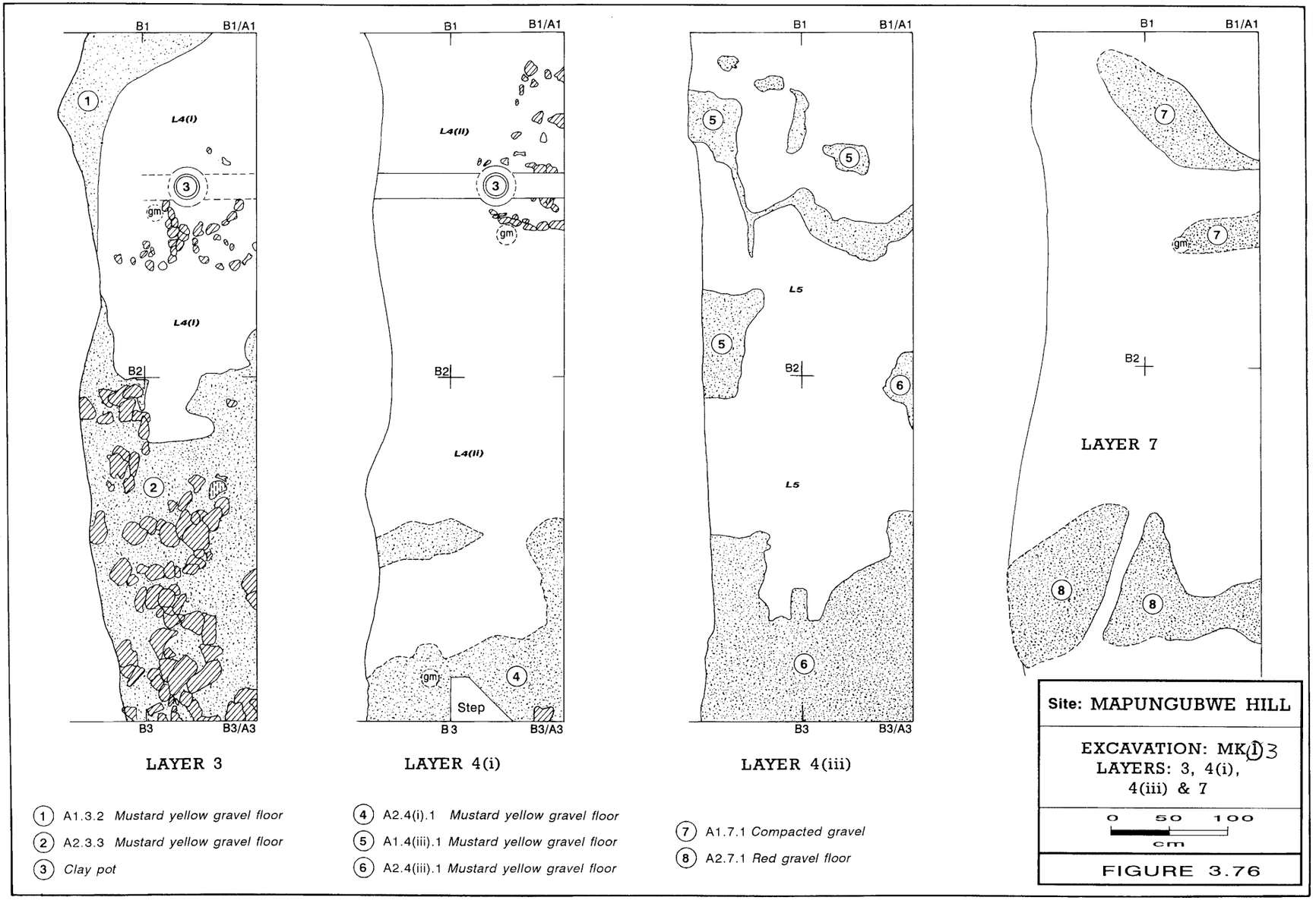

(1) A1.3.2 *Mustard yellow gravel floor*
(2) A2.3.3 *Mustard yellow gravel floor*
(3) *Clay pot*
(4) A2.4(i).1 *Mustard yellow gravel floor*
(5) A1.4(iii).1 *Mustard yellow gravel floor*
(6) A2.4(iii).1 *Mustard yellow gravel floor*
(7) A1.7.1 *Compacted gravel*
(8) A2.7.1 *Red gravel floor*

FIGURE 3.76

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The Southern Terrace

General aspects of the Southern Terrace

The focal point of the Southern Terrace is the so-called main entrance to Mapungubwe Hill between and behind the huge sandstone boulders at the southern foot of the Hill. Here, practically all the upper deposits were removed by Jones and Schofield during their excavations JS 2(a) in 1934[278] (cf. Figure 3.53).

Not much information was recorded of their huge test trench JS 2(b) which cut through the Southern Terrace from the main entrance area to the southern perimeter of the Southern Terrace[279] (cf. Figure 3.53).

A second test trench through the Southern Terrace was needed to obtain detailed stratigraphic data as well as a full, representative collection of archaeological materials from precisely recorded stratified contexts. However, insufficient time and funds were available for such a large excavation. Consequently, a row of three test pits were excavated during 1971. The test pits were between the main entrance and the incomplete excavations of Coertze and Sentker of 1953 to 1954 close to the southern perimeter of the Southern Terrace. These test pits were excavated in Squares F4, H5 and K8 in the existing 1953 excavation grid. The grid was subdivided into squares of 12 feet x 12 feet or 3,66m x 3,66m[280] (cf. Figures 3.52 and 3.53).

Prominent features of the Southern Terrace are its stone terrace walls and prominent stratified settlement sequence, including the remains of numerous burnt huts, external gravel floors, stone platforms and mortar stones. The floors in the lower layers mostly consist of red and light yellow mudstone gravel from nearby mudstone deposits. The floors in the upper layers had been made of mustard-yellow dolerite gravel from the weathered dolerite outcrops in the nearby hills.

Excavation F4

Sentker removed the upper levels in the L-section of his Square F4 during 1953[281] (cf. Figure 3.85). The rest of the square was excavated during 1971[282] (cf. Figures 3.53 and 3.77 to 3.85).

Layer 1 (cf. Figure 3.84) was the upper layer and constituted the weathered surface of the deposits in Square F4. It was a thick layer and was consequently subdivided into Layers 1(i), 1(ii), and 1(iii).

Layer 1(i) consisted of grey-brown sandy soil, containing plant humus and grass roots as well as a substantial quantity of small potsherds[283]. Layer 1(ii) also consisted of grey-brown sandy soil, containing potsherds, bone fragments and stones scattered throughout the layer[284]. Layer 1(iii) consisted of grey-brown sandy soil and contained a concentration of small stones and several bone fragments[285].

Layer 2 (cf. Figure 3.84), a thick layer of ash, was subdivided into arbitrary levels 2(i), 2(ii), 2(iii) and 2(iv). Layer 2(i) consisted of grey ash, which contained a concentration of bones and bone fragments[286]. Layer 2(ii) varied from grey-brown sandy ash to grey ash and contained household refuse such as bone fragments, potsherds and charcoal[287]. Layer 2(iii) consisted of soft, fine, light grey sandy ash which contained several stones, potsherds and large bones as well as a patch of ash on a blackened surface[288]. Layer 2 (iv) consisted of soft, fine, sandy grey ash[289].

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Layer 3 (cf. Figure 3.84) contained the debris of a burnt hut and was subdivided into Layers 3(i), 3(ii) and 3(iii). Layer 3(i) consisted of the compacted brown soil and lumps of wall clay from the upper part of the hut debris[290]. Layer 3(ii) consisted of yellow-brown burnt wall clay which contained a small quantity of household refuse[291]. Layer 3(iii) was the lowest level of the mound of burnt hut wall debris and contained lumps of wall clay with pole impressions, charcoal and a few charred seeds[292].

Layer 4 (cf. Figure 3.84) had a number of features and was consequently subdivided into Layers 4(a), 4(b) and 4(c). Layer 4(a) (cf. Figure 8.84(1)) consisted of a mixture of grey-brown soil and ash, charcoal and lumps of burnt wall clay. Layer 4(b) was a well made, thin floor of yellow-brown dolerite gravel[293], over a supporting floor base of pink-brown, compacted sandy soil[294]. Layer 4(c) was a deposit of compacted light brown, fine sand adjacent to the dolerite floor[295] and could have served as an outdoor living floor[296]. In Layer 4(c), a concentration of oblong, upright stones[297] was part of an unidentified stone structure, with the two halves of a small, broken clay pot lying on a concentration of bones between the upright stones[298].

Layer 5 (cf. Figure 3.84) consisted of various components and was subdivided into Layers 5(a) and 5(b). The light brown soil in Layer 5(a) contained ash, lumps of burnt clay, charcoal, patches of white ash, potsherds and bone fragments, a thin, well-made floor of yellow-brown dolerite[299] (cf. Figure 3.84(4)) and a group of ten oblong, upright stones[300]. Layer 5(b) was situated underneath Layer 5(a). It consisted of a soft, grey-brown mixture of sand and ash which was excavated as Layer 5(b)(i)[301], a curved strip of compacted sand[302] next to Layer 5(b)(i). Layer 5(b) also featured a patch of soft, light brown to grey-brown sandy soil with patches of ash, excavated as Layer 5(b)(ii). Finally, Layer 5(b) contained a thick, bench-shaped mass of compacted, yellow-brown dolerite gravel[303].

Layer 6 (cf. Figures 3.77 to 3.79 and 3.84 to 3.85) was a living floor which consisted of burnt hut debris, gravel floors, stone structures and household refuse. The burnt wall clay was excavated as Layer 6(a). The living surface consisted mainly of a well-made, fairly thick floor of yellow-brown dolerite gravel[304] which surrounded four stone structures (cf. Figures 3.85(1) and 3.84(6)). These stone structures represented a mortar stone which was neatly mounted in a small pit with small supporting stones around the mortar stone (cf. Figures 3.85(5) and 3.78)), and a ring of compacted sandy clay[305] around the upper surface of the mortar stone[306] and three small pits, each of which contained a lining of small stones and probably successively served as mounting pits for a mortar stone[307] (cf. Figures 3.78, 3.79 and 3.85(6) to (8)). Resting on this dolerite floor was the base of an almost triangular and slightly curved bench or wall made of compacted, yellow-brown dolerite gravel[308], the upper part of which had been damaged. Both against the perimeter of the dolerite living floor and off-centre in Square F4, there were the remains of a small stone platform[309] consisting of oblong, upright stones supporting flat stones in a horizontal position (cf. Figures 3.77 and 3.85(4)).

The remains of a floor made of yellow-brown dolerite gravel was also present in the base of Layer 6 at Profiles Q-R and P-Q[310] (cf. Figure 3.85(3)). This floor was mentioned by Sentker in his report on Square F4. According to him, the floor covered a large area. He discontinued his excavation of Strip L in Square F4 on this floor without removing it[311].

Partially underneath the dolerite gravel wall or bench[312] and at Profile P-Q, was a portion of a poorly made, thin floor of yellow-brown dolerite gravel[313].

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Layer 7 (cf. Figure 3.84) was a deposit at least 50cm thick. It consisted mostly of a sequence of gravel floors. The layer was subdivided into Layers 7(i), 7(ii), 7(iii) and 7(iv). These layers were badly damaged by springhares. Consequently, no plan drawings could be made of Layers 7(i) and 7(ii).

Layer 7(i) consisted of patches of damaged gravel floors as well as light brown sandy soil which contained a substantial quantity of gravel nodules.

Layer 7(ii) included a deposit of light brown to red-brown sandy soil, gravel nodules, patches of ash, a few concentrations of bone fragments[314], a floor made of coarse yellow and red mudstone gravel[315] (cf. Figure 3.84(10)), a floor made of coarse light yellow to green mudstone gravel[316] (cf. Figure 3.84(11)) and a thin floor made of yellow-brown dolerite gravel[317] (cf. Figure 3.84(12)).

Layer 7(iii) (cf. Figure 3.84) consisted of light brown to red-brown sandy soil, a patch of debris which included burnt wall clay, charcoal and ash at Profile S-P, and a succession of gravel floors. The layer contained what appeared to be a post hole with three supporting stones[318], a curved foundation trench with pole remains[319], a concentration of 20 round, small pebbles[320] and a concentration of bone fragments[321]. The remains of 6 floors or patches of gravel were identified in Layer 7(iii). These were a small patch of rough floor made of coarse, red mudstone gravel[322] underneath burnt wall clay (cf. Figure 3.84(13)), a rough floor made of very coarse, red mudstone gravel[323] (Figure 3.84(14)) which had been very badly damaged by springhares, a floor made of very hard compacted, light yellow gravel[324] (cf. Figure 3.84(15)) which had been damaged by curved wall trenches from later layers from above, another patch of floor made of light yellow gravel[325] which had similarly been damaged by later wall trenches from younger, overlying layers, a stepped floor made of yellow-brown dolerite gravel[326] and a patch of coarse, red gravel[327] at Profile R-S.

Layer 7(iv) (cf. Figure 3.84) consisted of soft, light brown fine, sandy soil which included a lot of charcoal, remains of gravel floors, and patches of white ash on burnt surfaces. At Profile P-S, there was a floor in a bad state of preservation consisting of two layers of mixed red and light yellow mudstone gravel[328] (cf. Figure 3.84(16)). White ash was present on and underneath this floor, which was also severely burnt, apparently by household fires.

At Profile P-Q in Layer 7(iv), patches of a gravel floor made of red mudstone gravel[329] (cf. Figure 3.84(17)) were partially underlain by another patch of red, mudstone gravel floor[330]. Two patches of ash on burnt surfaces were found[331], one of which[332] was apparently a cooking area on the gravel floor[333] at Profile P-S.

Layer 8 (cf. Figure 3.84) consisted of a deposit of red-brown to grey-brown sandy soil which contained a lot of charcoal, bone fragments and potsherds, as well as burnt hut debris and floors made of red and light yellow mudstone gravel. There was no clear distinction between Layers 7 and 8. Layer 8 was also a very thick deposit. It was consequently subdivided into Layers 8(i), 8(ii), 8(iii) and 8(iv)[334].

Layer 8(i) was only a limited deposit of soft, fine-grained, red-brown sand which contained a few stones, bone fragments and a piece of an iron ring[335]. The layer was situated at Profile R-S and was underlaid by a patch of floor made of compacted sand[336].

Layer 8(ii) varied from light brown to red-brown and grey-brown sandy soil which contained charcoal, ash, lumps of burnt wall clay and a few large stones[337].

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Layer 8(iii) consisted of a deposit of grey-brown and light brown to pink-brown compacted, sandy soil which contained charcoal, bone fragments and grey patches of ash, a patch of burnt hut wall debris[338] containing lumps of clay with post impressions and smooth surfaces (cf. Figure 3.84(18)), on a ground floor (cf. Figure 3.84(19)), another patch of burnt hut wall debris[339] which included charred plant material[340], and charred grain seeds together with more charred plant material[341], as well as a patch of light brown to grey-brown, sandy soil which contained ash, charcoal and charred seeds[342].

Layer 8(iv) was interpreted as the base of Layer 8(iii) and consisted of a grey-brown mixture of sand, ash and charcoal, bone fragments and potsherds scattered throughout the layer.

A floor made of coarse, red mudstone gravel[343] was partially visible at Profiles P-S and R-S (cf. Figure 3.84(20)). A large concentration of potsherds, bone fragments and charcoal[344] was situated mainly under a patch of burnt hut wall debris[345] associated with Layer 8(iii), and contained a row of four charred poles[346]. Charred grain seeds[347] were covered in a patch of burnt hut wall debris[348] in Layer 8(iii).

Layer 9 (cf. Figures 3.84 and 3.85) was a thick deposit which consisted of sandy soil containing a lot of household refuse and the remains of huts and gravel floors. It was subdivided into Layers 9(i) and 9(ii).

Layer 9(i) was a deposit of red-brown compacted, sandy soil, containing a quantity of bone fragments and much charcoal scattered throughout the layer[349]. Patches of a floor made of coarse red mudstone gravel[350] were present in the base of Layer 9(i) (cf. Figures 3.84(21) and 3.85(10)). In a deposit of soil above this floor, a concentration of small copper spheroids and slag still remained of what was apparently copper artefact production activity. The floor was damaged by the wall pole holes[351] of a small hut (cf. Figures 3.85(11) and 3.80) with a diameter of 1,30m, which had no obvious floor. It was also damaged by the wall foundation trench with post holes[352] of a small hut with a diameter of approximately 1,30m (cf. Figures 3.85(12) and 3.80)). Layer 9(i) also included a patch of sand which was mixed with red mudstone gravel[353], and a concentration of bone fragments[354].

Layer 9(ii) consisted of a deposit of grey-brown to red-brown sandy soil containing the fragments of a few bones and iron objects and an iron ring, as well as the remains of gravel floors[355]. A floor which was partially visible at Profile P-Q, had been made of light yellow, coarse gravel[356] (cf. Figures 3.84(22) and 3.85(13)). A large floor made of coarse red gravel[357] with a curved perimeter (cf. Figure 3.84(23) and 3.85(14)) appeared to have been an external floor which at one time partially surrounded a hut-shaped structure. At Profile R-S, a small patch of well made floor consisted of light yellow mudstone gravel[358] (cf. Figure 3.85(15)). It had a smooth surface and edge, and a vertical stone built into the floor. A floor made of light yellow gravel[359] (cf. Figure 3.85(16)) was partially visible at Profile Q-R. Adjacent to this floor, at Profile Q-R, a patch of coarse red gravel[360] appeared to be part of a larger floor (cf. Figure 3.85(18)). A patch of floor made of light yellow mudstone gravel[361] became visible off-centre in Square F4 (cf. Figure 3.85(17)), later it turned out to be a low, platform-shaped part of a floor of a double-walled hut in Layer 10.

Layer 10 (cf. Figures 3.84 and 3.85) consisted mainly of burnt hut wall clay as well as hut floors and external floors made of gravel. The floor and hut wall foundations were eventually revealed to be the remains of two successive double-walled huts, the one overlapping the other[362]. The remains of the one hut, which had possibly been the first one and only half of which was inside Square F4, consisted of burnt wall clay[363] which contained blackened, burnt stones and a piece of charred wood, which was lying on the inner hut floor made of

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blackened, burnt, compacted sand[364] (cf. Figure 3.85(20)), surrounded by the inner wall foundation trench[365] which was 10cm wide and contained a few charred poles (cf. Figure 3.85(21)), the outer hut floor[366] made of light yellow mudstone gravel between the inner and outer hut wall (cf. Figure 3.85(17)), and the outer wall foundation trench[367] which was 10cm wide and contained traces of pole remains (cf. Figure 3.85(22)). On the outer floor of this hut were the remains of a patch of burnt, sandy soil which contained charcoal, ash and a concentration of small Indian red trade glass beads[368] (cf. Figure 3.85(19)). Outside this hut, the remains of a crude external floor[369] against the hut had been made of very coarse red mudstone gravel (cf. Figure 3.85(25)).

The remains of the other, apparently later hut in Layer 10 simply consisted of the wall foundation trench[370] with a width of approximately 10 cm encircling an inner space (cf. Figure 3.85(24)) with a diameter of 2,2m, and the foundation trench of the outer wall[371] with a width of 10cm which encircled a hut interior space with an estimated diameter of approximately 4m. The outer wall trench contained the charred remains of a few wall poles close to Profile P-S (cf. Figure 3.85(24)). The wall trenches of this hut penetrated the floors of the first hut and also a patch of floor[372] made of coarse red mudstone gravel at Profile P-Q (cf. Figure 3.85(26)). Layer 10 was dated to 1026 AD[373] (cf. Appendix 8.9).

In the base of Layer 10 at Profile P-S, a large pottery vessel[374] was embedded in what is presumed to be a pit in the sterile bottom sand underlying the archaeological deposits in Square F4 (cf. Figures 3.82 and 3.85(27)).



Figure 3.77[375]
Excavation F4. A view of a stone platform: Feature F4.6(opp).5 (cf. also Figure 3.85).

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Figure 3.78[376]
Excavation F4. A view of mortar stone structures: Features F4.6(B).6, F4.6(B).5 and F4.6(opp).7 (cf. also Figure 3.85).

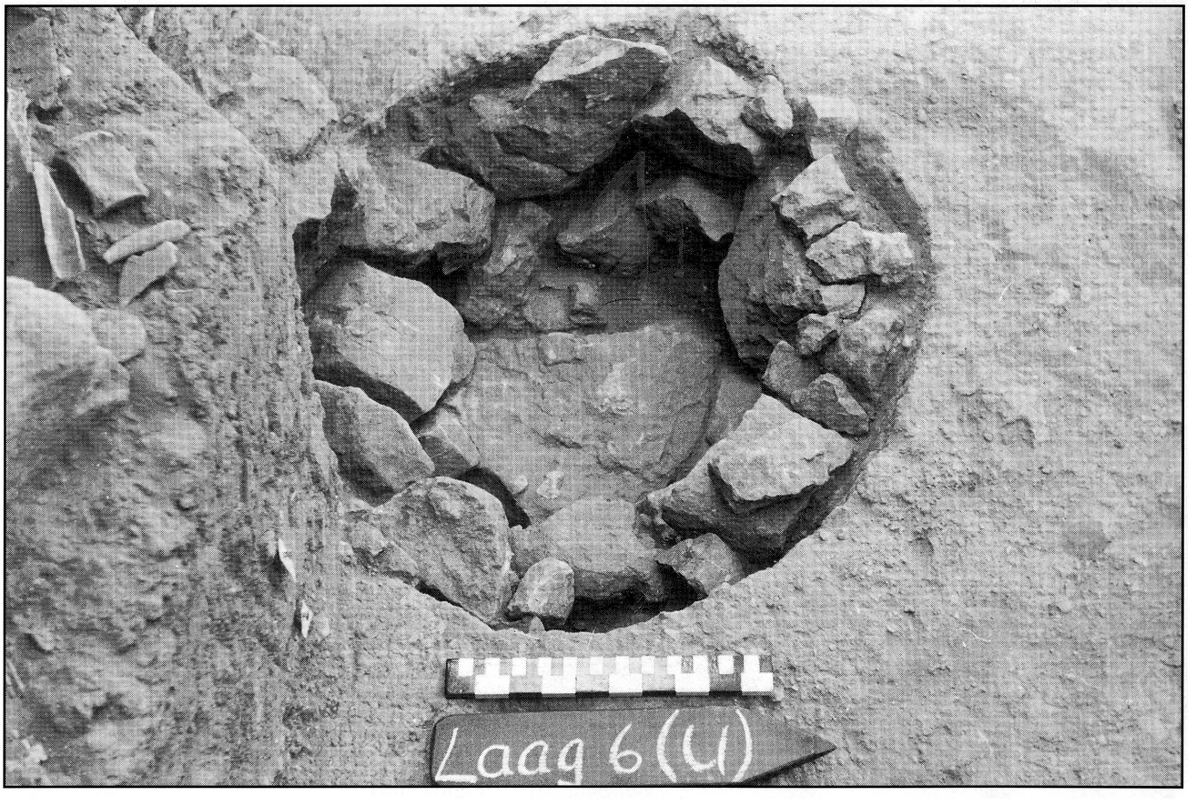

Figure 3.79[377]
Excavation F4. A view of Feature F4.6(B).4 (cf. also Figure 3.85).

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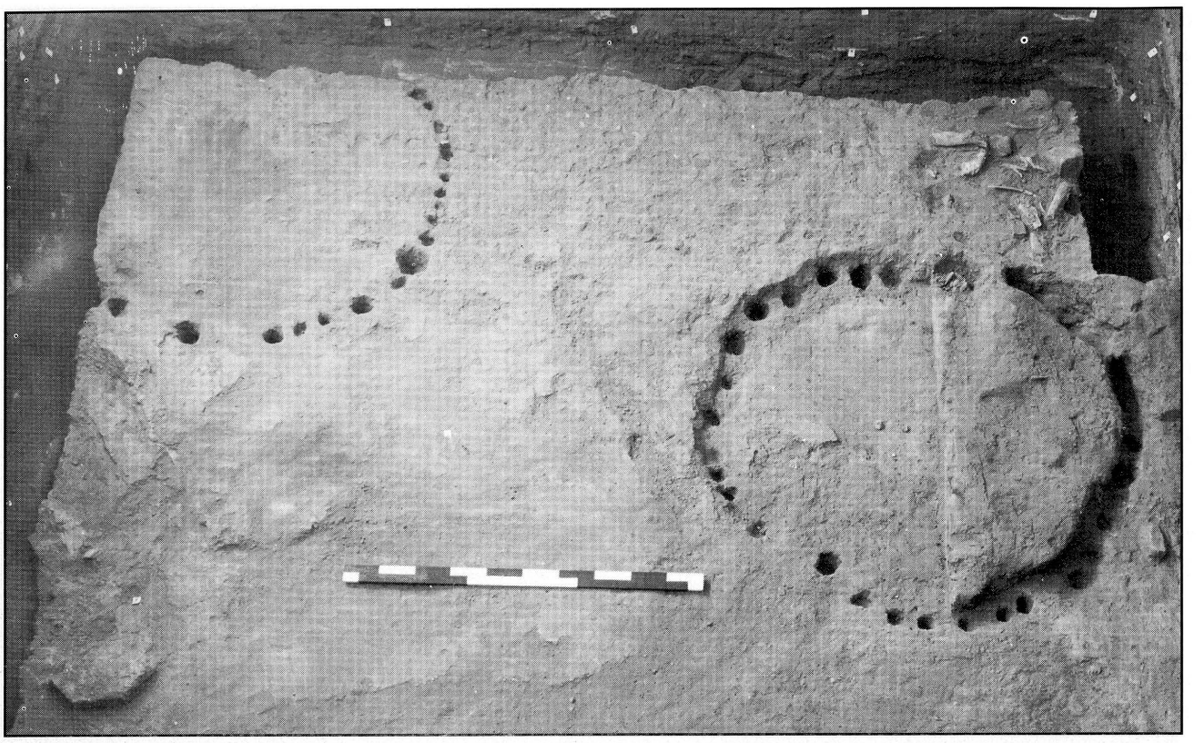

Figure 3.80[378]
Excavation F4. A view of Layer 9(i) showing hut with Features F4.9(i).2 and F4.9(i).3 (cf. also Figure 3.85).

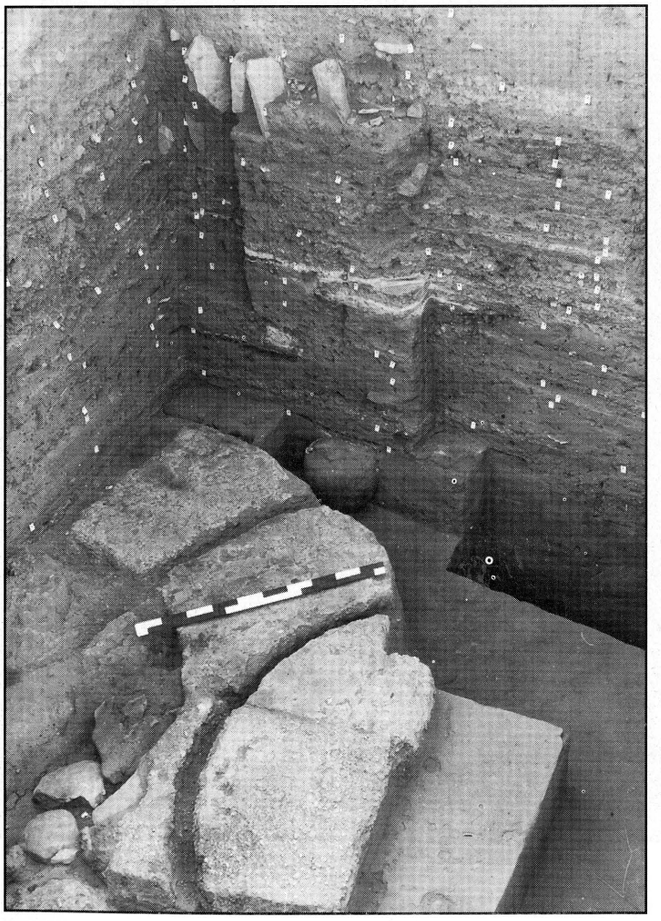

Figure 3.81[379]
Excavation F4. A general view of the completed excavation.

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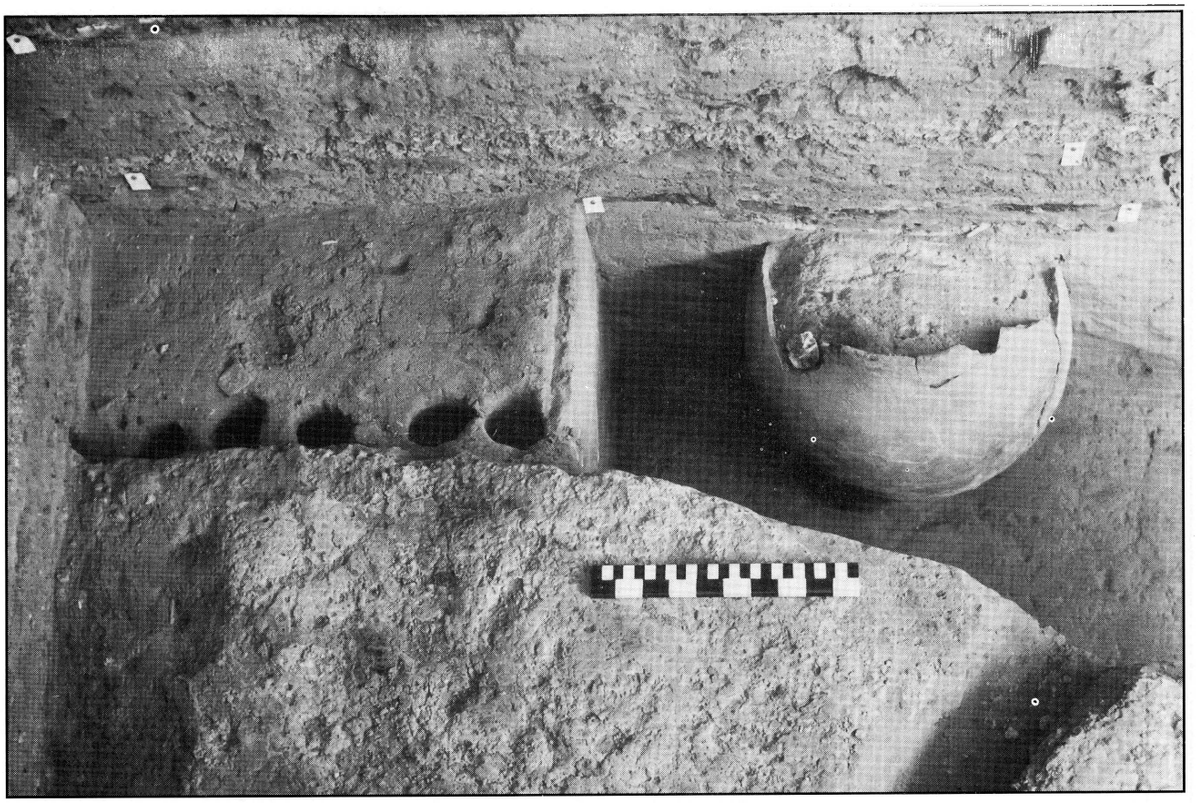

Figure 3.82[380]
Excavation F4. A view of Features F4.10.10, F4.9(ii).5 and F4.10.6 (cf. also Figure 3.85).

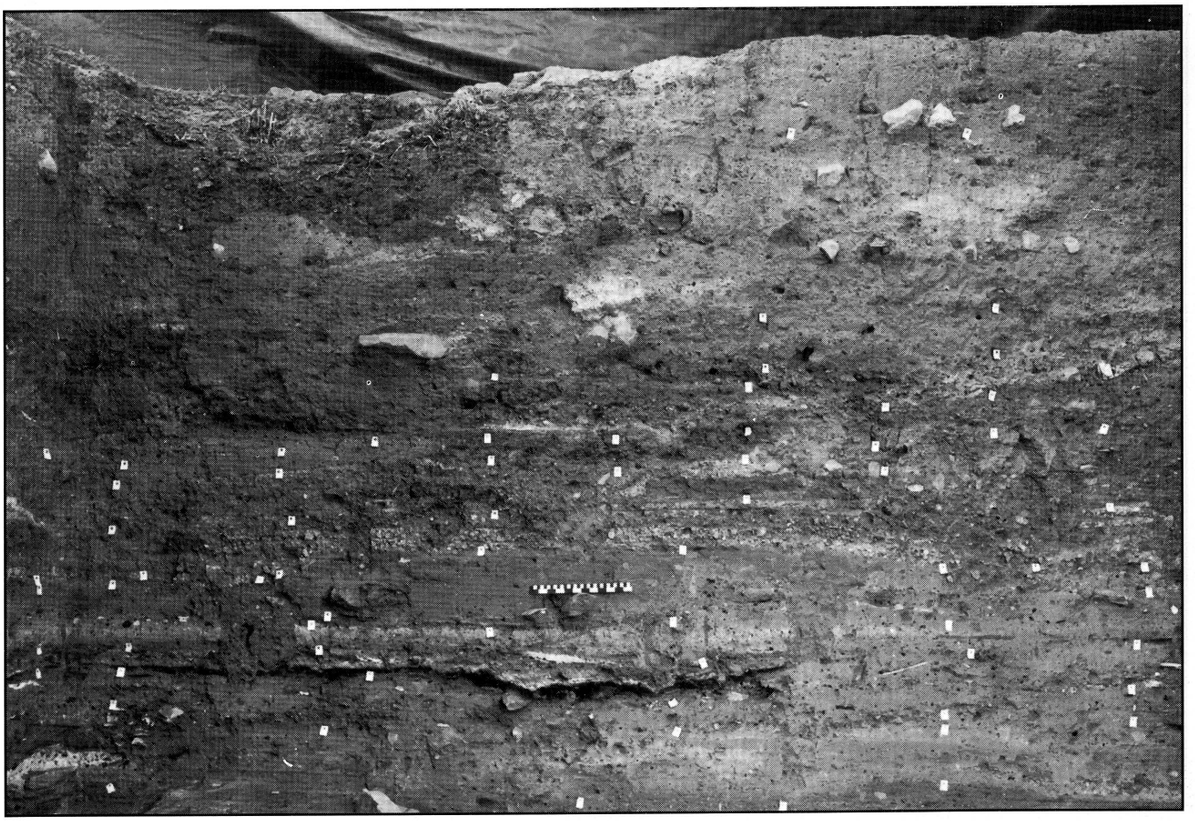

Figure 3.83[381]
Excavation F4. A view of Profile R-S.

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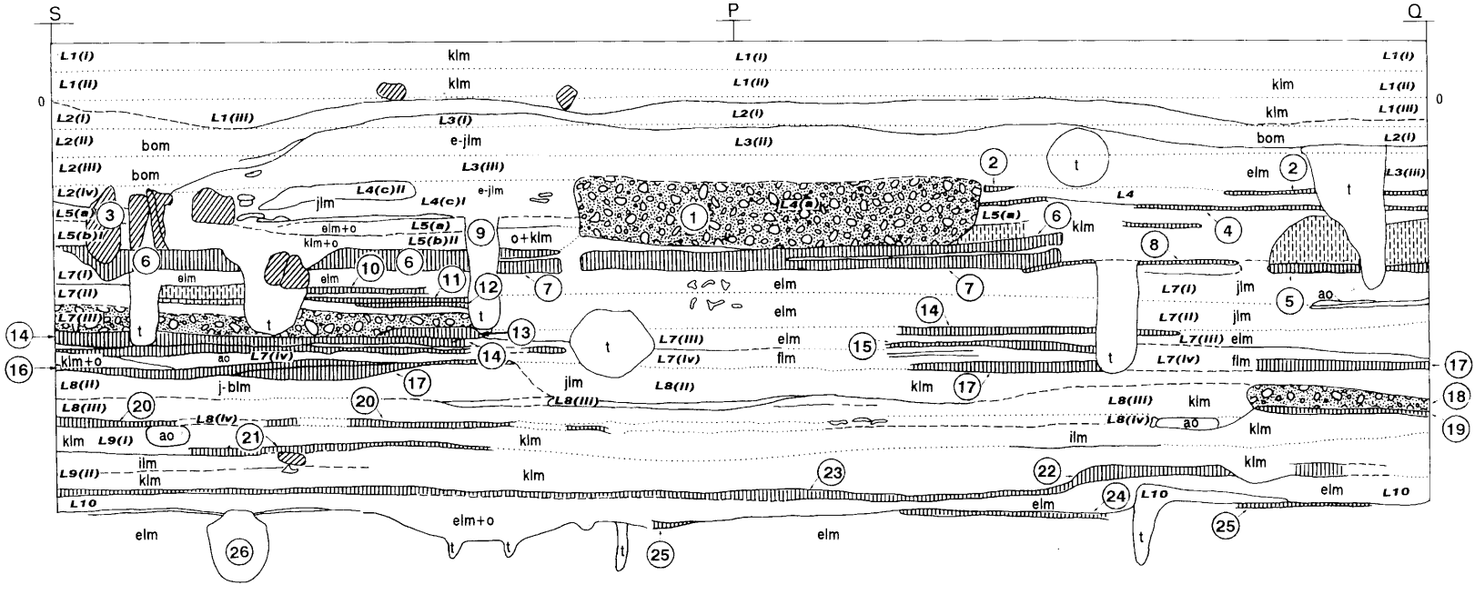

1. F4.(a) *Burnt hut rubble*
2. F4.4(opp).1 *Mustard yellow gravel floor*
3. F4.4(c).1 *Stone structure*
4. F4.5(a).1 *Mustard yellow gravel floor*
5. F4.6(b).1 *Mustard yellow gravel floor*
6. F4.6(opp).1 *Mustard yellow gravel floor*
7. F4.6(b).2 *Mustard yellow gravel floor*
8. F4.6(b).3 *Mustard yellow gravel floor*
9. *Wall trench / post holes*
10. F4.7(ii).1 *Yellow and red gravel floor*
11. F4.7(ii).2 *Yellow gravel floor*
12. F4.7(ii).3 *Mustard yellow gravel floor*
13. F4.7(iii).1 *Red gravel floor*
14. F4.7(iii).2 *Red gravel floor*
15. F4.7(iii).3 *Light yellow gravel floor*
16. F4.7(iv).1 *Light yellow and red gravel floor*
17. F4.7(iv).2 *Red gravel floor*
18. F4.8(iii).1 *Burnt hut rubble*
19. F4.8(iii).4 *Gravel floor*
20. F4.8(iv).1 *Red gravel floor*
21. F4.9(i).1 *Red gravel floor*
22. F4.9(ii).1 *Light yellow gravel floor*
23. F4.9(ii).2 *Red gravel floor*
24. F4.10.4 *Red gravel floor*
25. F4.10.3 *Red gravel floor*
26. F4.10.10 *Clay pot*

Site: MAPUNGUBWE: SOUTHERN TERRACE

SQUARE: F4
PROFILES: S-P & P-Q

0 50 100
cm

FIGURE 3.84

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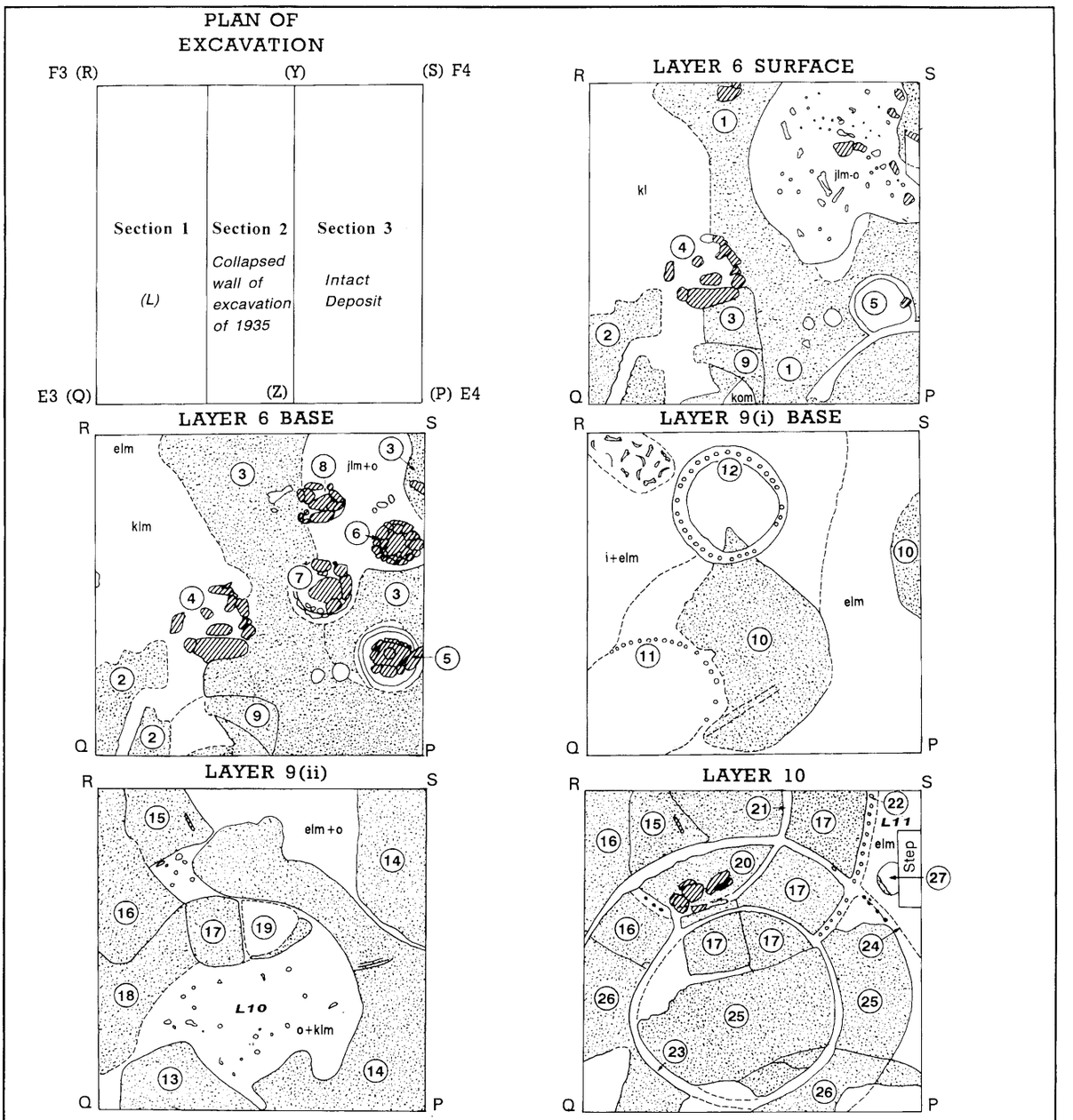

(1) F4.6(opp).1 *Mustard yellow gravel floor*
(2) F4.6(B).1 *Mustard yellow gravel floor*
(3) F4.6(B).2 *Mustard yellow gravel floor*
(4) F4.6(opp).5 *Stone platform structure*
(5) F4.6(opp).7 *Mortar stone*
(6) F4.6(B).4 *Stone structure*
(7) F4.6(B).5 *Stone structure*
(8) F4.6(B).6 *Stone structure*
(9) F4.6(opp).2 *Mustard yeilow gravel*
(10) F4.9(i).1 *Red gravel floor*
(11) F4.9(i).2 *Hut wall base*
(12) F4.9(i).3 *Hut wall base*
(13) F4.9(ii).1 *Light yellow gravel floor*
(14) F4.9(ii).2 *Red gravel floor*
(15) F4.9(ii).3 *Light yellow gravel floor*
(16) F4.9(ii).4 *Light yellow gravel floor*
(17) F4.9(ii).5 *Light yellow gravel floor*
(18) F4.9(ii).6 *Red gravel*
(19) F4.10.1 *Burnt sand*
(20) F4.10.9 *Burnt sand floor*
(21) F4.10.5 *Wall trench*
(22) F4.10.6 *Wall trench*
(23) F4.10.7 *Wall trench*
(24) F4.10.8 *Wall trench*
(25) F4.10.3 *Red gravel floor*
(26) F4.10.4 *Red gravel floor*
(27) F4.10.10 *Clay pot*

Site: MAPUNGUBWE: SOUTHERN TERRACE

SQUARE: F4
LAYERS: 6, 9, & 10,

0 100 200
cm

FIGURE 3.85

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Excavation H5

Square H5 in the excavation grid of 1953 was fully excavated in 1971[382] (cf. Figures 3.86 to 3.94).

Layer 1 (cf. Figures 3.92 to 3.93) was the weathered surface of the deposit. The layer was fairly thick and was consequently arbitrarily subdivided into Layers 1(i) and 1(ii)[383]. Layer 1(i) was a deposit of soft, grey-brown, sandy soil which contained small potsherds, humus and grass roots. Large stones penetrated into the base of Layer 1(i) from below. Layer 1(ii) likewise consisted of soft, grey-brown, sandy soil which included small potsherds, humus and grass roots[384].

Layer 2 (cf. Figures 3.86, 3.92, 3.93) was a thick deposit which consisted mainly of ash, and was subdivided into Layers 2(i), 2(ii), 2(iii), 2(iv), 2(v) and 2(iv). Layer 2(i) consisted of a light grey to grey-brown, soft mixture of sand and ash, and included a small concentration of stones[385]. Layer 2(ii) also consisted of a soft, light grey to grey-brown mixture of ash and sand and contained a concentration of stones[386]. Layer 2(ii) was dated to 1414 AD[387] (cf. Appendix 8.9). Layer 2(iii) was a deposit of light grey to grey-brown sand and ash which contained a concentration of stones, bone fragments and potsherds[388] as well as an arrow link-shaft made of bone. In the base of Layer 2(iii), there was a thin, uneven and badly weathered floor, had been made of yellow-brown dolerite gravel[389] (cf. Figures 3.92(1), 3.93(1)). Layer 2(iv) was also a soft, light grey to grey-brown mixture of sand and ash, but it contained more red-brown sand than Layer 2(ii). Layer 2(iv) also contained a patch of burnt wall clay[390] which was partially visible in corner P of Square H5. Layer 2(v) was a grey to grey-brown mixture of ash and sand, and contained patches of soft, white to light grey ash[391] as well as a patch of burnt hut debris[392]. Layer 2(vi) also consisted of a soft, grey to grey-brown mixture of sand, ash and much charcoal[393].

Layer 3 (cf. Figures 3.87, 3.92 to 3.94) contained mainly the burnt remains of a large double-walled hut which had once existed in what are now Square H5 and the adjacent Squares G5 and H6. These remains consisted of burnt wall clay[394] lying on a thin external living floor[395] made of yellow-brown dolerite gravel surrounding the hut. The hut itself consisted of an inner floor made of yellow-brown dolerite gravel[396] (cf. Figures 3.94(1) and 3.92(5)), encircled by an inner wall foundation trench with a width of 10cm containing post holes[397] (cf. Figures 3.94(2) and 3.92(6)), an outer hut wall foundation trench with a width of 10cm which contained charred pole remains and pole holes[398] which were 4cm to 8cm thick (cf. Figure 3.94(4)) and a floor made of yellow-brown dolerite gravel[399] (cf. Figures 3.94(3) and 3.92(7)) between the inner and the outer wall of the hut. Underneath this floor (cf. Figure 3.92(10)) was a similar, earlier outer hut floor[400]. The diameter of the inner hut space was approximately 3m, and the estimated total diameter of the hut was estimated at 5m. Outside and against the hut (cf. Figures 3.94(5) and 3.92(9)) was a mustard yellow dolerite gravel floor.

Layer 3 also contained the base of a small wall or bench made of yellow-brown dolerite gravel[401] (cf. Figure 3.92(4)) and a patch of dolerite gravel[402] lying against the dolerite wall, as well as a concentration of potsherds[403] on the external floor against the outer wall of the hut.

Layer 4 (cf. Figures 3.92 to 3.93) was a deposit of mixed light brown to grey-brown ash and sand, patches of ash, the remains of burnt hut wall debris and patches of gravel floors[404]. The layer was subdivided into Layers 4(i) and 4(ii). Layer 4(i) consisted of light brown to grey-brown sandy soil and ash, a lot of charcoal and patches of white ash. The remains of two patches of floor, partially visible in Square H5, were a soft, pink-brown mixture of gravel and sand[405]

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(cf. Figure 3.92(11)), and a floor made of coarse red mudstone gravel[406] (cf. Figure 3.92(12)).

Layer 4(ii) consisted of a deposit which varied from light brown to grey-brown ashy sand, including charcoal and nodules of gravel, to red-brown sandy soil, as well as a mixture of grey-brown, ashy soil and burnt hut wall debris at Profile P-Q. At Point P in Square H5 there was a concentration of stones[407]. Off-centre in the square there was a concentration of charcoal mixed with black, burnt soil[408] and a patch of white ash and charcoal[409], which were probably fireplaces. The floor remains in Layer 4(ii) consisted of patches of a floor made of coarse red mudstone gravel[410], patches of a damaged floor made of light yellow mudstone gravel[411] (cf. Figure 3.92(14)), patches of a rough, red mudstone gravel floor[412] (cf. Figure 3.92(15)) and a patch of mixed gravel and brown sandy soil[413]. One of the floors[414] was penetrated by a curved strip of hard compacted, pink, sandy clay[415]. A curved disturbance[416] and an almost straight disturbance[417] were apparently wall foundations penetrating Layer 7(ii) from above.

Layer 5 (cf. Figures 3.88 and 3.92 to 3.94) consisted mainly of light brown to grey-brown sandy soil which contained ash and charcoal, the remains of a burnt hut and a succession of external floors around the former hut. The layer was subdivided into Layers 5(i), 5(ii), 5(iii), and 5(iv)[418].

Layer 5(i) was a deposit of light brown to grey-brown sandy soil which included traces of ash and charcoal, a patch of black burnt soil mixed with ash and charcoal at Profile P-Q, and a patch of burnt hut wall debris[419] which later proved to be part of the remains of the small hut in Layer 5(iii).

Layer 5(ii) was a mixed deposit which varied from light brown sandy soil to grey-brown ashy sand and grey sandy ash which contained a lot of charcoal. The layer included the remains of several walls, floors, household refuse and disturbances from above. A small hut (cf. Figures 3.88 and 3.94) with a diameter of approximately 1,40m consisted of a floor made of coarse red mudstone gravel[420] (cf. Figures 3.94(7) and 3.93(10)), wall remains[421] consisting of post holes which were 5cm to 6cm wide (cf. Figure 3.94(8)), and burnt wall debris[422]. During the existence of this hut, a succession of external floors and walls had been built outside the hut. These features were indicated by a large patch of red gravel[423] between the hut and the remains of two nearby parallel wall foundation trenches which contained post holes, and parallel to these features, another row of post holes[424] (cf. Figure 3.94(12)). At one side of the hut, the remains of a short outdoor wall consisting of 5 thin post holes[425] was situated at a right angle to the hut wall, against the hut wall. Encircling the hut were a well-made floor of coarse red mudstone gravel[426] (cf. Figure 3.94(10)) between the hut and a row of post holes close to the hut, and an adjacent floor, also made of coarse red mudstone gravel[427]. The floors in the outdoor living space around the hut had been extended by a patch of floor made of coarse red gravel[428] (cf. Figure 3.94(9)) at Profile R-S, and a floor made of a mixture of light yellow and red mudstone gravel[429] in Corner P of Square H5.

Other features in Layer 5(ii) were a mortar stone[430] mounted in a small pit with supporting stones in Corner S of Square H5, a hollow with a black, burnt bottom[431] which contained white ash and apparently served as a fireplace at Profile P-S, and a concentration of stones and bone fragments in ashy soil[432] in Corner P of Square H5. At one side of the hut, in the centre of a patch of light brown sandy soil, a patch of white ash was situated with a slightly curved row of holes of five thin poles[433] next to it. At Profile P-Q, half of a curved trench which appeared to be a hut wall foundation trench was visible as a disturbance[434] in Layer 5(ii) from above.

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Layer 5(iii) was an arbitrary layer which consisted of a grey-brown mixture of ash and bone fragments, as well as red-brown sandy soil between the gravel floors around the hut in Layer 5(ii)[435]. Layer 5(iv) varied from red-brown sandy soil to grey-brown ashy, sandy soil containing bone fragments and charcoal. The layer also contained gravel floors and patches of white ash which appeared to be fireplaces[436]. Layer 5(iv) featured a floor with a circular floor plan and made of coarse red mudstone gravel[437] (cf. Figure 3.94(13) and 3.92(19)). This floor was only partially situated in Corner S in Square H5, with the rest of this possible hut floor in the adjacent squares. Close to Corner P of Square H5, a floor made of coarse red mudstone gravel[438] (cf. Figures 3.94(14) and 3.92(20)) next to the hut wall[439] appeared to have been an external floor with a circular gap in its perimeter[440] which encircled a mortar stone. This mortar stone[441] was mounted in a small pit with surrounding supporting stones (cf. Figures 3.89 and 3.94(18)). Other features in Layer 5(iv) were fireplaces consisting of patches of white ash on burnt soil surfaces[442] close to the hut wall[443], a concentration of bone fragments, charcoal and a few stones[444] which also contained a small conical pottery artefact, a concentration of bone fragments in Corner S[445] and a slightly curved disturbance[446] which is believed to be a wall foundation trench.

Layer 6 (cf. Figures 3.89 to 3.94) consisted of light brown, red-brown and grey-brown sandy soil, red gravel floors and the debris of a burnt hut which contained charred seeds[447]. The layer was subdivided into Layers 6(i), 6(ii) and 6(iii).

Layer 6(i) was a deposit of red-brown sandy soil, with a blackened, burnt surface under burnt wall rubble between Profile R-S and the centre of Square H5. The layer contained a small patch of white ash at Profile Q-R, a large quantity of bone fragments, potsherds, a metal ring[448] close to Profile R-S, and a round rubbing stone[449]. The layer featured a portion of a floor made of red mudstone gravel[450] (cf. Figures 3.94(15) and 3.92(21)), penetrated by a circular wall foundation trench at Profile P-R and the mounting pit of the mortar stone[451] from Layer 5. An unusual feature was a patch of floor made of coarse red mudstone gravel[452] (cf. Figures 3.94(16) and 3.92(22)), with a concave slope on one side and damage caused by the circular wall foundation trench[453] of the hut in overlying Layer 5. Other features were a portion of a red mudstone gravel floor[454] situated in Corner P of Square H5 (cf. Figures 3.94(17) and 3.93(13)) which could have been an inner hut floor, and a patch of red mudstone gravel floor[455] off-centre in Square H5 (cf. Figure 3.93(14)).

Layer 6(ii) varied from red-brown to grey-brown sandy soil which included ash and charcoal. Patches of ash were present in the base of the layer[456]. The layer also contained a small patch of coarse red mudstone gravel floor[457].

Layer 6(iii) consisted of a deposit which varied from red-brown to grey-brown sandy soil which included ash, charcoal and bone fragments, especially close to Profile Q-R. A clay pot[458] was found in a tilted position in a pit in the sterile sand below Layer 6(iii) (cf. Figure 3.94(22)). The remains of a small hut with a diameter of 1,8m consisted of burnt wall clay[459] (cf. Figure 3.92(23)) which included charred seeds, a hut wall base consisting of charred wall posts 3cm to 4cm thick, post holes in a wall foundation trench[460] (cf. Figure 3.94(21)) and a thin hut floor of burnt, yellow, soft, slightly compacted sand[461] (cf. Figure 3.94(20)). Other features in Layer 6(iii) were a patch of floor made of red mudstone gravel[462] and a small pit filled with household refuse[463] partially visible in Corner R of Square H5. A calibrated radiocarbon date on charcoal from Layer 6(iii) is 1173 AD[464] (cf. Appendix 8.9).

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Figure 3.86[465]
Excavation H5. A view of Feature H5.2(iii).2 in Layer 2(ii).

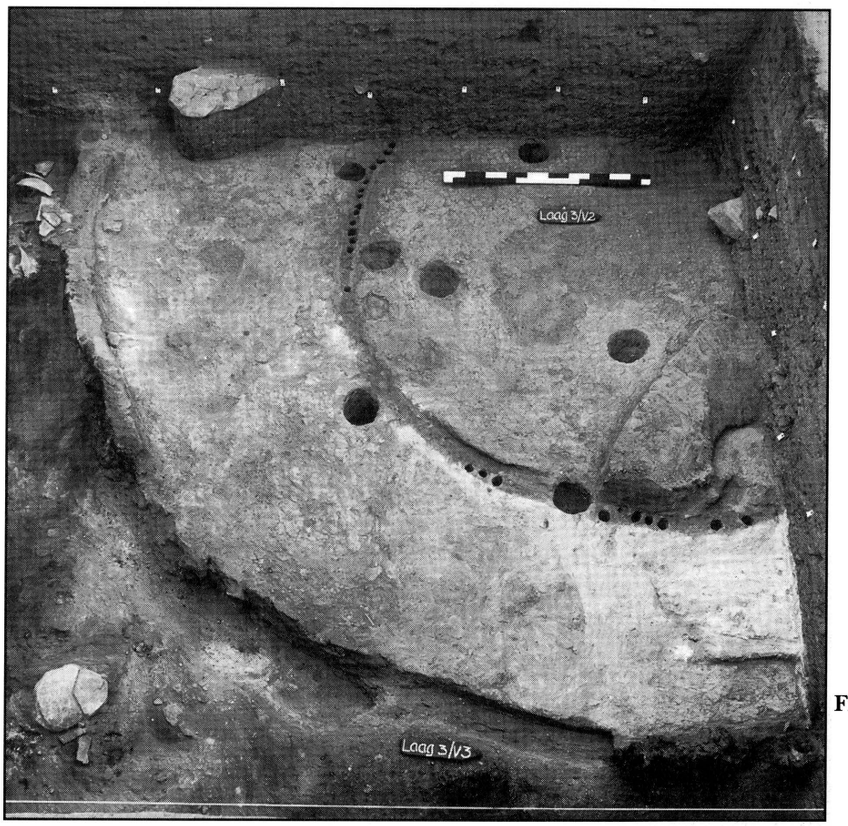

Figure 3.87[466]
Excavation H5. A view of Features H5.3.4 to 7: Hut remains in Layer 3 (cf. also Figure 3.94).

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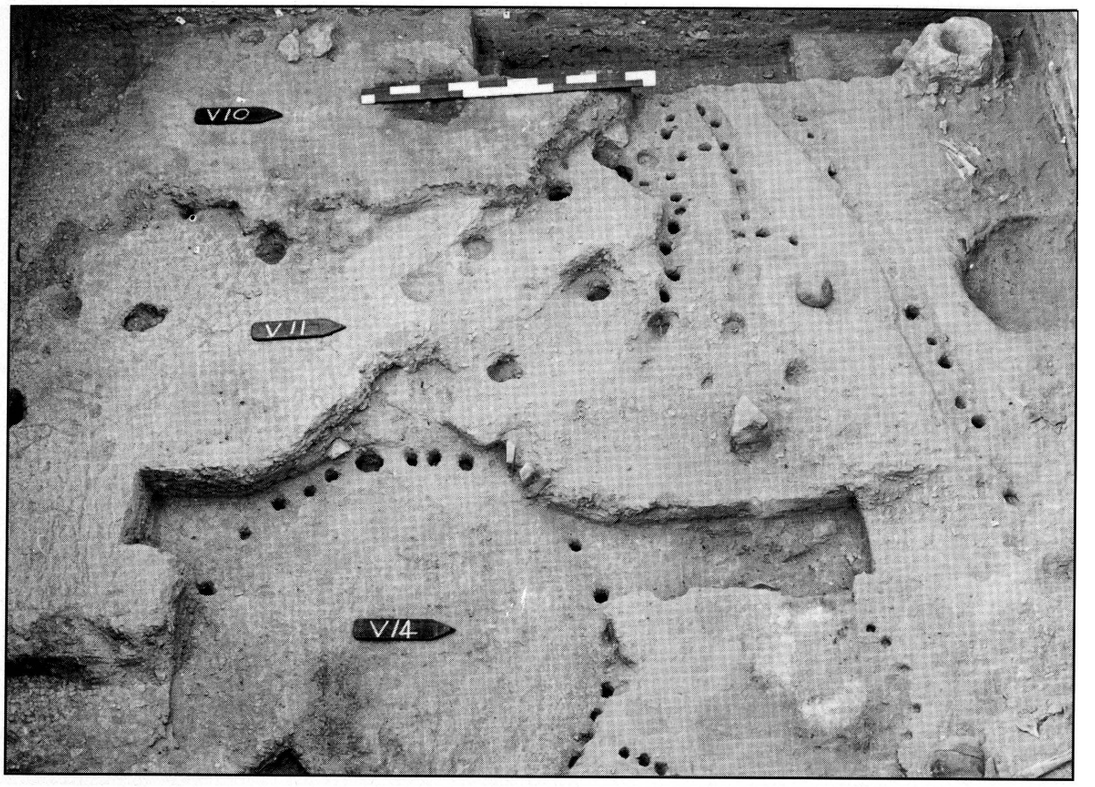

Figure 3.88[467]
Excavation H5. A view of Layer 5, with Features H5.5.1, H5.5.2 and H.5.5.7: Floor and wall remains (cf. also Figure 3.94).

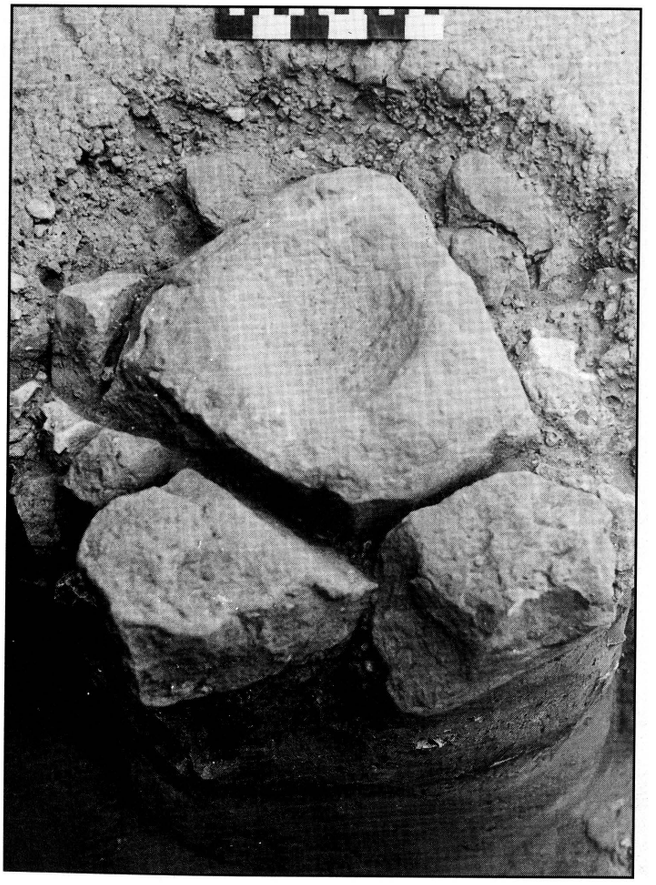

Figure 3.89[468]
Excavation H5. A view of Feature H5.6(i).4: A mortar stone in Layer 6(i) (cf. also Figure 3.94).

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Figure 3.90[469]
Excavation H5. A general view of the completed excavation with Features H5.6(iii).4, H5.6(iii).3-4 and H5.6(iii).6 (cf. also Figure 3.94).

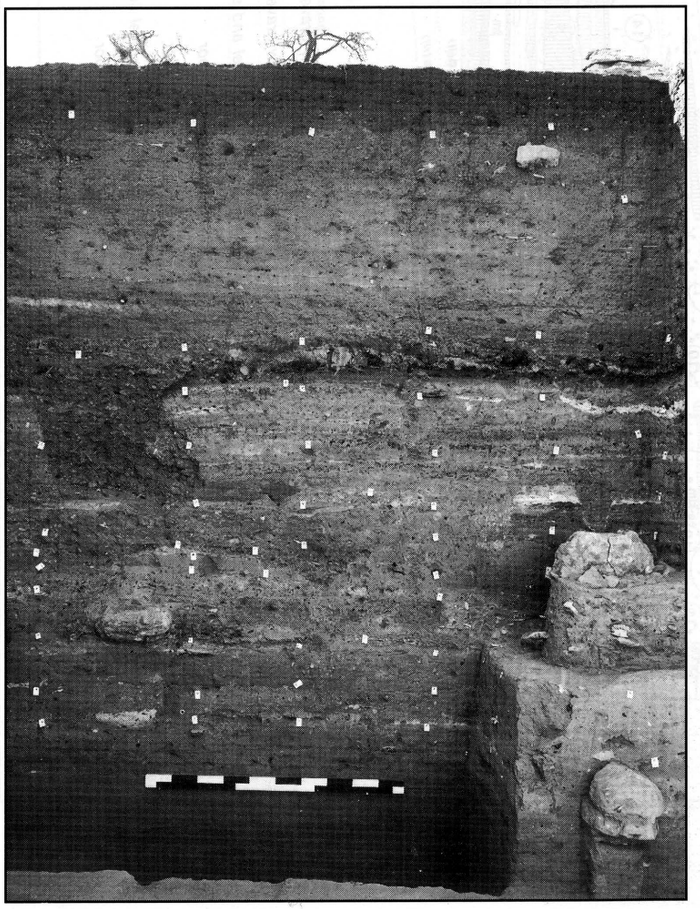

Figure 3.91[470]
Excavation H5. A view of Profile R-S (cf. also Figure 3.93).

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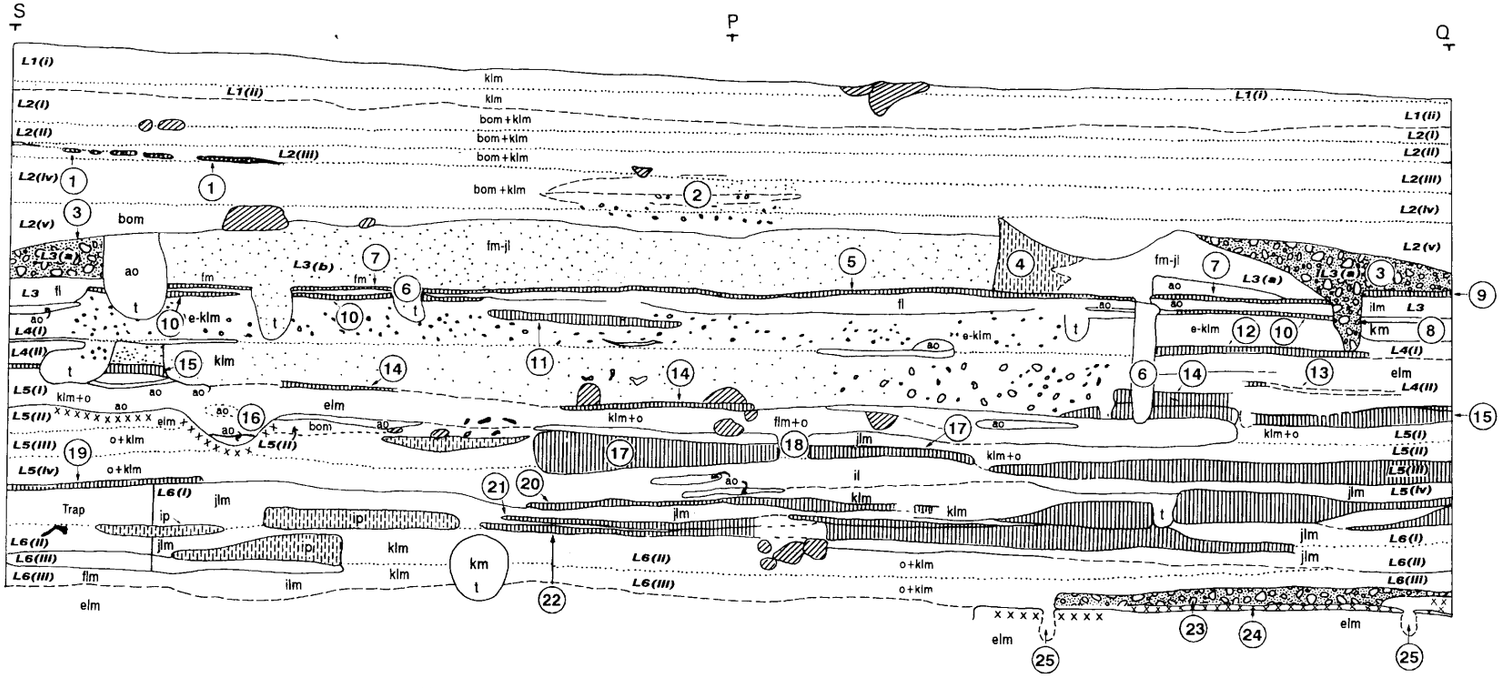

1. H5.2(iii).1 *Mustard yellow gravel floor*
2. H5.2(iv).1 *Traces of burnt hut rubble*
3. H5.3.1 *Burnt hut rubble*
4. H5.3.3 *Mustard yellow gravel wall base*
5. H5.3.4 *Mustard yellow gravel floor*
6. H5.3.5 *Hut wall foundation trench*
7. H5.3.6 *Mustard yellow gravel floor*
8. H5.3.7 *Hut wall foundation*
9. H5.3.8 *Mustard yellow gravel floor*
10. H5.3.12 *Mustard yellow gravel floor*
11. H5.4(i).1 *Pink-red gravel and sand floor*
12. H5.4(i).2 *Red gravel floor*
13. H5.4(ii).1 *Red gravel floor*
14. H5.4(ii).4 *Light yellow gravel floor*
15. H5.4(ii).5 *Red gravel floor*
16. H5.5.4 *Fireplace*
17. H5.5.14 *Light yellow and red gravel floor*
18. H5.5.15 *Wall trench*
19. H5.5.19 *Red gravel floor*
20. H5.5.20 *Red gravel floor*
21. H5.6(i).1 *Red gravel floor*
22. H5.6(i).2 *Red gravel floor*
23. H5.6(iii).1 *Burnt hut rubble*
24. H5.6(iii).3 *Burnt sand floor*
25. H5.6(iii).4 *Burnt hut wall trench*

Site: MAPUNGUBWE: SOUTHERN TERRACE

SQUARE: H5
PROFILES: S-P & P-Q

0 50 100
cm

FIGURE 3.92

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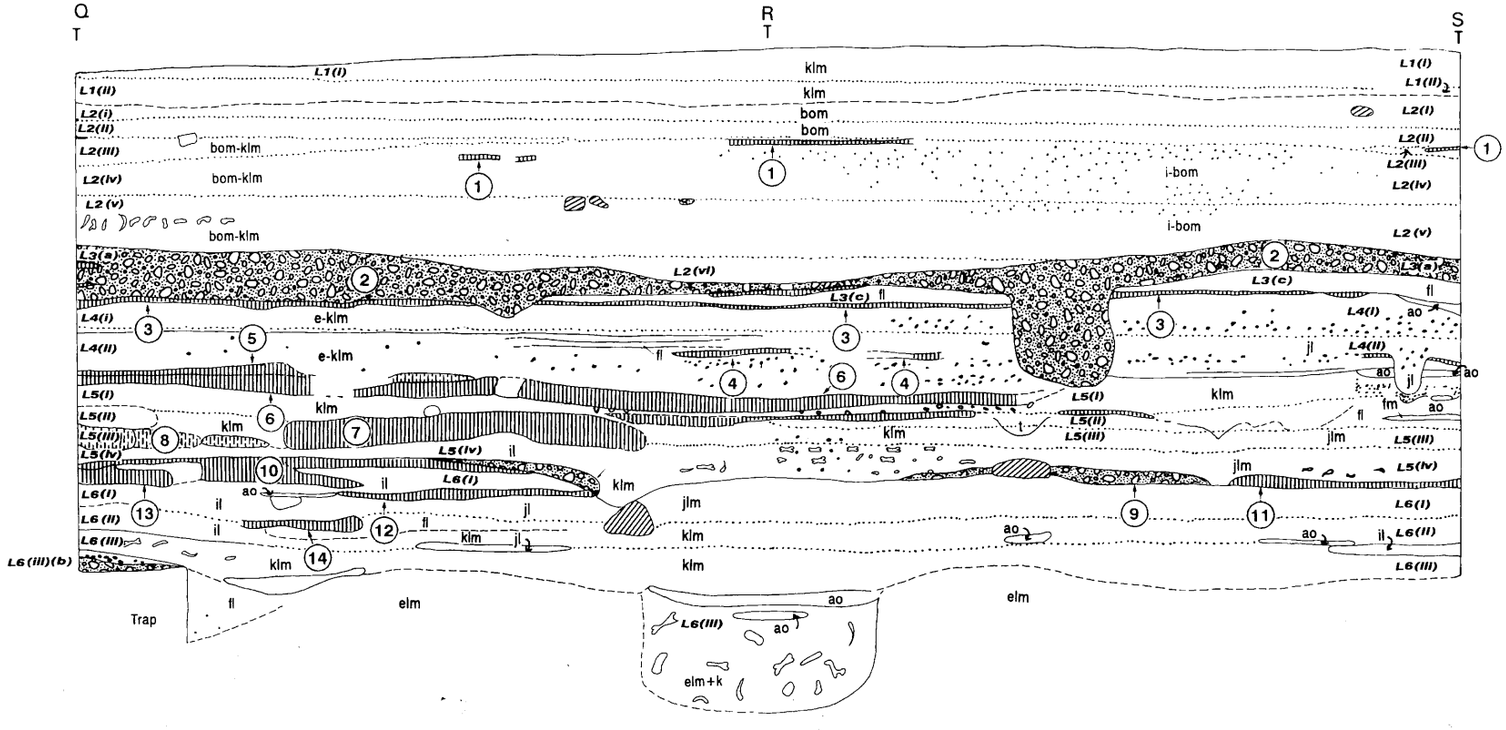

1. H5.2(iii).1 *Mustard yellow gravel floor*
2. *Burnt hut rubble*
3. H5.3.8 *Mustard yellow gravel floor*
4. H5.4(ii).1 *Red gravel floor*
5. H5.4(ii).4 *Light yellow gravel floor*
6. H5.4(ii).5 *Red gravel floor*
7. H5.5.12 *Red gravel floor*
8. H5.5.13 *Red gravel floor*
9. *Burnt hut rubble*
10. H5.5.1 *Red gravel floor*
11. H5.5.19 *Red gravel floor*
12. H5.6(i).2 *Red gravel floor*
13. H5.6(i).3 *Red gravel floor*
14. H5.6(i).6 *Red gravel floor*

Site: MAPUNGUBWE: SOUTHERN TERRACE

SQUARE: H5
PROFILES: Q-R & R-S

0 50 100
cm

FIGURE 3.93

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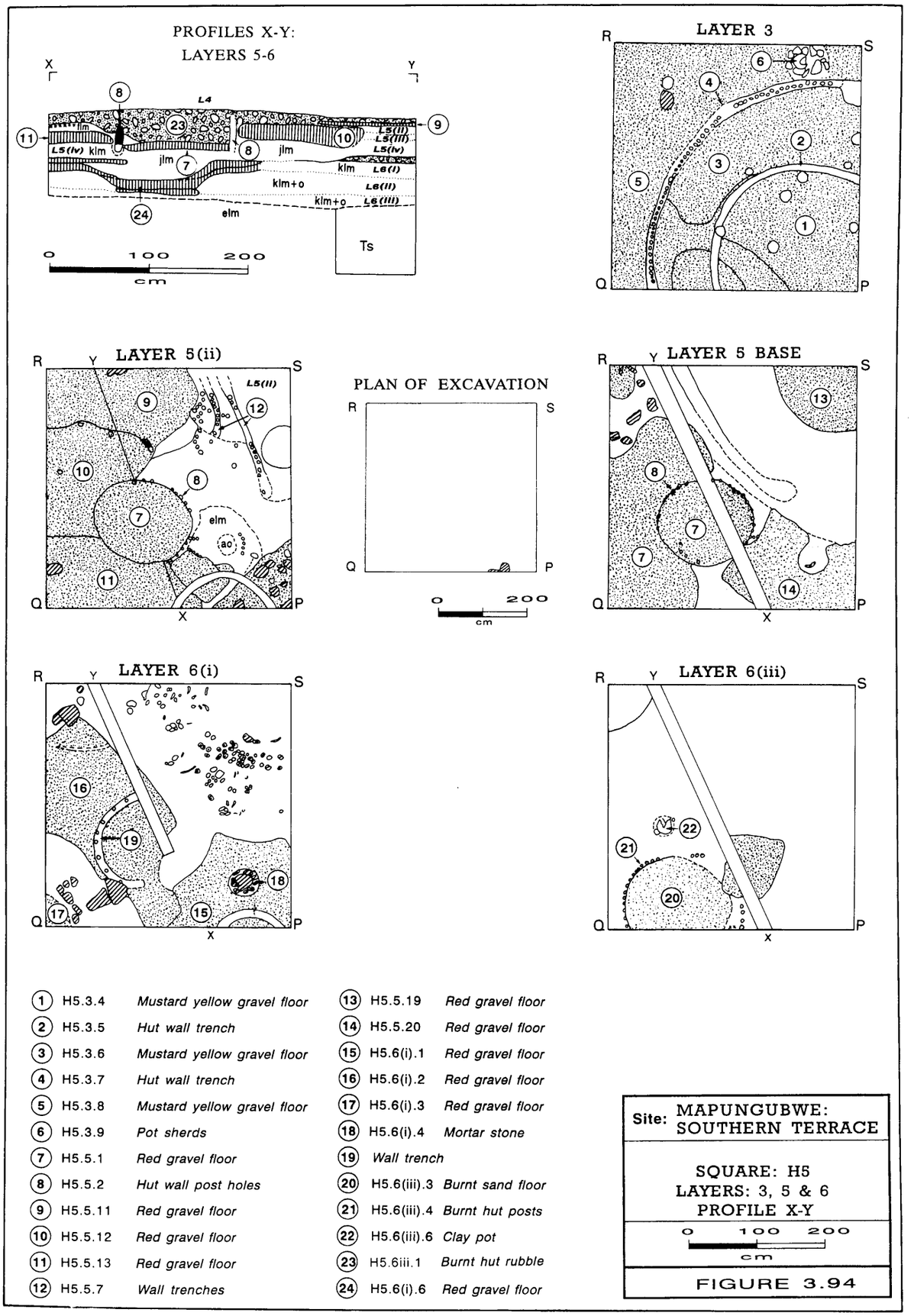

(1)	H5.3.4	*Mustard yellow gravel floor*	(13)	H5.5.19	*Red gravel floor*
(2)	H5.3.5	*Hut wall trench*	(14)	H5.5.20	*Red gravel floor*
(3)	H5.3.6	*Mustard yellow gravel floor*	(15)	H5.6(i).1	*Red gravel floor*
(4)	H5.3.7	*Hut wall trench*	(16)	H5.6(i).2	*Red gravel floor*
(5)	H5.3.8	*Mustard yellow gravel floor*	(17)	H5.6(i).3	*Red gravel floor*
(6)	H5.3.9	*Pot sherds*	(18)	H5.6(i).4	*Mortar stone*
(7)	H5.5.1	*Red gravel floor*	(19)	*Wall trench*	
(8)	H5.5.2	*Hut wall post holes*	(20)	H5.6(iii).3	*Burnt sand floor*
(9)	H5.5.11	*Red gravel floor*	(21)	H5.6(iii).4	*Burnt hut posts*
(10)	H5.5.12	*Red gravel floor*	(22)	H5.6(iii).6	*Clay pot*
(11)	H5.5.13	*Red gravel floor*	(23)	H5.6iii.1	*Burnt hut rubble*
(12)	H5.5.7	*Wall trenches*	(24)	H5.6(i).6	*Red gravel floor*

Site: MAPUNGUBWE: SOUTHERN TERRACE

SQUARE: H5
LAYERS: 3, 5 & 6
PROFILE X-Y

0 100 200
cm

FIGURE 3.94

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Excavation K8

Square K8 in the excavation grid of 1953 was completely excavated, except the stone structures which were left on excavation steps at Profile P-S (Figures 3.95 to 3.100).

Layer 1 (cf. Figures 3.98 and 3.100) was fairly thick and was therefore subdivided into arbitrary Layers 1(i), 1(ii) and 1(iii) no thicker than 15cm[471]. Layer 1(i) was the weathered surface of the deposits in Square K8. It consisted of grey-brown soft, loose, sandy soil which contained grass roots and humus. Two stones were present in the surface of the layer[472]. Layer 1(ii) consisted of light brown soft loose sandy soil containing brown gravel nodules. Large stones were visible in the base of the layer[473]. Layer 1(iii) also consisted of light brown soft loose sand which contained gravel nodules, as well as a concentration of stones at Profile R-S[474]. Layer 1(iii) was dated to 1284 AD[475].

Layer 2 (cf. Figures 3.98 and 3.100) was slightly lighter grey than Layer 1. Layer 2 was, however, to some extent, arbitrarily distinguished from Layer 1. Layer 2 was also arbitrarily subdivided into Layers 2(i) and 2(ii). Layer 2(i) consisted of light brown to grey-brown soft loose sandy soil. The layer contained many nodules of brown gravel and small stones as well as small potsherds, a bone linkshaft, and a concentration of big stones in the centre of the square[476]. Layer 2(ii) consisted of grey-brown soft, sandy soil mixed with nodules of gravel, as well as traces of ash at Profile R-S. The concentration of big stones in the centre of the square in Layer 2(i) was also present in Layer 2(ii) as a pile of stones. The base of Layer 2(ii) tended to be slightly red and sandy[477] and contained the remains of a thin, yellow-brown dolerite gravel floor[478] (cf. Figures 3.98(1) and 3.100). Layer 2(ii) was dated to 1277 AD[479] (cf. Appendix 8.9).

Layer 3 (cf. Figures 3.98 and 3.100) varied from a grey-brown mixture of ash and sandy soil to pink-brown, sandy soil. The layer contained a lot of charcoal[480]. The layer featured a thin, badly weathered floor made of yellow-brown dolerite gravel[481] (cf. Figure 3.98(2)), a nearby patch of yellow-brown dolerite gravel[482], and a straight row of four stones mounted in the open-air living surface with a patch of ash against them[483], interpreted as a fireplace. Layer 3 was dated to 1234 AD[484] (cf. Appendix 8.9).

Layer 4 (cf. Figures 3.98 and 3.100) was a deposit of light brown soft, fine-grained, sandy soil. Features in the layer were patches of a thin weathered floor made of yellow-brown dolerite gravel[485], a thick circular patch of burnt hut-wall clay[486] including a charred hut post in the Corner R of Square K8, and a curved row of stones[487] situated on the perimeter of the burnt wall clay and interpreted as a possible hut wall base support.

Layer 5 (cf. Figures 3.98 and 3.100) consisted of light brown, sandy soil which included traces of ash, as well as a mixture of sandy ash and burnt hut wall clay at Profile R-S[488]. A feature in the layer was the remains of a floor made of yellow-brown dolerite gravel[489] (cf. Figure 3.98(4)) at Profiles Q-R and R-S. There were remains of a wooden post in Corner R of Square K8, and remains of a yellow-brown dolerite gravel floor[490] (cf. Figure 3.98(5)) at Profiles P-S and R-S. Layer 5 also contained a crude circle of stones[491] (with a diameter of approximately 0,5m (cf. Figure 3.99(1)) and a small stone platform[492] consisting of flat stones lying flat on a circular group of supporting stones with a diameter of approximately 0,5m, partially visible in Profile P-S (cf. Figures 3.99(2) and 3.98(6)). There were also a patch of mixed sandy soil and burnt hut debris[493] in Corner Q of the square, which could be part of underlying burnt wall debris[494], including charred grass, in the centre of Square K8 in Layer 5.

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Layer 6 (cf. Figures 3.98 to 100) consisted mainly of light brown sandy soil and included traces of ash, a deposit of pink-brown sandy soil with ash and charcoal at Profile R-S, and a vertical sequence of floors and burnt hut debris. At Profile R-S, the layer was very thick and it was consequently subdivided into Layer 6 and Layer 6(a)[495]. Features in Layer 6 were a floor made of coarse red mudstone gravel[496] (cf. Figures 3.99(3) and 3.98(7)), which was partially visible in Corner R of the square and was interpreted as a circular hut floor, an adjacent external floor consisting of a patch of floor made of yellow-brown dolerite gravel[497] (cf. Figures 3.99(5) and 3.98(9)) partially made of yellow-brown dolerite gravel and extended with a patch of red mudstone gravel at Profile Q-R, and a patch of burnt hut wall debris[498] which contained charred wood and grass on a blackened, burnt soil surface in Corner Q of Square K8.

Layer 6(a) was a very prominent succession of layers of light brown, sandy soil and layers of white ash underneath the hut floor[499] in Corner R of the square, and a surrounding succession of layers consisting of light brown sand, patches of ash and a patch of floor consisting of yellow-brown dolerite gravel[500] (cf. Figure 3.98(10)). Some of the other features in Layer 6(a) were a patch of yellow-brown dolerite gravel floor[501] underlying a concentration of bones, potsherds and a piece of charred wood between the centre of the square and Corner Q of the square (cf. Figure 3.98(11)), a patch of floor made of red mudstone gravel[502] at Profile P-S, and a pink-brown floor made of sand and gravel[503] with a slightly curved row of small post holes[504] against one edge. There were also a small patch of red mudstone gravel floor[505], patches of a yellow-brown dolerite gravel floor[506] at Profile R-S and a sloped, hard, compacted, brown sand surface[507] at Profile R-S.

Layer 7 (cf. Figures 3.98 and 3.100) varied from light brown sandy soil to grey-brown ashy soil which contained charcoal. At Profile R-S, very thin layers of ash and sand were apparently deposited by water, presumably during a shower of rain[508]. Features in the layer were the edge of a floor made of red mudstone gravel[509] in Profile R-S, a patch of red gravel[510] and a stone platform consisting of flat stones supported by upright stones[511] (cf. Figure 3.98(14)). This platform was partially situated underneath the similar stone platform[512] in Corner S in Square K8 (cf. Figure 3.98(6)).

Layer 8 (cf. Figures 3.98 and 3.100) consisted of light brown sandy soil and grey-brown sandy soil and ash, and was to a large extent a deposit of thin micro layers of grey-brown ashy sand which had apparently been deposited by water. The layer contained the remains of floors made of red mudstone gravel and of yellow-brown dolerite gravel. Pure ash was present close to Corner S of the square[513]. Some features were a floor made of yellow-brown dolerite gravel[514] (cf. Figures 3.98(15) and 3.100(14)) and a small patch of a red mudstone gravel floor[515] at Profile R-S.

Layer 9 (cf. Figures 3.98 and 3.100) was a mixed deposit which consisted mostly of soft, light brown, fine-grained, sandy soil at Profile P-Q, as well as alternating micro layers of water-borne light brown sand and grey-brown ashy sand, including small pieces of charcoal, at Profiles P-Q and Q-R. Underlying these micro layers of sandy deposit in Corner Q of the square, a patch of burnt wall clay as well as ash and ashy soil were lying over the remains of a floor[516] made of yellow-brown dolerite gravel (cf. Figure 3.100(15)). Other features in the layer were a floor which was alternately composed of red and yellow mudstone gravel[517] at Profile P-S, a patch of thin floor made of coarse, red mudstone gravel[518], a floor made of mixed yellow and red mudstone gravel[519] (cf. Figure 3.9.8(17)) and a pit[520] filled with ash, ashy soil and household refuse (cf. Figure 3.98(18)) at Profile R-S.

Layer 10 (cf. Figures 3.98 to 3.100) is a thin deposit of mainly brown to light brown sandy soil containing patches of ash, the remains of the small hut, patches of external floor and a

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mortar stone[521]. A prominent feature in the layer was the remains of a small hut with a diameter of approximately 2m which consisted of a floor made of red mudstone gravel[522] (cf. Figures 3.99(10) and 3.98(21)), surrounded by a hut wall trench[523] which was 10cm wide (cf. Figure 3.99(11)), only partially visible at Profile R-S. This hut had been damaged by the digging of the fairly big pit[524] at Profile R-S. Other features were patches of a floor made of light pink to red mudstone gravel[525] (cf. Figure 3.99(8)), a patch of floor made of light red to medium red mudstone gravel[526] (cf. Figure 3.99(9)), a patch of yellow-brown dolerite gravel with a smooth surface[527], a patch of light yellow mudstone gravel[528], and a mortar stone[529] mounted in a small pit together with smaller, supporting stones.

Layer 11 (cf. Figures 3.98 and 100) consisted of light brown sandy soil containing burnt hut wall debris towards Corner S of the square, as well as patches of gravel floors and mortar stone remains[530]. The features in the layer were a red mudstone gravel floor[531] (cf. Figure 3.98(22)) underlying a later floor with the same floor plan[532] at Profile R-S, patches of a floor made of red mudstone gravel[533] (cf. Figure 3.100(18)) with a thin layer of blackened, burnt sandy soil[534] lying on it, the mounting pit of a mortar stone with supporting stones still *in situ* in the pit but with the mortar stone itself missing[535], a mortar stone[536] and supporting stones mounted in a small pit close to Profile P-S, and a small pit with parts of the rim made of hard, compacted pink-brown sandy clay[537] interpreted as a possible mounting pit for a mortar stone.

Layer 12 (cf. Figures 3.98 and 3.100) varied from light brown sandy soil to a grey mixture of ash and sand, charcoal, charred grain, burnt hut remains and floor remains[538]. At Profile Q-R, half of a small hut with an approximate diameter of 1m was visible in Square K8. This hut[539] consisted of the remains of thin, charred wall posts in a wall foundation trench, burnt wall clay and an uneven, sandy surface inside the hut (cf. Figures 3.99(15) and 3.98(23)) instead of a floor. The hut was interpreted as a storage hut with a floor raised above the soil surface. Surrounding the hut were a floor made of red mudstone gravel[540] (cf. Figures 3.99(14) and 3.98(24)) and a small patch of red mudstone gravel floor[541] (cf. Figure 3.99(13)) Other features in the layer were a patch of floor made of red mudstone gravel[542] (cf. Figure 3.99(12)) at Profile R-S, patches of a red mudstone gravel floor[543] (cf. Figure 3.99(16)) which was penetrated by the small pit[544] from above and which appeared not to be visible in Profile P-S, and the edge of a floor[545] (cf. Figure 3.99(17)) which was barely visible in Profile Q-R.

Layer 13 simply consisted of a variety of light brown sandy soil and grey-brown to grey ashy soil which contained many bones as well as charred grain and other seeds[546].

Layer 14 (cf. Figures 3.98 and 3.100) consisted of light brown to red-brown sandy soil containing traces of ash and blackened, burnt patches of soil which appeared to be fireplaces on various levels in the layer. Layer 14 contained bones, potsherds and the remains of gravel floors[547]. The floor remains were a patch of red mudstone gravel floor[548] (cf. Figure 3.100(1)) off-centre in the square, a red mudstone gravel floor[549] at Profiles R-S and P-S (cf. Figure 3.100(2)), and a patch of red mudstone gravel[550] in Corner P of the square (cf. Figure 3.100(3)).

Layer 15 (cf. Figures 3.98 and 3.100) contained a deposit of mainly light brown sandy soil with burnt hut wall debris, traces of ash, nodules of red gravel, a patch of ash which may be interpreted as a fireplace at Profile P-Q, and the remains of several floors[551]. The features in the layer were a prominent red mudstone gravel floor with a platform-shaped surface[552] (cf. Figure 3.100(4)) at Profile R-S, a large floor made of red mudstone gravel[553] (cf. Figure

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3.100(5)) penetrated by a curved strip of brown sand or wall trench[554] (cf. Figure 3.100(6)), a strip of burnt, blackened sand which contained burnt wall debris[555], as well as a burnt floor[556] partially covered by white ash and sandy soil and just visible in Profile Q-R.

Layer 16 (cf. Figures 3.98 and 3.100) consisted of light brown sandy soil and contained gravel floors, a small refuse pit and a lot of burnt hut wall debris[557]. Features in the layer were a floor made of a mixture of light yellow and red mudstone gravel[558] only just visible in Profile P-S, and a prominent layer of burnt hut wall clay[559] which contained hard lumps of wall clay (cf. Figure 3.100(21)). Layer 16 was dated to 1026 AD[560] (cf. Appendix 8.9).

Layer 17 (cf. Figures 3.98 and 3.100) was the surface of the sterile sand bottom underlying the archaeological deposits. It contained a few potsherds, bone fragments, and a small patch of light yellow gravel which appeared to have been deposited in the bottom of a small pit[561].



Figure 3.95[562]
Excavation K8. A view of Features K8.5.4 and K8.7.1: A succession of stone platforms.

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Figure 3.96[563]
Excavation K8. A general view of the completed excavation with the stone platform features *in situ* (cf. also Figure 3.95).

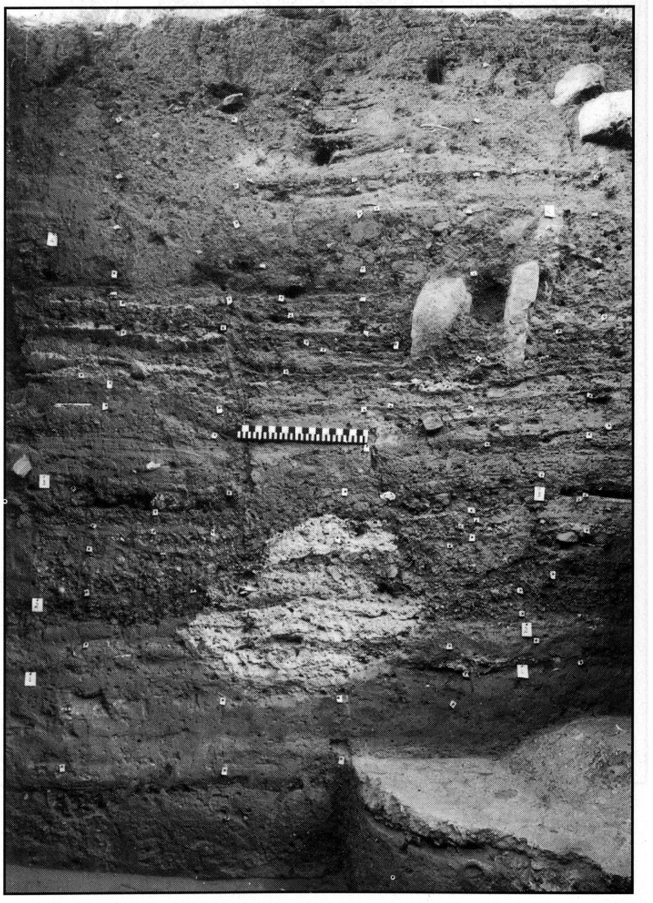

Figure 3.97[564]
Excavation K8. A view of Profile R-S (cf. also Figure 3.98).

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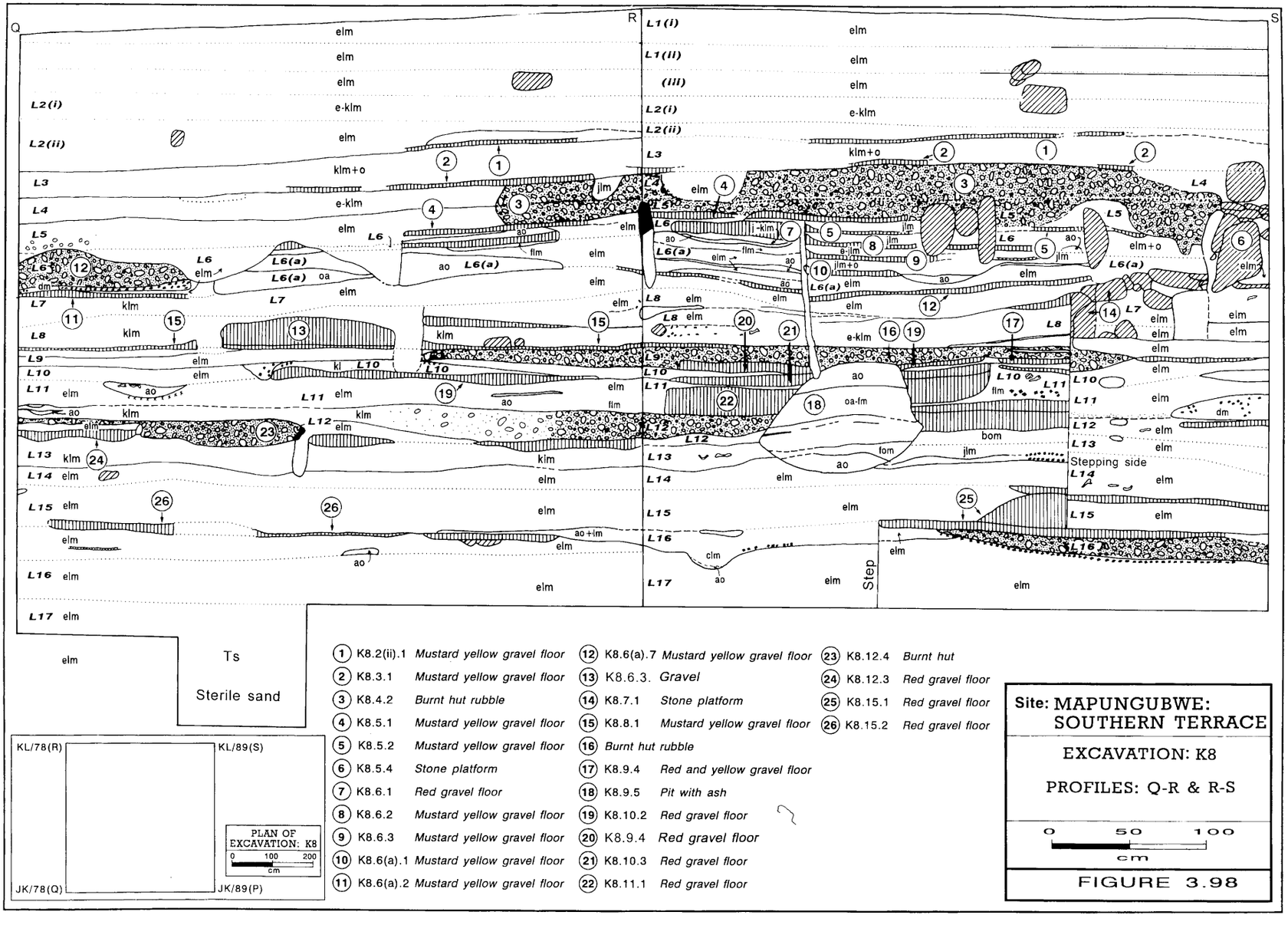

(1) K8.2(ii).1 *Mustard yellow gravel floor*
(2) K8.3.1 *Mustard yellow gravel floor*
(3) K8.4.2 *Burnt hut rubble*
(4) K8.5.1 *Mustard yellow gravel floor*
(5) K8.5.2 *Mustard yellow gravel floor*
(6) K8.5.4 *Stone platform*
(7) K8.6.1 *Red gravel floor*
(8) K8.6.2 *Mustard yellow gravel floor*
(9) K8.6.3 *Mustard yellow gravel floor*
(10) K8.6(a).1 *Mustard yellow gravel floor*
(11) K8.6(a).2 *Mustard yellow gravel floor*
(12) K8.6(a).7 *Mustard yellow gravel floor*
(13) K8.6.3. *Gravel*
(14) K8.7.1 *Stone platform*
(15) K8.8.1 *Mustard yellow gravel floor*
(16) *Burnt hut rubble*
(17) K8.9.4 *Red and yellow gravel floor*
(18) K8.9.5 *Pit with ash*
(19) K8.10.2 *Red gravel floor*
(20) K8.9.4 *Red gravel floor*
(21) K8.10.3 *Red gravel floor*
(22) K8.11.1 *Red gravel floor*
(23) K8.12.4 *Burnt hut*
(24) K8.12.3 *Red gravel floor*
(25) K8.15.1 *Red gravel floor*
(26) K8.15.2 *Red gravel floor*

Site: MAPUNGUBWE: SOUTHERN TERRACE

EXCAVATION: K8

PROFILES: Q-R & R-S

0 50 100
cm

FIGURE 3.98

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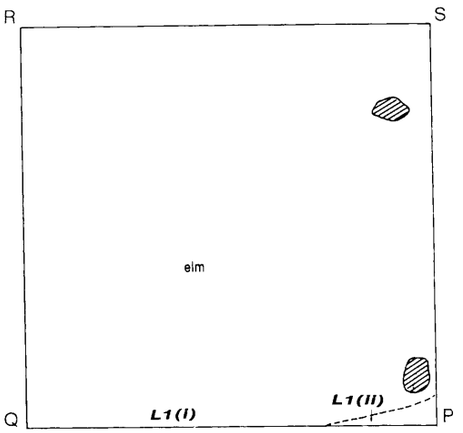
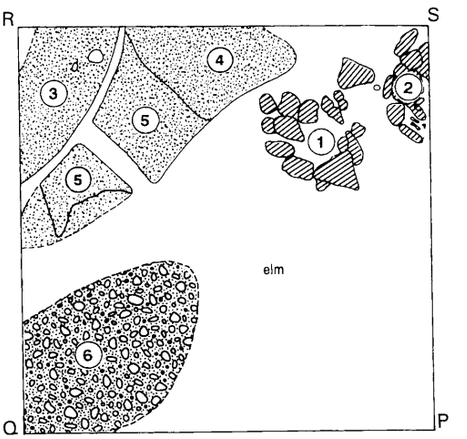
PLAN OF
EXCAVATION

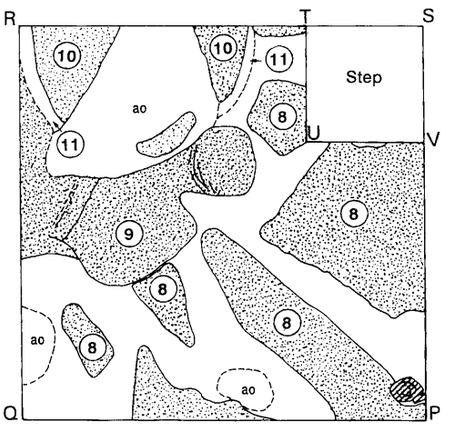
SURFACE OF DEPOSIT



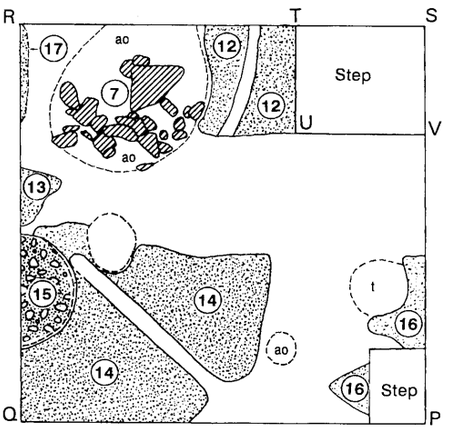
LAYER 6



LAYER 10



LAYER 12



1. K8.5.3 *Stone structure*
2. K8.5.4 *Stone platform*
3. K8.6.1 *Red gravel floor*
4. K8.6.2 *Mustard yellow gravel floor*
5. K8.6.3 *Mustard yellow gravel floor*
6. K8.6.4 *Burnt hut rubble*
7. K8.9.5 *Pit with household refuse*
8. K8.10.1 *Red gravel floor*
9. K8.10.2 *Red gravel floor*
10. K8.10.3 *Red gravel floor*
11. K8.10.4 *Wall trench*
12. K8.12.1 *Red gravel floor*
13. K8.12.2 *Red gravel floor*
14. K8.12.3 *Red gravel floor*
15. K8.12.4 *Burnt hut*
16. K8.12.6 *Red gravel floor*
17. K8.12.7 *Gravel floor*

Site: MAPUNGUBWE:
SOUTHERN TERRACE

SQUARE: K8
LAYERS: 6, 10 & 12

0 100 200
cm

FIGURE 3.99

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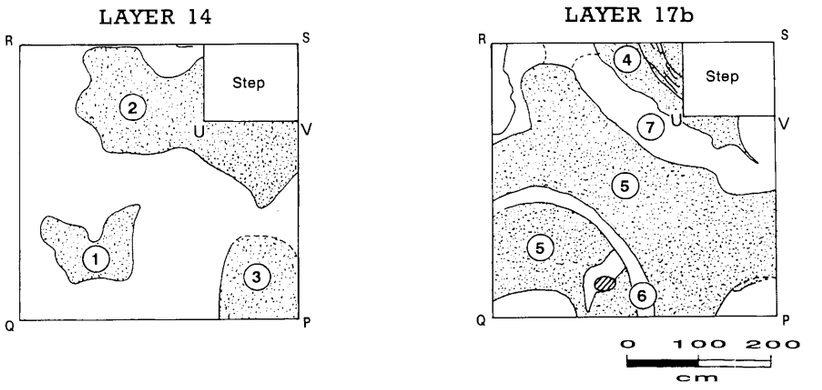

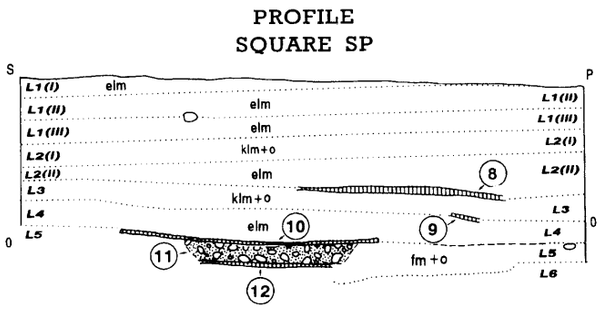

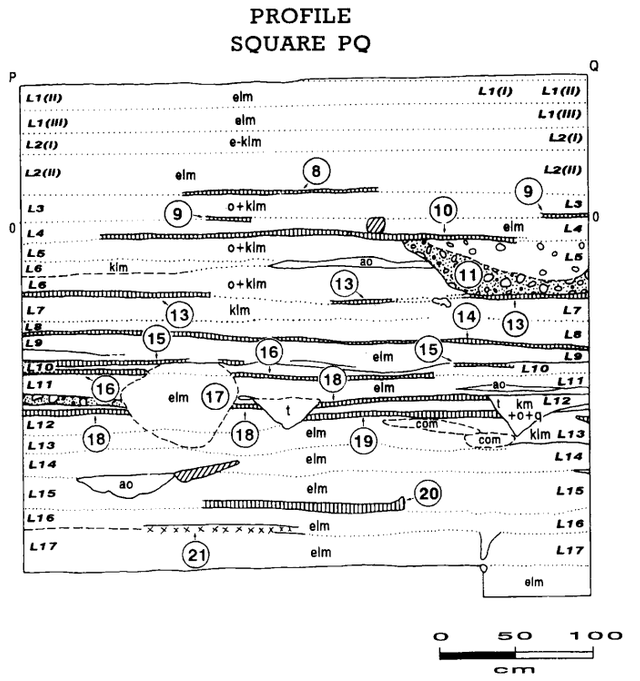

1. K8.14.1 *Red gravel floor*
2. K8.14.2 *Red gravel floor*
3. K8.14.3 *Red gravel floor*
4. K8.15.1 *Red gravel floor*
5. K8.15.2 *Red gravel floor*
6. K8.15.3 *Strip of compacted sand*
7. K8.15.4 *Burnt sand*
8. K8.2(ii).1 *Mustard yellow gravel floor*
9. K8.3.1 *Mustard yellow gravel floor*
10. K8.4.1 *Mustard yellow gravel floor*
11. *Burnt hut rubble*
12. K8.5.2 *Mustard yellow gravel floor*
13. K8.6(a).4 *Sand and gravel floor*
14. K8.8.1 *Mustard yellow gravel floor*
15. K8.9.1 *Mustard yellow gravel floor*
16. K8.10.1 *Red gravel floor*
17. *Pit*
18. K8.11.2 *Red gravel floor*
19. K8.12.3 *Red gravel floor*
20. K8.15.2 *Red gravel floor*
21. K8.16.2 *Burnt hut rubble*

Site:	MAPUNGUBWE: SOUTHERN TERRACE
SQUARE: K8 LAYERS: 14 & 17b PROFILES: S-P & P-Q	
FIGURE 3.100	

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Excavation MST 1

MST 1 is situated at the so-called Mahobe site on the Southern Terrace. The purpose of the excavation was to obtain stratigraphic and cultural information on this prominent and controversial part of the Southern terrace.

MST 1 is a small grid of 12m x 9m, divided into squares of 3m x 3m. Square A2 was excavated[565].

Layer 1 was a deposit of grey-brown sandy soil which contained nodules of gravel, potsherds, bones, a little metal slag and a concentration of fairly big stones[566], as well as a patch of floor made of yellow-brown dolerite gravel[567].

Layer 2 also consisted of grey-brown sandy soil and was arbitrarily distinguished from Layer 1. The features in the layer were patches of a thin, well-made but weathered floor of yellow-brown dolerite gravel[568] with a concentration of white, rocky material[569] lying on the floor, a concentration of stones[570] close to Profile A3-B3, a concentration of stones[571] lying flat on the same level adjacent to Profile B2-B3, a patch of light grey ash[572] which appeared to have been a fireplace, and a bone artefact[573] close to Profile A3-B3.

Layer 3 was a deposit of grey-brown sandy soil which contained a fairly large floor made of yellow-brown dolerite gravel[574], patches of ash at Profile A3-B3 and Profile A2-A3, and concentrations of stones which were mainly present at Profiles A2-A3 and A2-B2[575].

Layer 4 was a deposit which varied from light brown to grey-brown sandy soil[576]. Features in the layer were a patch of floor consisting of hard, consolidated, red mudstone gravel[577], a patch of floor of loose, red mudstone gravel[578] and a concentration of bones mixed with ash[579] in Corner B3 of the square.

Layer 5 consisted of dark brown to grey-brown sandy soil[580]. The features in the layer were a badly damaged patch of red mudstone gravel floor[581], a floor made of yellow-brown dolerite gravel[582], and a sandstone rock with a hollow in its upper surface[583] which may be interpreted as a mortar stone.

Layer 6 was a deposit which varied from grey-brown sandy soil and weathered patches of red mudstone gravel at Profiles A2-B2, B2-B3 and A2-A3[584] to pink-brown sandy soil[585] which contained a fair quantity of household refuse.

Layer 7 consisted alternately of red-brown and grey-brown sandy soil and included ash as well as many bones, potsherds and bone fragments[586]. Features in the layer were a hard, well-compacted, stepped floor made of red mudstone gravel[587] at Profile B2-B3, with a concentration of stones, bone fragments and potsherds[588] lying on the floor, and the remains of a post in a post hole[589] in the floor, as well as a patch of floor made of coarse red mudstone gravel[590] at Profile A2-A3.

Layer 8 consisted of a deposit varying from red-brown to grey-brown sandy soil[591] which included red gravel, stones, bone fragments and potsherds[592] at Profile B2-A2. Prominent features in the layer were a well-made, stepped red mudstone gravel floor[593] with a curved plan form, and an adjacent light yellow mudstone gravel floor[594] with a smooth surface.

Layer 9 was a deposit of grey-brown sandy soil[595]. A prominent feature in the layer was the large floor[596] which consisted of red mudstone gravel.

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Layer 10 consisted alternately of grey-brown sandy soil and red-brown sandy soil. The layer contained a patch of pink-brown sandy soil with a few bone fragments and potsherds in Corner A2 of the square. A patch of ash at Profile B3-A2 could once have been a fire- place[597]. A prominent feature of the layer was a large but thin weathered floor made of pink-red mud-stone gravel[598].

Layer 11 was mainly a prominent deposit of burnt hut debris. The layer consisted of black, burnt, sandy soil which contained a lot of charcoal, the remains of charred posts, ash and burnt wall clay[599]. Features in the layer were a patch of ash[600] which contained burnt soil and charcoal at Profile B3-B2, a patch of ash and charcoal[601] off-centre in Square A2, the burnt debris of what appeared to have been a grain storage hut[602] with an estimated diameter of 0,7m or 0,8m and which consisted of a curved row of charred posts, burnt wall clay and charred grain on a layer of ash, the remains of an adjacent, slightly curved, burnt wall[603] made of poles and clay, the remains of three charred posts and burnt wall clay[604] between the centre and Corner A3 of the square, and the lower jawbone of an animal[605].

Layer 12 consisted alternately of grey-brown sandy soil and soil mixed with a lot of ash. The layer contained a thick deposit of burnt hut wall clay in Corner B3 of the square[606]. Features in the layer were a fairly large disturbance[607], a quantity of potsherds in the centre of the square, and a concentration of bone fragments and potsherds[608] in the base of the layer.

Layer 13 was a deposit of red to red-brown sandy soil which was mixed with nodules of red gravel[609].

Layer 14 consisted of a succession of two deposits of white material which appeared to be humus and which was interpreted as animal dung[610]. The upper deposit[611] was very uneven and was approximately 15cm thick. The lower deposit of humous material was up to 45cm thick and contained a few bone fragments and large stones[612].

Layer 15 consisted of sandy soil which contained ash and charcoal in its surface. The rest of the layer consisted of sterile bottom sand and was arbitrarily distinguished from the underlying sterile bottom sand deposit[613].

The stratification in Square A2 appeared to have developed during five phases. The first and oldest phase consisted of Layer 15 and may be interpreted as the surface of a sterile, primeval sand deposit on which informal household activities such as limited and perhaps infrequent cooking or dumping of household refuse could have taken place. The second phase of the stratification consisted of the humus material in Layer 14 which existed during a very early stage of the site history. The third phase consisted of the very conspicuous burnt debris of an apparent grain storage hut, red mudstone gravel floors and household refuse in Layers 13, 12 and 11. The fourth phase of the stratification was represented by Layers 10, 9, 8, 7, 6, 5 and 4 which contained a succession of red mudstone gravel floors, as well as a few late yellow-brown dolerite gravel floors in Layers 5 and 4. The fifth and latest phase in the stratification consisted of a grey-brown deposit of sandy soil which contained thin, yellow-brown dolerite gravel floors, arrow linkshafts made of bone, as well as a few stone concentrations which could have been the remains of small stone platforms[614].

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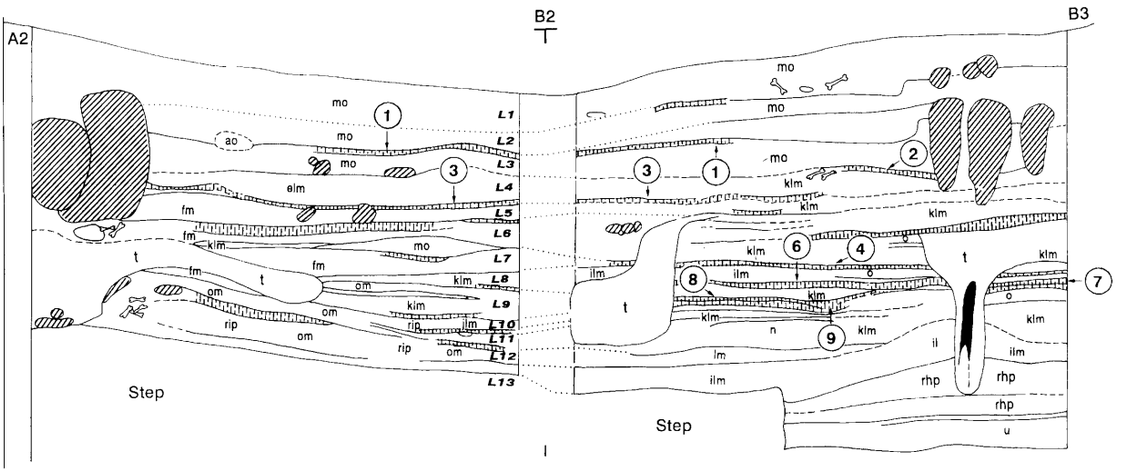
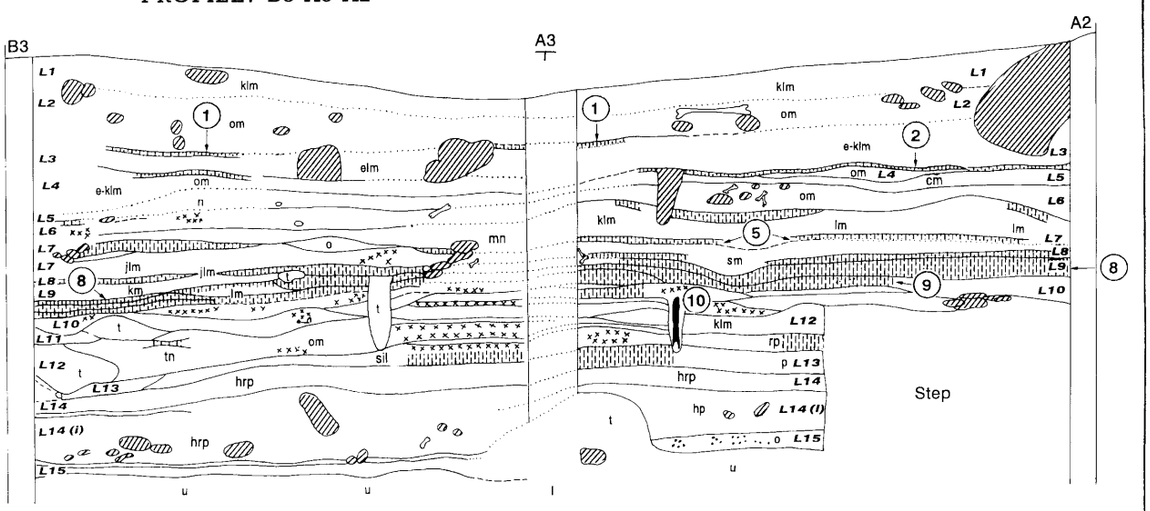
PROFILE: A2-B2-B3



PROFILE: B3-A3-A2



(1) A2.2.5 *Mustard yellow gravel floor*
(2) A2.3.1 *Mustard yellow gravel floor*
(3) A2.4.2 *Red gravel floor*
(4) A2.7.1 *Red gravel floor*
(5) A2.7.2 *Red gravel floor*
(6) A2.8.2 *Red gravel floor*
(7) A2.8.3 *Light yellow gravel floor*
(8) A2.9.1 *Red gravel floor*
(9) A2.10.1 *Red gravel floor*
(10) A2.11.4 *Burnt hut*

Site:	MAPUNGUBWE: SOUTHERN TERRACE
EXCAVATION: MST 1 SQUARE: A2 PROFILES: A2-B3 & B3-A2	
0 50 100 cm	
FIGURE 3.101	

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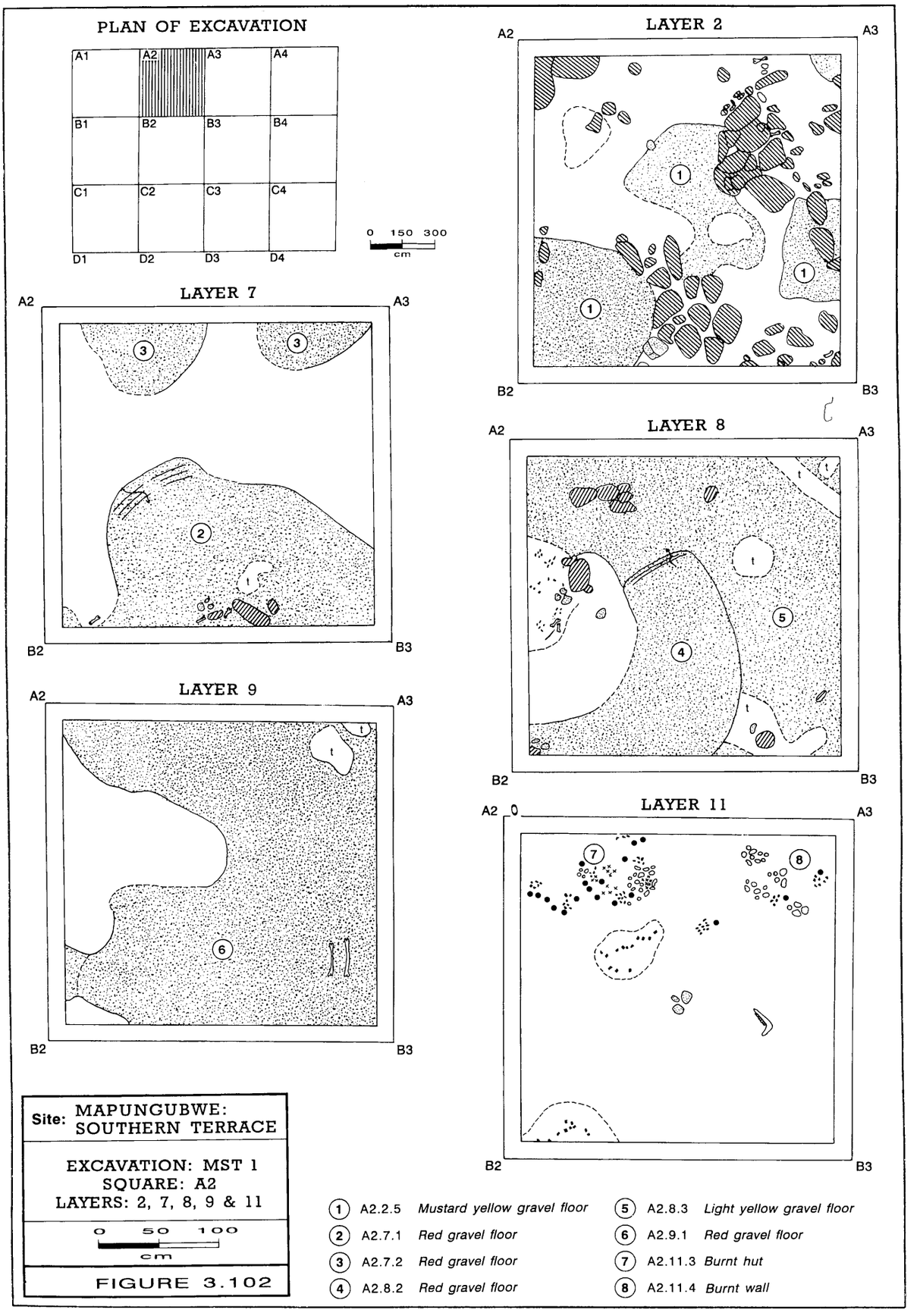

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Stone features at Mapungubwe

Apart from the known, prominent stone terrace walls on Mapungubwe Hill (cf. Figure 2.4), the Southern Terrace (cf. Figure 2.6), and the free-standing wall at the main entrance on Mapungubwe Hill (cf. Figure 2.5), a number of small terrace or support walls and free-standing walls on and around Mapungubwe Hill have been observed but not recorded.

During recent years, the gradual erosion of the site surface exposed several stone structures, some of which are circular and are associated with mortar stones. These circular stone features, which are situated in the present site surface and upper layer of the settlement deposit on Mapungubwe, are different from any other stone features which have so far been found during the excavations and will be carefully recorded during the next phase of the Greefswald Archaeological Project. Each consists of flat, upright stones arranged on a circular ground plan, with a mortar stone on one side. Two of these features have been observed near Reference Point Gr 11 on the western half of the summit of Mapungubwe Hill (cf. Figures 3.104, 3.105 and 3.106). Close to the eastern foot of Mapungubwe Hill, a small group of circular stone features have been observed and included on the site map as the Eastern Settlement Element (cf. Figure 3.53). This Eastern Settlement Element includes one feature which consists of a circular, double row of upright stones positioned against a large rock with a mortar hole (cf. Figure 3.107). The circular stone features associated with mortar stones could perhaps be interpreted as the wall base and floor remains of granaries, or possibly the bases of windbreaks, which came into use possibly towards the end of the settlement sequence of Mapungubwe.

Numerous mortar holes, sets of holes in rows which served as game boards, post holes and wall foundation trench marks on the rock surface of Mapungubwe Hill (cf. Figure 3.103) are evidence of everyday life on the Hill, and are gradually deteriorating as a result of natural erosion. These features have not yet been mapped.



Figure 3.103[615]

Examples of stone features in the rock surface on Mapungubwe Hill. To the left in the foreground, one can see a mortar hole. A row of wall post holes in a wall base trench is visible to the right. In the centre and in the background, sets of holes in rows are the remains of game boards.

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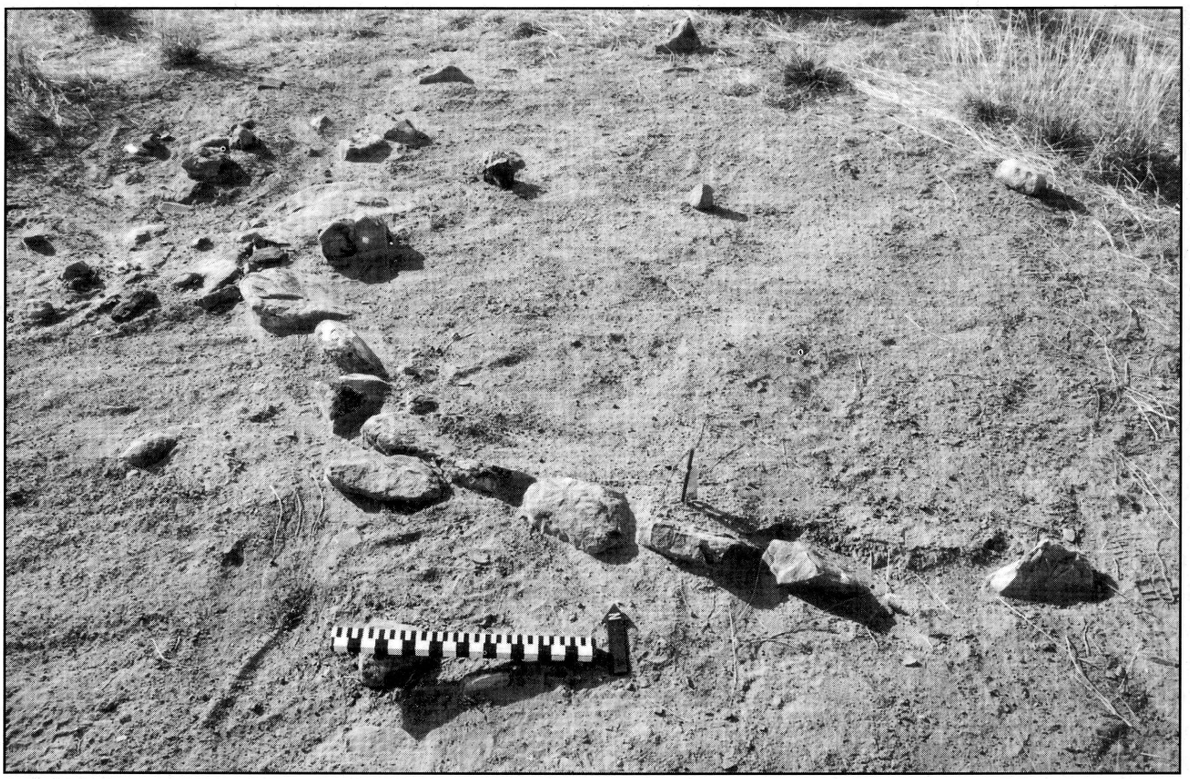

Figure 3.104[616]

The exposed remains of a circular stone structure[617] in the western part of Mapungubwe Hill, as observed in 1996. A mortar stone is situated at the far end of the row of stones (cf. also Figure 3.105).

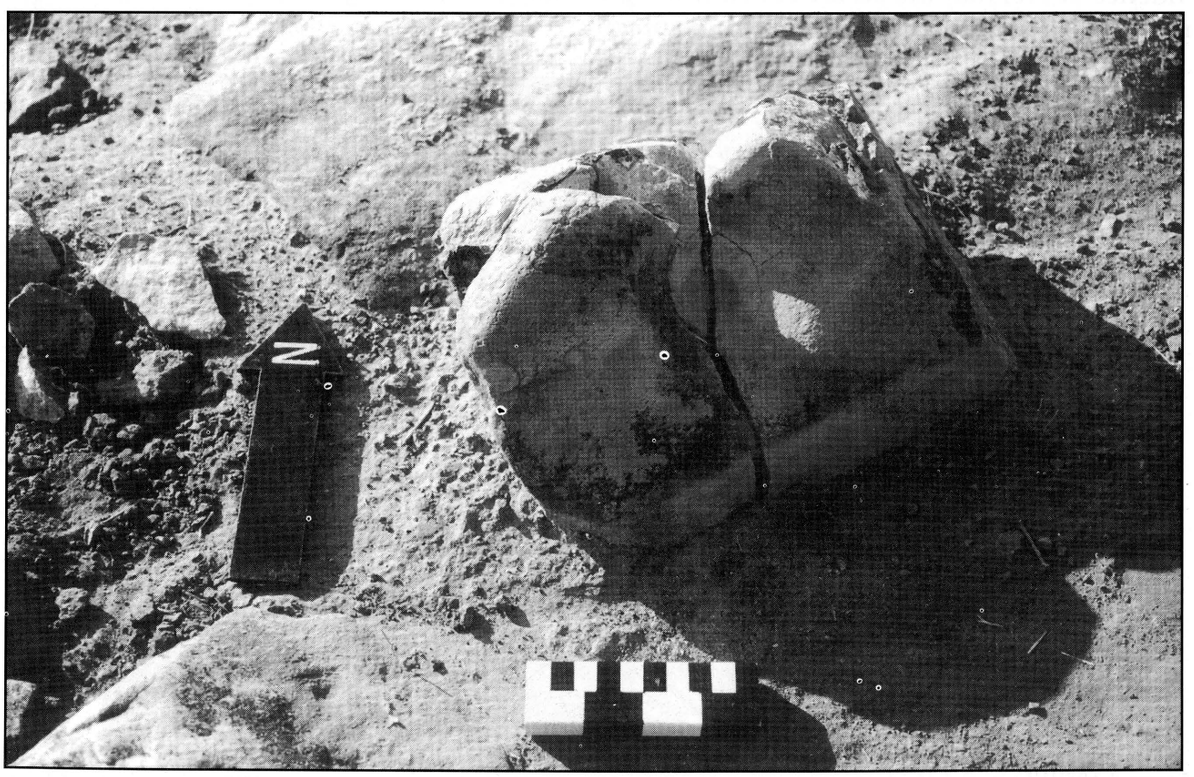

Figure 3.105[618]

A close-up view of a mortar stone with an oval hole, found on Mapungubwe Hill, as observed in 1996. It is situated in the circle of upright stones[619] shown in Figure 3.104.

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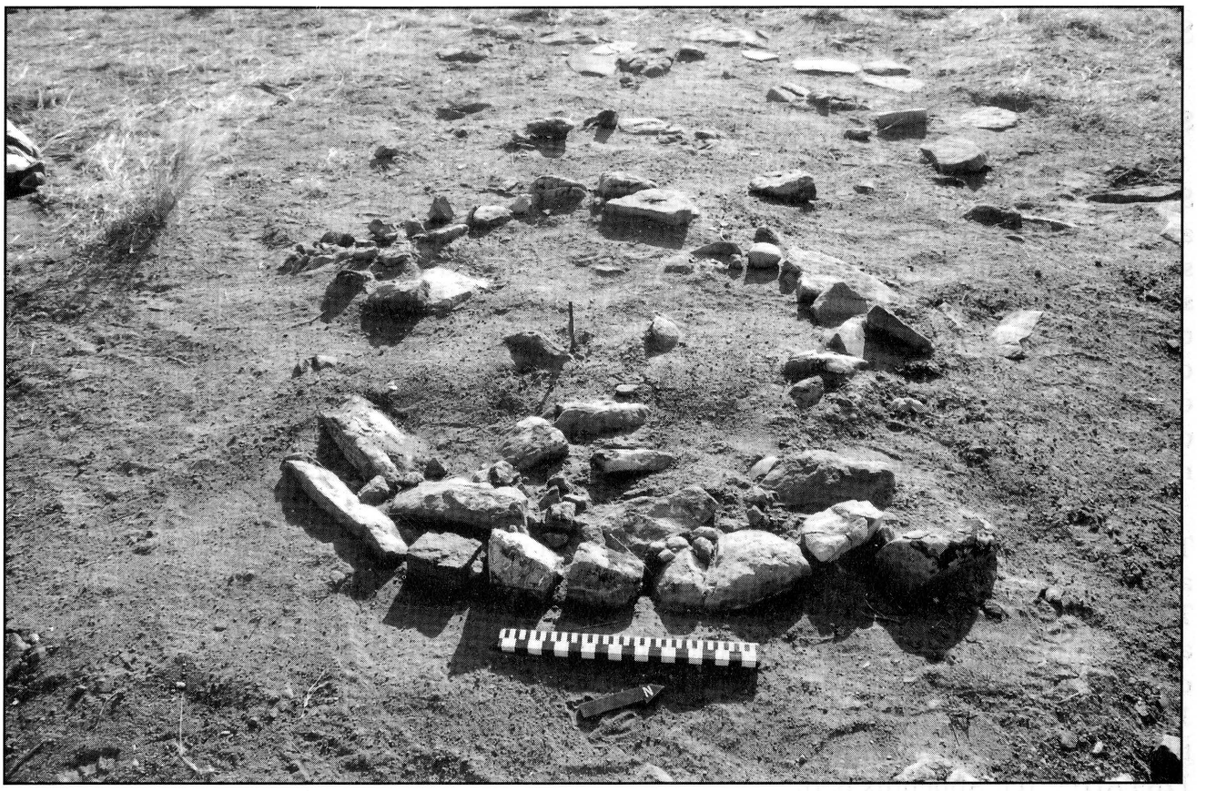

Figure 3.106[620]
The exposed remains of a circular stone structure[621] on the western part of Mapungubwe Hill, as observed in 1996. A mortar stone is situated amongst flat stones on the far side of the stone circle.

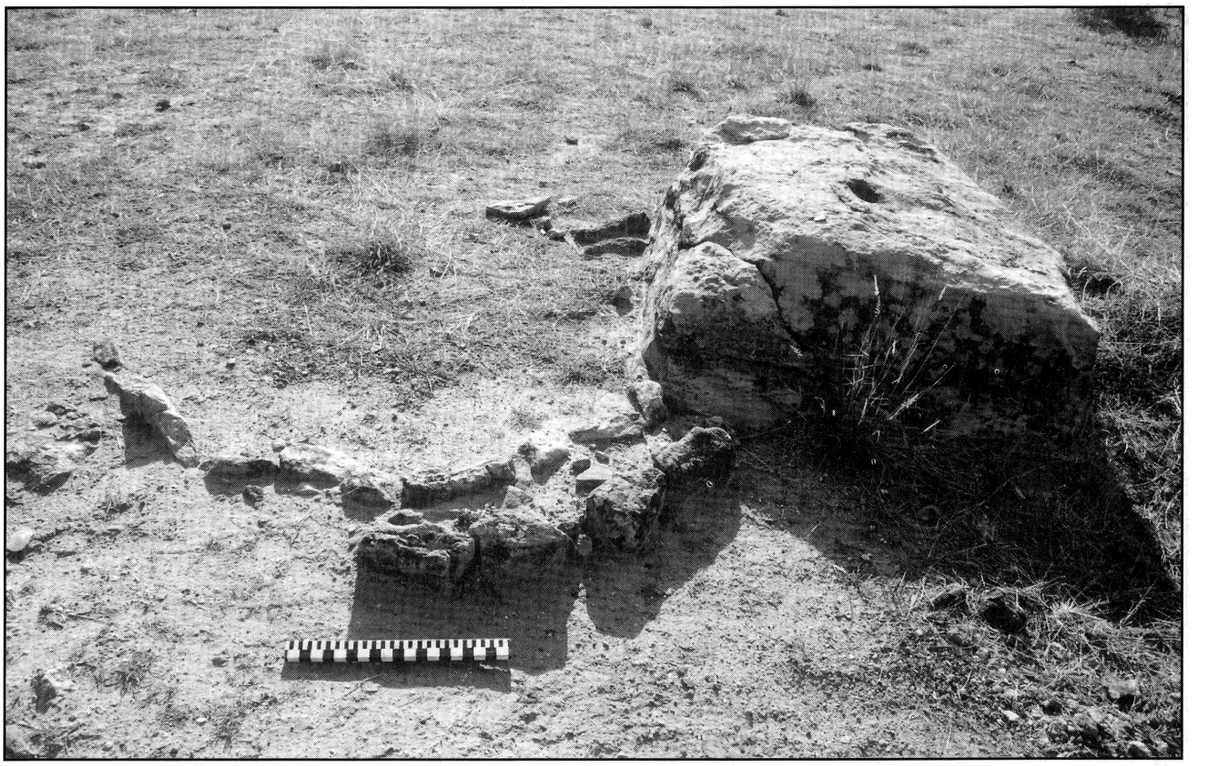

Figure 3.107[622]
The remains of a circular stone structure against a rock with a mortar hole, situated at the eastern foot of Mapungubwe Hill.

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Sites to the west and east of Mapungubwe

Site Map 4

Site Map 4 is a small site close to Mapungubwe Hill to the north-east of the Hill (cf. Figures 1.1 and 1.2) on Grid Reference 22 12' 32,9" S and 29 23' 23,1" E (cf. Appendix 8.11). The site is situated on a natural hill terrace, close to the location of a spring which still existed on the slope of the natural terrace during the 1930's. Since then, the spring has dried up. The site is currently known as the North-Eastern Terrace. Site Map 4 consists of what appears to be a deposit of animal dung close to the south-western perimeter of the natural terrace, and at least one midden deposit on the northern to north-eastern side of the kraal deposit. The midden deposits contain ash mixed with sandy soil, as well as small quantities of potsherds, bone fragments and trade glass beads. These deposits are almost one metre thick.

The surveyor's reference points on the site are iron pegs in cement, and are numbered Gr 1 and Gr 13 (cf. Appendix 8.10). During 1993 to 1995, a test excavation recorded as Test Trench Ts 1 (cf. Figures 2.14 and 3.108) was initiated on the North-Eastern Terrace to obtain cultural material for the purposes of cultural identification and to determine the age of the site. The deposits in the test trench were divided into arbitrary layers with a maximum thickness of 15cm. The small number of potsherds found in the midden deposit appear to be similar to those from Mapungubwe Hill. The calibrated date on bone from Layer 3 in Test Trench 1 is 1289 AD[623] (cf. Appendix 8.9).

The archaeological material still has to be studied and the relationship between the midden and kraal deposits on the North-Eastern Terrace still need to be investigated. At present, this site is interpreted as a small domestic and kraal site which served as a satellite cattle or small stock herding place for the community on Mapungubwe during the last phase of the settlement sequence on Mapungubwe. It is, however, also possible that the North-Eastern Terrace could have been inhabited shortly after Mapungubwe Hill was abandoned.

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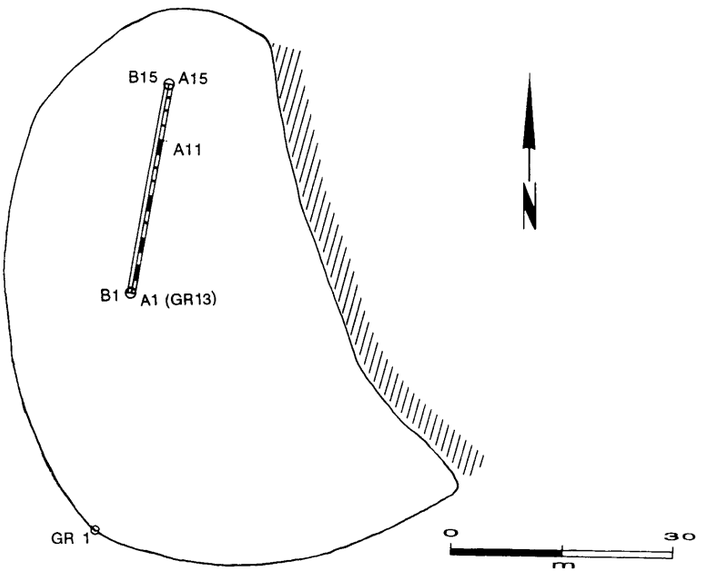

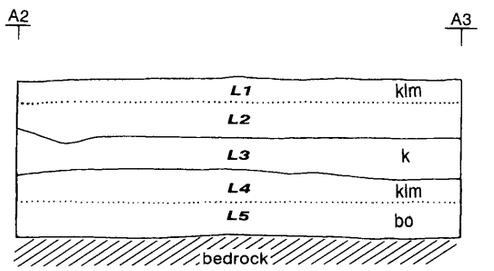

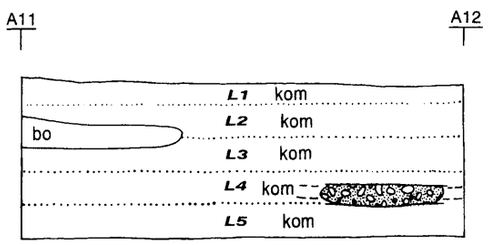

Site:	MAP 4
EXCAVATION: Ts 1 PROFILES: A2-A3, A11-A12	
0 50 100 cm	
FIGURE 3.108	

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Site Map 10

Site Map 10 is a small site close to Mapungubwe Hill, to the east (cf. Figures 1.1 and 1.2) on Grid Reference 22 12' 47,6" S and 29 23' 48,1" E (cf. Appendix 8.11). The site is situated on a rocky ridge and consists of what appears to be a kraal deposit and a small midden. The kraal deposit is situated close to the southern perimeter of the summit of the ridge. The midden consists of a mixture of ash and sand and contains a small number of potsherds and bone fragments. On the surface where a modern vehicle track cuts through the site to the north of the kraal and midden deposits, a small concentration of bone fragments has been observed. Some of the potsherds found on the site appear to be similar to the Mapungubwe pottery, but others appear to be typologically different from the Mapungubwe pottery series.

A small test excavation, recorded as Test Trench 1, was made in the midden deposit of the site during the period between 1993 and 1995 (cf. Figure 3.109). The observed site deposits are shallow with a maximum depth of approximately 45cm. The deposit in the test trench was divided into arbitrary layers with a maximum thickness of 15cm. The small quantity of cultural material from the test trench is not yet sufficient for identification purposes. The calibrated radiocarbon date on bone from Layer 2 in Test Trench 1 is 1582 AD or 1547 AD or 1635 AD[624] (cf. Appendix 8.9). The surveyor's reference point on Map 10 is an iron peg in cement, recorded as Gr 14 (cf. Appendix 8.10).

At present, Map 10 can only be interpreted as the small domestic and cattle or small stock herding site of a Late Iron Age community which existed on Greefswald by approximately 1600 AD.

To the east of Map 10, a large stone platform is situated on Grid Reference 22 12' 48,7" S and 29 23' 52,2" E (cf. Appendix 8.11). A surveyors' reference point on the western side of the platform can be recognised by the number Gr 15 in cement (cf. Appendix 8.10). This platform was recorded as Map 11. The possible relationship between the platform and Map 10 is unknown.

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Site Map 12

Site Map 12 is situated amongst the hills, on Grid Reference 22 12' 37,3" S and 29 23' 51,4" E (cf. Appendix 8.11), to the east of Mapungubwe Hill and to the north of Map 10 (cf. Figures 1.1 and 1.2). The site consists of what appears to be a cattle or small stock kraal deposit and adjacent midden near the western perimeter of the site and a small midden to the south-east of the kraal deposit.

A small test trench was initiated in each of the two middens during 1993 and 1994. These trenches were recorded as Ts 1 and Ts 2 respectively (cf. Figure 3.109). The observed site deposits are shallow with a maximum depth of approximately 45cm. The deposit in the test trench was divided into arbitrary layers with a maximum thickness of 15cm and in both trenches consisted mainly of mixed sand and ash, and a small quantity of potsherds, glass beads, ostrich eggshell beads and bone fragments. So far, too few materials have been found here for study yet, although some of the potsherds seem to be similar to the pottery of Mapungubwe. The calibrated date on bone from Layer 2 in Test Trench 1 is 1660 AD[625], and the calibrated radiocarbon date on bone from Layer 2 in Test Trench 2 is 1396 AD[626] (cf. Appendix 8.9). The surveyor's reference point on Map 12 is an iron peg in cement, recorded as Gr 16 (cf. Appendix 8.10).

At present, Map 12 may be interpreted as the small domestic and cattle or small stock herding site of at least one Late Iron Age community. The relationship between the middens, kraal deposit and small stone structures on Map 12 is still unclear. According to the radiocarbon dates, ash deposits with household refuse had been left on the site at the end of the fourteenth century, a century after the abandonment of Mapungubwe, and then again two and a half centuries later, by the mid-seventeenth century.

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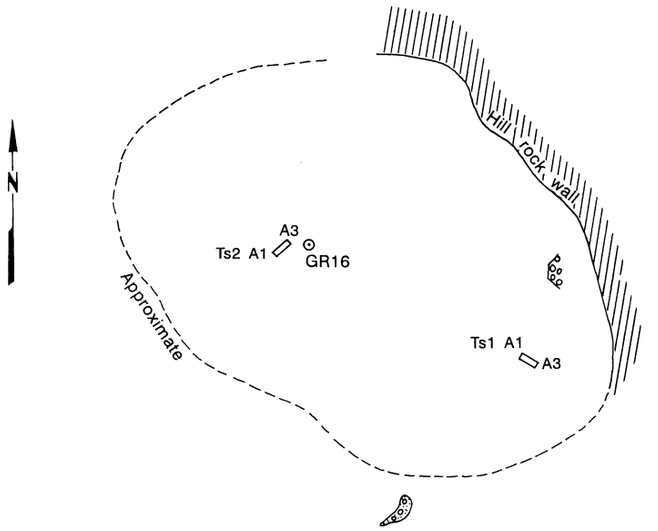
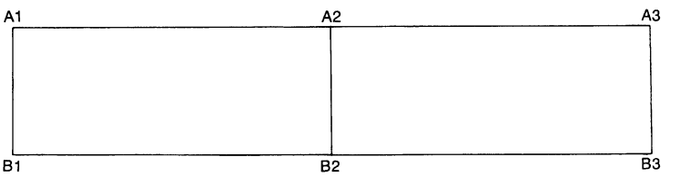
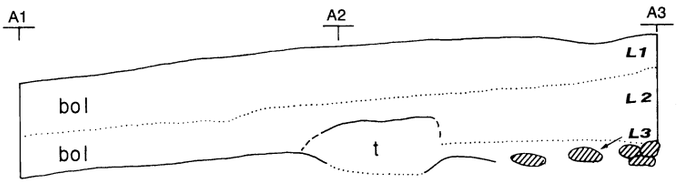


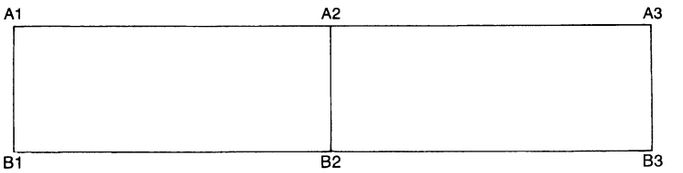
TS1 PLAN



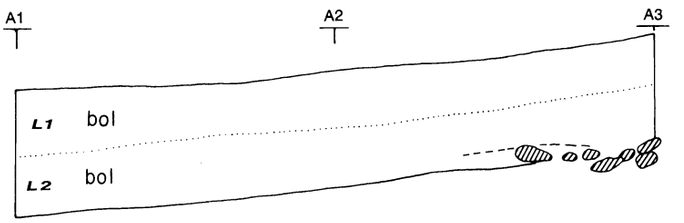
TS1 PROFILE A1-A2-A3



TS2 PLAN



TS2 PROFILE A1-A2-A3



Site:	MAP 12
EXCAVATIONS: Ts1 & Ts 2 PROFILES: A1-A3	
0 100 cm	
FIGURE 3.109	

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3.4 Summary: Site features, age and chronology

This chapter is a descriptive summary of the stratigraphy of the main Greefswald sites as presented in Volumes 1, 4 and 5 of the comprehensive report of 1979[627] and subsequent supplementary field notes. All these records are part of Phase 3 of the Greefswald Project. These stratigraphic records support a reconstruction of settlement chronology, pottery sequence and the context of site or settlement features.

The oldest Iron Age material found on Greefswald up to now are a small number of Early Iron Age potsherds recovered from the bottom layers at Mapungubwe during the excavations of the 1930's and 1970's. This occurrence of Early Iron Age material of unknown age is assumed to be evidence of a small settlement which preceded the main occupation of K2 and Mapungubwe, and is provisionally listed as Phase One of the settlement chronology of the main sites. A few sherds of early Iron Age pots were present in sandy soil underlying Layer 17 in Square K8 on the Southern Terrace and Layer 11 in Excavation Mk 1 on Mapungubwe Hill (cf. Table 3.1).

Phase Two of the settlement sequence on the main sites is dated to the period between 1030 AD and 1220 AD (cf. Appendix 8.9), which includes the deposits of K2 and the bottom layers on the Southern Terrace and Mapungubwe Hill (cf. Table 3.1). At K2, there are large deposits which accumulated during this extended period of almost two centuries. The Phase Two settlement remains of K2 include a substantial vertical sequence of floor and hut remains (cf. Figures 3.15 and 3.22 to 3.25) in the central settlement area, adjacent to the large central animal kraal deposits (cf. Figure 3.3), and central midden deposits (cf. Figures 3.4 to 3.12) which lie partially over these kraal deposits. A prominent aspect of the central settlement area is the location of the sequence of floors and hut remains on the low ridge in the centre of the K2 valley, and the lower position of the kraal deposits at the western foot of this ridge, on the western side of the main hut complex sequence (cf. Figure 3.2). This central settlement area is surrounded by less prominent concentrations of gravel floors (cf. Figures 3.31 to 3.33, 3.38 and 3.47) and midden deposits (cf. Figures 3.34 to 3.39 and 3.44) in the north-eastern, western and eastern peripheral settlement areas (cf. Figure 3.2). Within these deposits, site features consist of a number of floors made of mudstone gravel (cf. Figures 3.16 to 3.17) and the remains of large double walled huts (cf. Figures 3.21 and 3.27), medium sized huts (cf. Figures 3.14 and 3.18 to 3.20), and small grain storage huts (cf. Figures 3.26 and 3.28).

During settlement Phase Two, similar huts existed at Mapungubwe (cf. Figures 3.60, 3.74, 3.80 to 3.81, 3.85 and 3.90). In contrast to K2, the contemporary settlement deposits at Mapungubwe appear to be thin (cf. Table 3.1). This is believed to indicate that there was less intensive settlement at Mapungubwe than at K2. It also seems possible that the settlement possibly only extended to the summit of Mapungubwe Hill towards the end of settlement Phase Two. The layers belonging to Phase Two were sealed off by burnt hut rubble on the Southern Terrace and in Excavation Mk 1 on Mapungubwe Hill.

Settlement Phase Three lasted from 1220 AD to about 1250 AD (cf. Appendix 8.9). During this short period of a merely thirty years, settlement was discontinued on K2. By contrast, deep deposits consisting of successions of gravel floors, burnt hut remains and related materials developed on the Southern Terrace (cf. Figures 3.83 to 3.84, 3.91 to 3.93, 3.97 to 3.98) and to a lesser degree on the western end of Mapungubwe Hill (cf. Figures 3.61 to 3.6.5). The gravel floors were made of red and light yellow mudstone gravel, except the latest floors in this phase, which were made of mustard yellow dolerite gravel. The intensive settlement activities during this phase are also reflected by the numerous household structures in these deposits.

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The lower layers in the older part of this phase are also sealed off by burnt hut rubble, and are provisionally called Phase Three(a) (cf. Table 3.1). In the layers of Phase Three(a), the base remains of large double-walled huts (cf. Figures 3.58 and 3.73) as well as small storage huts (cf. Figures 3.88 and 3.94) have been recorded. Numerous mortar stones are also present (cf. Figures 3.57, 3.88 to 3.89 and 3.94).

The upper layers in the younger part of Phase Three are provisionally referred to as Phase Three(b) (cf. Table 3.1). The layers in Phase Three(b) contain the remains of huts such as large double-walled huts (cf. Figures 3.87 and 3.94), mortar stones (cf. Figures 3.78 and 3.85) and a number of stone platforms (cf. Figures 3.56, 3.61, 3.63, 3.65, 3.77, 3.95 to 3.96). Phase Three(b) is also sealed off by a prominent layer of burnt hut rubble. Floors made of red mudstone and mustard yellow dolerite gravel have been observed in deposits underneath some of the stone terrace walls at the 'Main Entrance' on the Southern Terrace and also underneath stone terrace wall remains on Mapungubwe Hill. Although no systematic stratigraphic study of these stone terrace walls has as yet been undertaken, one may conclude that the walls belonged to settlement Phase Three(b). If these walls were indeed part of this phase of the settlement sequence, they would have been built by about 1250 AD.

Settlement Phase Four on Mapungubwe is dated to the period between 1250 AD and 1290 AD (cf. Appendix 8.9). In contrast to Phase Three, the deposits of Phase Four on both Mapungubwe Hill and the Southern Terrace excavated so far have not been found to contain prominent hut remains or numbers of other household structures such as stone platforms. The only features in these later deposits contain the remains of numerous thin, uneven floors made of dolerite gravel. Although the stone terrace walls could have been used by the inhabitants during the first part of Phase Four, a close inspection of the remaining stratified contexts of the walls revealed that the later soil deposits eventually covered many of these terrace walls on Mapungubwe Hill and the Southern Terrace. On the eastern part of Mapungubwe Hill and at the eastern foot of Mapungubwe Hill, circular stone structures associated with mortar stones (cf. Figures 3.104 to 3.107) in the surface of the deposits are clearly late household structures which might be interpreted as the remains of grain storage huts or grain processing facilities. These late features have not yet been found in any of the excavations. The small site recorded as Map 4 (cf. Figures 1.1 and 3.108) is either contemporary with settlement Phase Four or slightly later (cf. Appendix 8.9, Table 3.2). The preliminary results of the test trenches on Map 4 and a visual inspection of the site as well as pottery from the site indicate that the site is probably related to Mapungubwe. The site is interpreted as an animal kraal site where domesticated animals of the last inhabitants of Mapungubwe or their descendants were kept.

The animal kraal and midden deposits of the sites recorded as Map 10 (cf. Figure 1.1) and Map 12 (cf. Figures 1.1, 3.109) to the east of Mapungubwe and Map 20 to the west of Mapungubwe all postdate Mapungubwe (cf. Table 3.2), which indicates that small subsistence farming communities were periodically present till at least the seventeenth century AD.

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Table 3.1 - Layers and radiocarbon dates: K2 and Mapungubwe

PHASE	K2						SOUTHERN TERRACE				MAPUNGUBWE		
	TG 1968	TS 5	TS 3	TS 2/D4	TS 1	TS 6	F 4	H 5	K 8	MST 1	MK 1	MK 3	1300AD
IV							1 2	1 2 *1414AD(?)*	1 *1284AD* 2 *1277AD* 3 *1234AD*	1 2 3	1 2 3	1 2 3 *1220AD* 4 5	
(b)							3 4 5 6	3	4 5 6	4 5 6 7	4 5 6	6 7	
III (a)							7(i) 7(ii)	4(i) 4(ii)	7 8	8 9 10	7 8		
							7(iii) 7(iv) 8(i) 8(ii)	5(i) 5(ii) 5(iii) 5(iv)	9 10 11	11 12 13	9(i) 9(ii)		
							8(iii) 8(iv)	6(i) 6(ii)	12 13 14		10		1200AD
II	1 2 3 *1220AD* 6 *1213AD* 8b *1243AD* *1173AD* 11	1 2 3 *1286AD?* 4 5 skel. *825 or 857AD*	1 2-5 6 *1052 or 1087 or 1150AD* 7 15 *1163AD* *1052or 1087 or 1150AD* 16-24	1 2 *1033AD* 3 4 5	1 2 *1220AD* *1046 or* 3 *1103 or* 4 *1114AD* 5	1-3 4-5 6-8 *1167* 9 10-12 13	9 10 *1026AD*	6(iii) *1173AD*	15 *1234AD* 16 *1026AD* 17	14 14(i) 15	11 *1243AD* *1252AD*		1100AD
I									17 *base*		11 *base*		1000AD

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Table 3.2 - Sequence of sites on Greefswald

nC	MAP 2: K2	MAP 1: MAPUNGUBWE SOUTHERN TERRACE	MAP 1: MAPUNGUBWE HILL	MAP 4	MAP 10	MAP 12	SAM 1 MAP 20
1700							
					1635	1660	
1600					1582 or 1547		
1500							1437
1400						1396	
1300	1220	1290	1290	1289			
1200			1220 (?)				
1100							
1000	1030	1030					
900							

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3.5 Endnote references

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4 CULTURAL AND HUMAN REMAINS ON MAPUNGUBWE AND K2

4.1 An overview of specialist reports

Since the excavations on Mapungubwe and K2 began, a number of specialist reports on archaeological materials from the Greefswald sites have been completed and have been included in various research reports and publications. The reports have concentrated on the ceramics, metallurgical material, glass beads, human and animal skeletal remains and the material used for radiocarbon dating. Charred plant seeds were identified and samples of man-made hut or living floors were investigated. These research reports represent the diverse results of studies completed over a period of sixty years, during which time the research goals, the methodology and the views of scientists have changed or developed to such a degree that many of the materials were re-investigated and a large volume of research data has accumulated[1]. For the purposes of the field report on the field work done from 1970 to 1995, a brief account is included on the purposes, methods and results of specialist reports which were part of the project from 1970 to 1995[2], with brief comments on the reports before 1970.

4.2 Artefacts

Ceramics

Pottery types and sequence

The ceramics from the Greefswald sites consist of a number of complete pottery vessels and potsherds, and sundry other items made and used by the inhabitants of the sites. A small number of typologically different pottery specimens are suspected to be imported artefacts. There was a variety of pottery objects on the Greefswald sites, mainly vessels or containers representing different type series, figurines of humans and animals, small conical objects, and several other artefacts including large beads, garden roller glass bead moulds, whistles, spoons, spindle whorls, discs and at least one funnel.

The site contexts in which these objects were found varied from stratified primary contexts, such as burnt hut remains, what appeared to be storage pits, burials, and household refuse dumps, to secondary contexts such as eroded site surface levels, springhare burrow mounds as well as rubble from man-made pits, hut foundation trenches and grave pits in existing site deposits.

Not only was the pottery an important part of the every day life of the Greefswald people, but the study of it by the archaeologists who came later was invaluable in reconstructing the ways of life, site chronologies and site distribution patterns of the past. 'Pottery, that loyal friend, alone tells a straightforward tale, though one not devoid of a complexity of its own'[3]. Consequently, the pottery from the Greefswald sites was described, analysed, interpreted and discussed for various purposes on various occasions.

An overview of pottery studies

Aspects of the ceramic material were investigated by Schofield, Voigt, Meyer, and Meyer and Esterhuizen[4]. The publications of Schofield were the main source for references by several other authors referring to the Iron Age in general and to the Greefswald sites in particular.

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These publications represent a variety of views, purposes of research and interpretation and periods of archaeological theory with regard to the Iron Age. In the field report on the excavations from 1970 onwards, attention was focused on pottery typology to evaluate some of the conclusions reached by Gardner and Schofield, and to establish a chronology of pottery series to test and supplement conclusions reached on the stratigraphic sequence of the Greefswald sites. General observations on the characteristics of ceramic material were made to reconstruct material aspects of the everyday life of the Iron Age communities as reflected by the stratified evidence.

Schofield, who provided the first report on these sites' pottery[5], concentrated on a typological classification based on vessel shape in addition to features such as rim shape, decoration, colour, surface and finish. Features such as knobs, spouts and handles divided the Greefswald pottery into classes, namely Class M1 from Mapungubwe, Class M2 from K2 and Class M3 which was believed to be imported material. Class M1 was regarded as similar to some Zimbabwe and Makalanga ware and the Class B ware of Caton-Thompson. Class M2 was identified as similar to Caton-Thompson's Class A pottery from Zimbabwe, as well as pottery from other sites. The Class M3 pottery was suspected to be of Sotho origin[6]. Schofield had to base his pottery study on the pottery selected from large scale excavations with few stratigraphic records, and on pottery found in graves. In 1948, he published a percentage analysis of his pottery classes in the upper and lower levels on Mapungubwe, demonstrating a decrease in Class M2, and an increase in Class M1[7]. Gardner, who selected pottery from the large scale excavations between 1935 and 1940, included general descriptions of pottery vessels in his grave inventory.

The discovery and erroneous interpretations of many stone-walled Iron Age sites such as Zimbabwe during the second half of the nineteenth century[8] was followed by archaeological investigations during the first decades of the twentieth century[9]. Contradicting the earlier interpretations of the Zimbabwe ruins, Randall-McIver in 1905 identified the pottery from lower levels at the Zimbabwe Ruins as similar to that of the modern Makalanga people living in the area[10]. Although Randall-McIver recognised the cultural significance of this pottery, his descriptions consisted of brief references to the nature and quality of pottery decorations, the colour and quality of surface finishes, and the texture and structure of the clay.

An important development in southern African Iron Age pottery studies at the time was the descriptions and classification of pottery relating to stratified contexts by Caton-Thompson. Since she attempted to provide comprehensive typological descriptions and analyses of the pottery from the Zimbabwe ruins and other stone-walled sites, her classification of the material into different classes based on shape, colour, quality of surface finish, decoration techniques and her notes on the frequency of classes within stratified contexts[11] created some understanding of the cultural attributes, stratified chronologies and ethnic relationships of pottery collections. Although she did not associate the pottery with specific cultures, she noted the similarities between some of the Iron Age pottery with modern indigenous pottery[12]. She emphasized the necessity for anthropological research to supplement archaeological research on the ancestral settlement sites of the indigenous people[13].

Following the discovery of the Greefswald sites during 1932 and 1933, a large quantity of pottery was recovered from middens, living floor deposits and graves during the early excavations on K2 and Mapungubwe. The excavation techniques used during the 1930's to uncover the cultural remains on these sites were totally unsuited for the detailed and accurate collection and analysis of site pottery collections within a stratigraphic framework. According to Inskeep[14], a reliable classification of the Greefswald pottery was difficult due to a lack of detailed stratigraphic data. Fagan also emphasized the need for detailed research on the stratified contexts of the pottery on K2 and Mapungubwe[15].

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Furthermore, the selective collection and general description of pottery specimens as well as the lack of clearly defined pottery classification goals, criteria and appropriate classification techniques resulted in vague descriptions of general classes as well as unfounded assumptions on the ethnic relationships of some unclear pottery types or classes.

The pottery which had been collected from Mapungubwe and K2 during 1934 and 1935 was described by Schofield[16]. The pottery attributes used by Schofield to provide general descriptions of pottery specimens were the profile shapes of vessels and vessel rims, the general nature and quality of decorations as well as the position of decorations on the vessels, decoration techniques, the quality of the surface finish, the shapes and positions of added features such as lugs, knobs, perforations and spouts on vessels, the sizes of vessels and the texture of the clay. These basic descriptions of individual specimens from the various excavations enabled Schofield to distinguish three general classes of pottery from the Greefswald sites[17]. These were described by him as the fine Class M1 ware, of which the best examples are beautifully decorated with a burnished, black surface; the coarser Class M2 ware; and the Class M3 ware, which were not of local manufacture.

Schofield realized that pottery in the lower levels on Mapungubwe Hill was somehow different from that in the upper levels. A general frequency analysis of pottery presumably excavated by Gardner on Mapungubwe Hill was summarized by Schofield as follows[18]: 'At Mapungubwe, Class R2 pottery [or, as Schofield called it, M1] was found in relatively enormous quantities .... Thus, for the first foot of the excavation, 91,5% of the pottery found belonged to Class R2, 4,8% belonged to this second type (provisionally called Class M2), and 3,7% was indefinite; but in the seventh foot the proportions were respectively 33,7%, 51,7% and 14,6%.' This conclusion clearly indicated that Schofield's M2 pottery series, which was also the typical pottery at K2, had also initially been the dominant pottery style at Mapungubwe, where it was later mostly replaced by Schofield's M1 pottery in later occupation levels. This interpretation gained some significance when it was linked with Schofield's assumption that the existing language groups of the indigenous population form a framework into which the pottery techniques can be placed, that persistent decorative motifs can be traced through the products of associated people, and that divergences or resemblances in pottery techniques indicate divergences or resemblances between makers of such pottery[19].

According to Schofield, similarities existed between the M2 pottery from K2 and Caton-Thompson's Class A pottery at Zimbabwe, and pottery from the Natal coast[20]. He recognized similarities between the M2 pottery and pottery from Serowe in Botswana, which possibly belonged to the Mangwato tribe, as well as similarities between the K2 pottery and pottery at Buispoort near Zeerust, which was related to the Hurutshe. Consequently, he associated the Class M2 pottery of K2 and Mapungubwe with Sotho-speaking people[21].

Schofield also mentioned similarities between his Class M1 pottery from Mapungubwe and Caton-Thompson's Class B2 pottery from the second settlement phase at Zimbabwe, noting attributes of this pottery which he associated with the Shona-speaking people[22].

Gardner, who was the second researcher to describe the Greefswald pottery, neither attempted a systematic descriptive or comparative study of the pottery with stratigraphic or cultural context, nor accepted Schofield's interpretations of the ethnic relationships of the Greefswald pottery[23]. Gardner, however, appeared to have made some personal observations on which he based his conclusions that a sequence of different ethnic population groups had settled on K2 and Mapungubwe. He interpreted the ethnic identity of the original inhabitants of K2 to be that of a Hottentot community, eventually replaced by a Nguni-speaking population who took over the pottery from their Hottentot predecessors[24]. Gardner's claims were questioned

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by Walton[25] and Fagan[26]. According to Fagan, Gardner's assumption that the Nguni-speakers eventually replaced the Hottentot inhabitants of K2 cannot be supported due to a lack of sufficient material evidence[27].

The succession of Hottentot, Sotho, Venda and once again Hottentot cultures which Gardner proposed to have been the cultural sequence on Mapungubwe[28] was doubted by Fagan[29]. An alternative interpretation by Fagan[30] was based on Schofield's interpretation of the pottery sequence on Mapungubwe Hill. He consequently stated that Mapungubwe Hill was occupied by a single community whose culture gradually diversified and improved as the influence of the manufacturers of the M1 pottery class became stronger.

Summers accepted the possibility that changes took place in the pottery and the general cultural assemblage, but he stated frankly that the unsatisfactory descriptions by Gardner made re-examination of the evidence and new excavations necessary[31]. Inskeep likewise emphasized the need to re-investigate the remaining site deposits in order to acquire information on the respective ceramic traditions of K2 and Mapungubwe and their relationship[32]. Fagan also stressed the need to clarify the relationship between the last inhabitants on K2 and the earliest inhabitants on Mapungubwe Hill[33].

From the termination of the excavations on Greefswald in 1939, no research on the Greefswald materials was undertaken until after 1970. In the meantime, considerable developments north of the Limpopo River in the former Rhodesia were beneficial to the interpretation of the Greefswald material. The continued discovery of archaeological sites in this area, and the establishment of an archaeological survey into which the work done by Caton-Thompson, Schofield and Robinson was assimilated, resulted in the identification of two cultural complexes, namely the Zimbabwe culture complex, and the Leopard's Kopje complex in the southwestern part of what was then known as Rhodesia. The use of the concept 'Iron Age' was also initiated by Summers so as to describe more effectively the lifestyle of the iron producing communities who also practised a subsistence economy based on mixed farming[34].

Consequently, the tendency to associate the Greefswald sites with historically known ethnic groups, such as the Hottentot, Sotho and Nguni-speaking people, to some extent made way for an archaeological approach which regarded the sites as Iron Age settlements which were then classified as a specific part of a larger Iron Age industrial complex.

The identification of the so-called Leopard's Kopje Iron Age Culture by Robinson led to the first description of Leopard's Kopje pottery by Robinson at the eponymous site, or Thabazingwe, close to the Khami ruins near Bulawayo[35]. The pottery was named after the site Leopard's Kopje[36]. Robinson was convinced that there was a relationship between Leopard's Kopje, K2, Mapungubwe and other similar sites[37].

As time passed, more Leopard's Kopje culture sites were discovered, which encouraged Robinson to distinguish three phases in a Leopard's Kopje sequence, namely Phase I or Zhizo, Phase II or Mambo, and Phase III or Woolandale[38]. Robinson based this classification on the typological characteristics of buildings and general kraal plan, pottery, glass beads, and known distribution[39]. He regarded the sequence of Iron Age Cultures as a continuity of evolutionary phases within a single complex, which had been influenced from outside by other cultures[40]. Robinson referred to beaker-shaped vessels in the Leopard's Kopje pottery which he saw as similar to the beaker-shaped vessels at K2[41]. He also regarded the Leopard's Kopje pottery as related to the later, so-called M1 pottery at Mapungubwe, although typological differences could be noted. There were also similarities with the Class 3 pottery of Zimbabwe[42].

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Robinson concentrated on accurate stratigraphic descriptions of sites as well as qualitative descriptions of pottery from these stratified contexts. His descriptions included such criteria as vessel shapes, rim shapes, the shapes as well as positions and techniques of decorations on the vessels, the texture and structure of the clay, colour and quality of the surface finish, the quality of the baking process, and the thickness of the vessel walls[43].

Robinson mentioned some attributes which occurred more often than others, although he did not attempt to make use of quantitative or frequency analysis.

Summers, who brought into use the term 'Iron Age'[44], based a reconstruction of the Rhodesian Iron Age on the research results of Robinson and other researchers. He consequently also referred to the pottery classes of the Greefswald sites, which, according to him, also displayed local variations. He pointed out that on many sites the M2 ware was associated with the Mapungubwe M1 ware[45], and finally identified K2 as a Leopard's Kopje Phase II or 'Mambo Hill' phase site[46].

Although Summers initially regarded Mapungubwe as related to Zimbabwe Period 3[47], he later concluded that the 'Mambo' or second Leopard's Kopje phase together with the Zimbabwe middle phase developed into the Woolandale or Leopard's Kopje III phase, which in turn, combined with an unknown influence, developed into the Mapungubwe variation of the Leopard's Kopje complex[48].

Towards 1970, significant progress had been made with Iron Age research, but two main problems which hampered research progress were the total lack of fieldwork on Greefswald and original pottery studies since the 1930's, and the escalating bush war in Rhodesia. Developments were, nevertheless, brought about by Huffman, who was appointed as the senior official of National Museums and Monuments in Rhodesia. He reinterpreted and expanded the existing grouping of Iron Age cultures while pointing out some discrepancies with respect to the existing Leopard's Kopje sequence and radiocarbon dates. Referring to vaguenesses as a result of superficial research and insufficient type sites, Huffman emphasized the need for clear descriptions of archaeological material and sequences within stratigraphic context, together with radiocarbon dating, an identification of the continuity of pottery attributes through time, and the utilization of as many pottery attributes as possible aimed at the identification of a tradition[49].

Huffman regarded Robinson's Phase 2 or Mambo phase of the Leopard's Kopje complex as the first phase, which he called Phase A. According to him, Phase A consisted of a northern or Mambo stage and a southern or Bambandyanalo stage. Furthermore, Huffman considered Robinson's third Leopard's Kopje phase or Woolandale phase, as the second phase, or Phase B, of the Leopard's Kopje sequence. He divided the Leopard's Kopje Phase B into a northern or Woolandale variation, and a southern or Mapungubwe variation, basing his arrangement of the Leopard's Kopje sequence on the stratigraphy, cultural contents and radiocarbon dates of several Leopard's Kopje related sites, especially Leopard's Kopje itself and the site Blue Jay/Bunting in Bulawayo. His interpretations were to a large extent based on the identification of pottery classes within stratigraphic context[50]. Huffman also associated the Leopard's Kopje complex with the 19th Century Kalanga, basing his conclusions in this respect on specific pottery characteristics.

The criteria used by Huffman during his analysis of the pottery were shape, size, geometric form and the placement of decorations, and the quality of surface finish. Basing his basic classification on the shape of vessels, he further classified the specimens according to size and the combinations of decorations. He finally determined the various pottery classes from clusters

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of decorations within the identified shape and size groupings, based on a qualitative description of attributes and a quantitative identification of prominent combinations of attributes within stratigraphic context[51]. Assuming the concept that race, language and culture were dependent variables during the Iron Age and, consequently, that continuity in race and language over time is also evidenced by a continuity in material culture, Huffman proceeded to trace the origin of the Leopard's Kopje complex in the eastern Transvaal Early Iron Age by means of an interpretation of pottery attributes[52]. At Tautswemogala in eastern Botswana, an independent southern stage of the Leopard's Kopje tradition was identified by Lepionka. He identified the Tautswe pottery as most closely related to the Bambandyanalo (K2) material, but indicated differences with regard to aspects of decoration[53].

The significance of the Greefswald sites as type sites within the broad Iron Age complex also involved the typological characteristics of the Greefswald pottery. Towards 1980, the pottery of the Greefswald sites was considered to be of great importance for the reconstruction of the Iron Age culture and sequence[54]. The problems and deficiencies which still existed since the 1930's with regard to the available information on the Greefswald material contributed to the need for a detailed study of a fully representative pottery collection from the stratified deposits of the main Greefswald sites. An investigation of a representative collection of the pottery obtained from detailed excavations of the stratified deposits of Mapungubwe and K2 during the 1970's was therefore an important part of Phase Three of the Greefswald Archaeological Project[55]. The research goals of Phase Three with regard to the pottery were to describe the pottery as artefacts of the Greefswald people, to describe the pottery within stratigraphic context in such a way that it could support the cultural identification and chronology of the sites and the relationship of the Greefswald sites with the overall Iron Age complex of the period and the area[56].

During Phase Three of the project, three main groups of pottery vessels were derived from the descriptions and classification of the excavated collection. The first main group of vessels, identified as the K2 vessel series[57], is broadly similar to the pottery previously described by Schofield as Class M2[58]. The second main group of vessels, identified as the Mapungubwe vessel series during Phase Three of the project[59], is similar to the pottery previously described by Schofield as Class M1[60]. The third group, described as non-typical variations[61], include some pottery fragments similar to the pottery described by Schofield as Class M3[62].

The criteria used to determine the characteristic features of the pottery were vessel profile shape[63] with reference to presence or absence of vessel necks and the definition of vessel shapes according to geometric forms, and the ratio of height and width dimensions[64]; rim shape[65]; surface colour[66]; quality of surface finish[67]; design, technique and quality of decorations[68]; position of decorations on the vessels[69]; attachments such as handles and spouts[70]; and the position of the attachments on the vessels[71]. The frequencies of pot shapes in the various main layers were determined and the clustering of other attributes with vessel shapes provided the basis for defining the vessel types[72].

During Phase Three of the Greefswald Archaeological Project, the reconstruction of the ceramic vessel sequence of K2 and Mapungubwe was based on an analysis of the frequencies of attributes and pottery types within the stratigraphic context of the excavations of this phase. To enable a systematic comparison of the pottery from the different excavations and sites, the layers in these excavations on each site were grouped together into main layers. The deposits of K2 were grouped together into three main layers, and those of Mapungubwe Hill and the Southern Terrace into four main layers[73] (cf. Tables 4.1 and 4.2). The occurrence of pottery attributes in the various main layers and clustering of attributes were systematically analysed in frequency tables and diagrams[74] processed and printed by the mainframe

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computer of the University of Pretoria. The clustering patterns of the pottery attributes were summarised as attribute combinations of the various main layers and sites in a comparative table[75] (cf. Table 4.3) and interpreted as types[76]. The pottery sequence data within stratigraphic context was finally summarised as series percentages in main stratigraphic units (cf. Diagram 4.1). The series frequencies were also compared with the frequency data of Schofield[77] (cf. Diagram 4.2).

The ceramic vessel series from K2 and Mapungubwe

Basic vessel types which were found to be strongly representative of the K2 pottery series[78] are roughly made, more or less spherical pots with short necks[79] (cf. Figures 4.8 to 4.10); neckless spherical pots with narrow openings, often with spouts on or below the rim[80] (cf. Figures 4.12 and 4.13); half-spherical, deep, open bowls[81] (cf. Figure 4.11); beaker-shaped bowls, often with knobs or bosses on their cylindrical sides[82] (cf. Figure 4.14); and beakers, frequently with perforated rims or perforated knobs on their cylindrical sides[83] (cf. Figures 4.15 to 4.18).

Vessel types and variations of types which were found to belong to the Mapungubwe pottery series are bellied pots with cylindrical necks[84] (cf. Figures 4.21 to 4.23); shallow, shouldered, dish shaped bowls[85] (cf. Figures 4.25, 4.27); semi-shouldered, shallow, dish shaped bowls with rims curved to the outside[86] (cf. Figure 4.26); shallow, dish shaped bowls with neither a shoulder nor a rim curving inwards or outwards[87]; shallow, dish shaped bowls with no shoulder but with the rim curving inwards[88]; very shallow bowls which may be some kind of lid[89]; open, semi-deep bowls which are not shouldered[90]; deep bowls with a rim curving slightly to the inside[91]; and deep bowls with a rim curving to the inside to form a narrow opening[92] (cf. Figure 4.28).

Pottery which is typologically different from the K2 and Mapungubwe type series may be described as non-typical variations of the K2 and Mapungubwe series; pottery made by earlier inhabitants, such as the Early Iron Age potsherds from the bottom layers at Mapungubwe[93]; and intrusive ware from other Iron Age cultures[94] and the terracotta bowl from Mapungubwe Hill[95].

The ceramic vessel sequence of Greefswald

The Early Iron Age pottery fragments from the bottom layers on Mapungubwe Hill and the Southern Terrace belong to a settlement period which is recorded as settlement Phase One on Mapungubwe Hill and the Southern Terrace.

The pottery in all three main layers at K2 and Main Layer 4 on Mapungubwe and the Southern Terrace belong to the K2 Series (cf. Table 4.3). These main layers are presented as Main Stratigraphic Unit 4 and are radiocarbon dated to the period ca 1030 AD to ca 1220 AD (cf. Diagram 4.1).

The pottery series in Main Layer 3 on Mapungubwe and the Southern Terrace consist mostly of the K2 Series and small numbers of the Mapungubwe Series (cf. Table 4.3), indicating the appearence of pottery belonging to the Mapungubwe Series after ca 1220 AD in deposits represented as Main Stratigraphic Unit 3 (cf. Diagram 4.1). This is similar to the percentages presented by Schofield (cf. Diagram 4.2).

The pottery series in Main Layer 2 on Mapungubwe and the Southern Terrace consist mostly of the Mapungubwe Series and small numbers of the K2 Series (cf. Table 4.3), indicating

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the substantial increase of pottery belonging to the Mapungubwe Series and the decrease of K2 pottery in deposits represented as Main Stratigraphic Unit 2 (cf. Diagram 4.1).

The pottery series in Main Layer 1 on Mapungubwe and the Southern Terrace is similar to that of Main Layer 1, consisting mostly of the Mapungubwe Series and small numbers of the K2 Series (cf. Table 4.3; Diagram 4.1). This main layer is presented as Main Stratigraphic Unit 1 and is radiocarbon dated to the period ca 1250 AD to ca 1290 AD (cf. Diagram 4.1). This is similar to the percentages presented by Schofield (cf. Diagram 4.2).

The pottery figurines and other objects

A substantial number of figurines and other objects made of baked clay were found on Mapungubwe and K2. The first report on these was made by Jones, who briefly referred to figurines of a giraffe and cattle, spindle whorls, a spoon and other unidentified objects found during 1934[96]. In 1963, Gardner referred to a number of pottery figurines of humans, animals, bead moulds and other objects in a brief discussion[97], inventory lists[98] and a few illustrations[99]. The complete pottery bead mould from K2 and the probable way according to which the so-called garden roller glass beads had been made in bead moulds were described by Van Riet Lowe[100]. In her MA thesis[101] and in the Eloff report of 1979[102], Voigt presented detailed descriptions of animal figurines which she identified as cattle, sheep, a goat, a springhare and a giraffe. These descriptions by Voigt were also published[103]. Only the animal figurines from Mapungubwe and K2 have so far been thoroughly studied.

In his overview of figurines from Zimbabwe, Matenga identified and discussed several groups of figurines, including human figurines with and without arms and legs, domestic animals, wild animals, unidentified animals and fungi- or mushroom-shaped objects[104]. In his appraisal, he concluded that figurines had been associated with the iron-using communities since about 200 AD till the eighteenth or nineteenth century. He concluded that outside Zimbabwe, human figurines had been used in group initiation, but that the symbolic meaning of figurines inside Zimbabwe remains unexplained.

General observations with regard to the baked clay figurines and other pottery objects from Mapungubwe and K2 show several specific tendencies which have not yet been studied. Most of these objects were found during the large scale excavations of the 1930's.

A substantial number of human figurines have been found, most of which are broken and most of which were scattered in the deposits of K2. These human figurines appear mostly to be elongated in shape, with stumps for heads, arms and legs, and some of which are marked with rows of punctates. Complete and broken figurines of cattle and small stock are also commonly found at K2. A specific tendency is the presence of substantial numbers of broken pottery bead-moulds which have so far been found at K2, in addition to the only complete mould ever found, as well as the single specimen with a tiny fragment of glass still attached to its interior surface.

At Mapungubwe, although human and cattle figurines have also been found, a more prominent feature is the number of small conical figurines and spindle whorls found since the 1930's.

Some of these human figurines are particularly interesting, especially those shaped without individual human features such as legs, arms or facial features, and shaped like something between a human and a conical figurine. Other pottery objects of interest from Mapungubwe and K2 are the funnel, spoon, two whistles, beads, discs and a small number of unidentified objects.

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Imported ceramic ware

At present, it is unknown to what extent ceramic ware made elsewhere in southern Africa was transported to Mapungubwe and K2. Some of the pottery specimens with incised herringbone decorations found on Mapungubwe[105] were probably made elsewhere. The origin of the terracotta bowl found in Grave 11 on Mapungubwe[106] (cf. Figure 4.24) is still unknown.

Sherds of Chinese ceramic ware, found on Mapungubwe Hill in 1934, were identified at the British Museum in London as Celadon ware from the Song Dynasty in China[107]. A similar sherd was found by a student at the Main Entrance on the Southern Terrace in 1991, and there are two similar sherds in the old Greefswald collection at the University of Pretoria. During a recent study at the University, these Celadon ware sherds were identified as fragments from a small, spherical type of vessel produced in China during the Song Dynasty between 960 AD and 1279 AD[108] (cf. Figure 4.50).

Metal artefacts and slag

Metallurgical materials and features

One of the main reasons for the popularity and value of the Greefswald collection is the gold artefacts found in the graves on Mapungubwe Hill in the 1930's. The best known of these are the rhinoceros, sceptre and bowl which were made of gold foil and small gold tacks. The metallurgical material from these sites comprise artefacts made of gold, copper and iron as well as small quantities of slag and single pieces of ore found scattered on the site.

Although traces of slag and ore are present on the site, remains of significant metal production activity areas have as yet not been found. In the bottom layer in Excavaton Mk 1 on Mapungubwe Hill, a small hollow containing burnt sandy soil, charcoal and traces of copper globules indicates some form of copper processing[109]. Traces of metal slag have been more frequently observed on the southern slope of K2, indicating that metal working activities had once been practised here.

The metallurgical objects from Greefswald were studied on at least seven occasions. During 1934, some gold was identified by experts of the Royal Mint soon after discovery of the site. Notes on the gold objects and other metallurgical material by M. Weber, R. Pearson and G.H. Stanley were published in 1963[110]. Microscopic observations by a metallurgist of the University of Pretoria were included in the report by Eloff in 1979[111]. Visual and microscopic observations by A. Oddy were published in 1983 and 1984[112]. At present, metallurgical material is being studied by D. Miller of the Department of Archaeology at the University of Cape Town.

Gold artefacts

With the exception of a few single gold beads and fragments of wire or strips wound into a helix, all the gold objects were found in a few graves on Mapungubwe Hill from 1933 to 1935. Five categories of gold objects were classified, namely foil, wire and strips wound into a helix shape, beads, tacks or pins as well as a few globules and small disks. The manufacture and use of the foil was described by A. Oddy[113].

The foil was made by hammering the gold into thin sheets on a stone anvil, as is suggested by the textured inner surface of the foil. It was then folded and creased around the wooden carvings and tacked into position around the edges (cf. Figures 4.51 to 4.54).

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The tacks or pins (cf. Figures 4.58 and 4.59) were made by hammering the gold into tapering shanks and small heads, or cutting them from sheet gold. The shanks were 1 mm to 0,5 mm thick and the overall length of the tacks varied from 3,5 to 5 mm[114].

Gold sheets 0,2 mm to 0,3 mm thick were cut into flat strips of 1 mm to 1,5 mm wide and coiled into a tube-shaped helix (cf. Figures 4.55 and 4.56). The ends of the strips were joined by interlocking the free ends in several turns. The wire and strips of foil were wound around fibre to produce bangles or bracelets[115]. In some cases, strips of gold foil between 6 mm and 9 mm wide were rolled into small cylinders of 6,1 mm long and 2,2 mm wide to 8,3 mm long and 3,3 mm wide (cf. Figure 4.57), and were probably used in a way similar to the beads.

Different types of gold beads were produced. A large group of beads were made by casting them individually (cf. Figure 4.60), including the holes through their centres and with a diameter ranging from 1,5 by 0,7 mm to 4,3 by 2,0 mm. Some of these beads are decorated by grooves in the surface (cf. Figure 4.61). Another type of bead was made by bending small pieces of gold wire or rods into loops (cf. Figure 4.62). These vary, in general, in size from 1,2 mm by 2,1 mm to 1,6 mm by 3,9 mm[116].

The collection of gold objects from Mapungubwe includes a few globules (cf. Figure 4.63) which vary in some cases in diameter from 2 mm to 7 mm; a few flat disks which must originally have been globules which were flattened by hammering (cf. Figure 4.64) and which vary from 0,9 mm thick by 5,0 mm wide, to 1,2 mm thick and 6,1 mm. wide; and other small discs which must have been produced by casting or some other technique (cf. Figure 4.65) and which varied in some cases in diameter from 0,3 mm thick and 3,2 mm wide to 0,3 mm thick and 3,3 mm wide.

Copper artefacts

In the report published by Fouché in 1937, copper wire is briefly referred to[117], and a single copper artefact was identified as a short, cast copper rod[118]. Gardner mentioned that six skeletons found on K2 were associated with copper and that copper objects were found in isolation in the deposits, including a ring. He listed rings and bangles of copper and bangles made of wire[119].

In the Eloff report, Pienaar[120] observed that one copper bangle was hammered when heated and another when it was cold. Some copper wire was hammered when heated. Some wire was drawn when it was cold. Close inspection of some copper objects reveals that there are strips of copper or flat wire similar to the gold specimens present in the collection from the Greefswald sites. The presence of copper globules, rods and strips of copper wire in the shape of wound helixes, rings and bangles indicates the every day use of copper as trinkets by at least some of the community members.

Iron artefacts

Fouché briefly mentioned iron arrowheads, spear blades and coiled wire from Mapungubwe, apparently manufactured locally[121]. Gardner refers to ten skeletons associated with iron artefacts on K2, a few spear blades from K2 which he associated with later speakers of some African language, an arrow head from K2 and a substantial number of iron weapons and tools from Mapungubwe[122]. He listed a number of corroded iron objects including rods, arrow heads, spear blades, hoes, chisels, solid rings, an awl, spikes and wound or coiled wire bangles[123].

In the Eloff report, Becker commented on eleven samples of iron submitted for microscopic observation[124]. These varied from high to low carbon steel, some of which had been forged at low temperatures.

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Bronze and brass artefacts

A handle of some kind was identified as bronze by Fouché[125] and a bronze sheet was described by Stanley[126]. Pienaar refers to a brass handle[127].

A number of metal samples from the Greefswald sites are currently being studied by D. Miller of the Department of Archaeology at the University of Cape Town.

Glass beads

Substantial numbers of glass beads were found in the deposits of the Greefswald Iron Age sites and have been studied on at least seven occasions.

Beck first classified the beads from Mapungubwe according to colour, adding additional data on their shape, size, chemical properties and structure[128]. This classification was based on beads found in the earliest excavations during 1934 and is included in a discussion of the glass beads of a number of other sites.

Following the extensive excavations of 1935 to 1940, Van Riet Lowe published his own classificaton of the glass beads from Greefswald[129]. According to Gardner, Van Riet Lowe concentrated his spectroscopic analysis on the beads from K2 while neglecting those from Mapungubwe. Gardner provided his own classificaton of the beads, which he defined as Class M1 or early Mapungubwe, M2 or middle Mapungubwe and M3 or late Mapungubwe[130]. Gardner based his classification on direct visual observations of the colour, shape and size. He subdivided his three main classes into a series of sub-classes. Van Riet Lowe regarded Egypt as the origin for the Greefswald beads, but Gardner agreed with Beck that the beads had been made in India[131].

During the excavations of 1971 to 1973, field work concentrated on the recovery of a representative collection of glass beads within the stratigraphic context of the main sites of K2 and Mapungubwe. These were sorted into groups according to colour and size[132]. In this way, two main groups of beads were identified, based on the classifications of Van Riet Lowe[133] and Beck[134].

The one main group consisted of small trade beads, subdivided into eight types, namely Type 1 (slightly transparent light blue[135]); Type 2 (turquoise[136]); Type 3 (sea green[137]); Type 4 (leaf green[138]); Type 5 (yellow to orange[139]); Type 6 (Indian red or red-brown[140]); Type 7 (dark blue[141]) and Type 8 (black[142]).

Samples of the glass beads excavated during the 1970's were classified by Davison[143], who identified many of the beads by their visual resemblance to beads previously known to belong to the Trade Wind Bead Chemical Group and the M1 Chemical Group. She confirmed the visual identifications by x-ray fluorescence and atomic absorption analysis and concluded that the trade beads from the Greefswald sites had all been produced using soda-lime glasses. These beads were grouped into the Mapungubwe Chemical Group I, and two Uranium-bearing bead groups identified as the M1 Chemical Group and the Trade Wind Bead Chemical Group. According to Davison, oblong beads from Mapungubwe began to appear in the later levels in the deposits at Mapungubwe, and these were identified as a type belonging to the Mapungubwe Chemical Group I. She concluded that the origins of these beads were still unknown.

Current research by Sharma Saitowitz[144] and her colleagues has, however, solved problems with regard to the characteristics and the origin of the trade glass beads (cf. Appendix 8.7).

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They used criteria such as the method of manufacture, appearance and gloss finish, and techniques such as visual observation by microscope, and standardised colour identification which includes colour photography. In addition, they used various physical and chemical methods to determine the chemical properties of the beads, including an analysis of rare earth elements (cf. Appendix 8.7). They concluded that a particular type of glass used to make beads in Foustat (old Cairo) in Egypt is the same as the glass used to make the beads found on the southern African sites in the Limpopo River valley and elsewhere.

Recent research on the large Garden Roller Beads by Marilee Wood revealed that some of these beads appear to have been made of whole and broken trade glass beads (cf. Appendix 8.8.). She established that in some cases the trade beads were not completely melted during the manufacture of the Garden Roller Beads and their deformed remains could be visually identified within the Garden Roller Beads. She also observed large, crude beads which appear to have been made partially of Indian red glass which must have been wound onto a mandrel or wire.

Stone artefacts

Stone flakes identified as Middle Stone Age were found on Mapungubwe Hill and stone artefacts belonging to the Wilton industry from Greefswald were examined by Van Riet Lowe during the 1930's[145]. Jones briefly mentions that grinding and pounding stones, hammer stones and stones used for burnishing as well as a few ear ornaments of calcite were found during the 1934 excavations[146]. Gardner reported stone tools as well as grooved stones, hammerstones and rubbing stones from K2[147] and a flat, disk-shaped stone with a handle[148].

In the Eloff report, a variety of stone utensils or artefacts are described[149]. Mortar stones with a single mortar hole in the top of each individual stone are common on Mapungubwe Hill and the Southern Terrace. These were presumably used for the same purpose as the numerous mortar holes on the rock surface of Mapungugwe Hill and a few mortar holes on rocks at K2. At K2, a single rock with 10 mortar holes was observed. A single rock with a longitudinal grinding or rubbing hollow was found on K2. Flat rocks and rock surfaces with rows of shallow hollows were identified as 'isifuba' stones or game boards.

Some rough stones with a flat upper surface and a small hole of 10 mm to 20 mm in diameter in each stone were observed. They are believed to be stones on which hard objects such as marula pips or chunks of floor gravel had been placed to be cracked with hammer stones. Numerous hammer stones were observed and described as round to rectangular with flat surfaces worn smooth by rubbing, often with a pock-marked small hollow in the middle of each flat surface. These hammer stones are usually dolerite rocks, which must have been collected on the dolerite outcrops, and they have been interpreted as hammer stones used to compact mudstone gravel for floors or used to crack marula pips and perhaps to forge metal implements. Some sandstone rocks with irregular cut marks might have been used to sharpen or grind metal tools or weapons. A few rock crystals might have been used as punches for some as yet unknown purpose. The small, round pebbles sometimes found have been interpreted as possible game stones used on the 'isifuba' stones or game boards.

Artefacts of ivory, bone and shell

A variety of artefacts made of ivory, bone and shell were described on three occasions, namely by Jones[150], Gardner[151] and Voigt[152].

Jones briefly refers to pins, awls and a tube made of bone, illustrated with a single photograph[153]. All these were apparently found at Mapungubwe. Beck briefly describes beads made of ostrich egg shell and *Achatina*, as well as the use of cowrie shells[154].

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The pointed bone artefacts previously identified as awls were later redefined by Gardner as arrow heads from K2. Gardner also briefly describes bone handles, ivory armlets presumably used for wrist protection against bowstrings, bone arrow heads and linkshafts which were specifically numerous in the upper layers on Mapungubwe Hill, as well as armlets, bracelets and rings of bone and ivory and rough bone spoons[155]. He discusses the bone arrow heads and linkshafts from the final settlement phase on Mapungubwe, and he associates them with Hottentot people[156].

For the purpose of the Eloff report, Voigt formally defined the artefacts made of bone, ivory and shell and incorporated the evidence in her M.A. thesis and a museum publication[157]. Voigt classified all these artefacts from Greefswald into twenty types or classes, including various shapes of polished arrow heads and arrow linkshafts, a bone tube, decorated pins, polished bone splinters and flakes, ivory armbands, and utilized molluscs including terrestrial fresh water and marine species. According to Voigt, a unique aspect of the Greefswald sites is the prominent signs of the significant manufacture as well as use of ivory objects, particularly at K2.

In the excavations during the 1970's, several flat bone needles were recorded in the deposits at K2, as well as a significant number of arrow linkshafts and arrow heads in the upper levels at Mapungubwe, especially in Excavation Mk 1 on Mapungubwe Hill[158]. Some of the arrow heads are shaped with flattened front ends with traces of iron tips inserted into the flat front end of the bone arrow heads. Numerous disc-shaped beads made of ostrich egg shell and *Achatina* shells as well as several bone and ivory beads are reported by Gardner[159] and Eloff[160].

4.3 Animal remains

During the first excavations in 1933 and 1934, bone fragments were observed and they are mentioned by Fouché[161] and Jones[162] in their report, but no animal skeletal material was collected[163] and studied. During the large-scale excavations from 1935 to 1940, Gardner observed animal bone material in the site deposits, but only briefly recorded and discussed some features which he called 'beast burials'[164] with reference to pottery associated with these features but no research on the animal remains was done. Gardner briefly referred to comments by Brink and Curson that the inhabitants of the Greefswald sites must have possessed cattle of the Afrikander and Sanga types, and that no proof for other domestic animal types had as yet been found[165].

The need for a substantial research collection of animal bone material and related stratigraphic evidence led to the systematic excavation and collection of the animal bone material since 1971, and a substantial archaeo-zoological study of this faunal material by Voigt[166] (cf. Appendices 8.3, 8.4). Her research results were later published[167] and discussed in a wider context[168].

For the puposes of Phase Three of the Greefswald Archaeological Project, the archaeological study of the faunal remains from Greefswald was focused firstly on a general description of the faunal remains from Excavations Ts 1, Ts 2, Ts 3, Ts 4 and Ts 6 on K2; Excavation K8 and selected layers in Excavations F4 and H5 on the Southern Terrace; and Excavation Mk 1 on Mapungubwe Hill. Further research objectives were to determine the economy and diet of the inhabitants of the sites, domestic animal species and animal husbandry, crafts and trade, the degree of horizontal and vertical variation of these aspects within the archaeological complex, and evidence of damage to bone material by man and animals and the state of bone preservation on the sites.

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The fieldwork concentrated on the maximum retrieval of all archaeological materials within a detailed stratigraphic context, including faunal material. The faunal material was first sorted into identifiable bone and waste bone. Identifiable bone was then classified into bovid teeth, bovid post-cranial material and non-bovid material. The bone material was then further divided into body parts and bovid remains were classified into size classes. Minimum numbers of individual animals were calculated, age groups determined and kinds of damage to bones analyzed. The faunal collection at the Transvaal Museum was used as a comparative collection. Based on the evidence obtained in this way, interpretations were made with regard to domestic animal species, animal husbandry and the diet of the site inhabitants.

The detailed archaeo-zoological evidence from K2 and Mapungubwe shows several tendencies with regard to the use of animals by the communities of K2 and Mapungubwe (cf. Appendices 8.3 and 8.4). These people were farmers who depended on herds of cattle and flocks of sheep and goats for most of the meat in their diet. Slightly more small stock than cattle was slaughtered, including a wide range of ages in both groups. According to the faunal evidence, the farming communities possessed indigenous breeds of cattle. The people supplemented their diet by hunting, snaring and collecting wild species. Fishing made almost no contribution to their diet.

4.4 Plant remains

Plant remains were reported on three occasions. Early identifications were made by Pole-Evans and Gardner. Pole-Evans identified burned thatch and some seeds as *Sclerocarya caffra* (manila), *Pseudocadia zambesiaca* ('peanuts'), *Grevia sp.* ('kruisbessie'), *Citrullus sp.* ('pig-melon'), *Vigna sinensis* ('cow-peas') and *Andropogon sorghum* (sorghum)[169]. Gardner mentions the presence of charred wood and lists millet in his inventories[170].

Samples of charred seeds were found during the excavations from 1971 to 1976 in ash and burnt hut remains on K2 and Mapungubwe and were handed over to staff members of the Research Institute of Botany in Pretoria for identification. Due to the charred condition of the seeds, identification was difficult in several cases. The list of identified plants includes wild species as well as domesticated varieties[171].

The identified wild species are *Sclerocarya caffra* (manila), *Xanthocercis zambesiaca* (myala berry), *Vangueria sp.* (mispel), *Syzyguim cordatum* (water berry), *Adansonia digitata* (boabab) and *Citrullus lomatus* (tsamma). The domesticated varieties were *Vigna imguiculata* (beans), *Sorghum bicolor* (sorghum) and *Pennisetum typhides* (babala). Based on the presence of these seeds in the stratified deposits one can conclude that the wild fruit was collected by the community members in the sand veld and hills surrounding the villages and riverside bush on the banks of the Limpopo River during the summer season, and that domesticated varieties were cultivated on the sandy valley floors during the rainy season in summer.

4.5 Human remains

The remains of humans from a large number of graves on Mapungubwe and K2 have always been of particular interest. The first research was done by Galloway, who investigated eleven individuals from Mapungubwe[172] and thirty-four from K2[173]. Galloway, who used visual observation and metrical techniques, concluded that the inhabitants of Mapungubwe and K2 were indigenous 'pre-Bantu' people, and that they represented a homogeneous 'Bush-Boskop' type.

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Rightmire[174] later re-evaluated some of the human skeletal remains in South Africa. He used a multivariate analysis of groups of skeletons, which included seven of the most complete adult skulls from K2. Rightmire concluded that they were Negroid, and that previous identifications such as 'Bush-Boskop' are not supported by substantial evidence. A similar conclusion was presented by De Villiers, who identified the remains of at least six juvenile individuals, found on K2 during the 1970's, as Negroid[175].

Current research on human remains tends to focus on demography, health and diet (cf. Appendix 8.6). Following this approach, Steyn re-examined the human skeletal remains from Mapungubwe and K2[176], including those found during the previous excavations and remains found recently[177]. Results of the team project by Steyn and Henneberg[178] indicate that the rapidly growing communities living at Mapungubwe and K2 enjoyed good health, which reflects the healthy diet of a prosperous population. On the other hand, the mortality rate amongst new-borns was high, and less than half the individuals in the population survived to adulthood. This mortality rate, however, corresponds with prehistoric populations elsewhere (cf. Appendix 8.6).

4.6 Radiocarbon dates

The radiocarbon dates and an approach to research

The importance and significance of the Greefswald sites as key sites in the history of the subsistence farming communities of southern Africa is also reflected in their sequence of radiocarbon dates. Aspects of research related to age are stratigraphy and settlement chronology within an extended period of site occupation, temporal context in the sequence of the complex of settlements including smaller sites on Greefswald and a major complex such as Zimbabwe, and dating major developments or changes in settlement patterns, social structures or material aspects of culture.

The use and significance of the radiocarbon dates, especially in the case of such prominent sites as Mapungubwe and K2, are influenced by aspects of research, such as general archaeological theory, purpose and method of fieldwork and the personal approach of individual researchers. Since the early excavations in 1934, the dating of the Greefswald sites was an important research objective and was therefore an important issue through various phases of research.

An overview of the radiocarbon dating

Early dates

The first main objective of the initial research on Greefswald during 1934 was to determine the date of the occupation of Mapungubwe[179]. At that time, there was little knowledge of the Iron Age and radiocarbon dating was unknown. The perception of the age of settlements was related to ethnic identity. Fouché, who was a trained historian, concluded in the first published full report that little evidence of the age of Mapungubwe was found during the excavations of 1934[180].

Consequently, Gardner, who continued the excavations from 1935 to 1940, was instructed to determine the age of the sites at Mapungubwe and K2[181]. However, the first substantial evidence of the age of these sites became available only when the first three radiocarbon dates were received during 1958 and 1959 and were published in the second full report on the

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Greefswald sites in 1963[182]. One date was received for K2 from the United States of America in 1958, dating K2 to approximately 900 BP, interpreted by Gardner to be a date of 1055 AD for a Khoi occupation at K2. The other two dates received from the United States for Mapungubwe Hill were 570 BP and 530 BP. Gardner interpreted these dates as 1388 AD for a Sotho occupation on Mapungubwe Hill, and 1449 AD for a Venda occupation on Mapungubwe[183].

The problem with the early radiocarbon dates was fourfold:

- Gardner used the radiocarbon dates to develop a chronology of successive migrations of ethnic groups whom he believed to have settled on K2 and Mapungubwe. No substantial evidence in support of his assumed chronology was presented.
- More dates were required to support the stratigraphic and cultural sequence on the Greefswald sites.
- The two dates for Mapungubwe Hill later proved to be incorrect[184].
- More complete and elaborate stratigraphic studies and artefact typology were needed to interpret the radiocarbon dates meaningfully[185].

The dating of the stratigraphy of the main sites from 1968 to 1976

The detailed, limited excavations on the Southern Terrace during 1953 and 1954 proved the existence of richly stratified deposits and the need for elaborate stratigraphy and related studies. Excavations E2 on the Southern Terrace and TS 1969 on K2 made during 1968 to 1970, aimed at obtaining a radiocarbon sequence for each main site. The excavation method for this purpose was small scale excavations with detailed stratigraphy and material collections to support the radiocarbon sequence. From K2, four dates were obtained from Ts 1968 in the central midden area, varying from 1070 AD (Pta-304) in Layer 3, 1060 AD (Pta-305) in Layer 6, 1100 AD (Pta-306) in Layer 8b and 1020 AD (Pta-307) in Layer 11[186]. In Test Pit E2 on the Southern Terrace, the dates varied from 1150 AD (Pta-437) in Layer 5, 1130 AD (Pta-438) in Layer 7 and 1110 AD (Pta-439) in Layer 10. According to this sequence, therefore, K2 dated to a period between 1020 AD and 1070 AD, and the Southern Terrace to a slightly later period between 1110 and 1150 AD.

During the excavations from 1971 to 1973, the radiocarbon dates were also concentrated on a more complete chronology for the main sites, to establish the age relationship of the sites and site components and to support a comparative stratigraphic study of the deposits in the various site components. On K2, the dates varied from 970 AD (Pta-1214) in Layer 120 of Excavation Ts 1 to 970 AD (Pta-1215) from Layer 15 of Ts 3 and 1000 AD (Pta-1126 and Pta-1157) in Layers 15 and 24 in Ts 3. On the Southern Terrace at Mapungubwe, the dates were acquired from the test pits, namely Squares F4, H5 and K8. In Square F4, Layer 10 was dated to 930 AD (Pta-2024). Square H5 was dated to 1040 AD (Pta-2023) in Layer 6(iii) and 1360 AD (Pta-1138). Square K8 was dated to 920 AD (Pta-768) in Layer 16, 1090 AD (Pta-1156) in Layer 15, 1100 AD (Pta-766) in Layer 3, 1160 AD (Pta-752) and 1180 AD (Pta-1209) in Layer 1(iii). On Mapungubwe Hill, four dates were obtained from the excavations. A sample collected by Gardner was later dated to 1070 AD (Pta-372). Excavation MK 1 was dated to 1110 AD (Pta-1158 and Pta-1159) in Layer 11 and 1070 AD (Pta-1145) in Layer 3.

According to these dates, Iron Age settlement was established on the Southern Terrace by 920 AD and on the southern slope of Bambandyanalo at K2 by 970 AD. The central midden at K2 was dated to the period betwen 980 AD and 1100 AD. At that stage no other site components

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of K2 were dated, including the homestead areas. The central cattle kraal was assumed to be older than the overlying central midden. The initial date for the first settlement elements of K2 and the age of the presumably later peripheral settlement areas remained unknown. On the Southern Terrace, settlement areas remained unknown but settlement apparently continued until at least 1180 and possibly 1360 AD. According to two dates on Mapungubwe Hill, however, settlement on the Hill commenced by 1070 AD or 1110 AD and terminated at an uncertain date.

This chronology of radiocarbon dates was compared with the stratified sequence of layers, site features and pottery series to interpret the temporal relationships of site components as well as the main sites. These dates became a crucial part of the comprehensive research report by Eloff in 1979[187] and the interpreation of the main sites. Up to the present, the dates have been an important part of primary reference data for research and publications on the Greefswald sites.

The current dating programme

An important objective of the research programme during 1992-1996 is to have the existing dates calibrated and to make additional dates available in support of stratigraphic and settlement interpretation studies. Additional dates were obtained for the K2 and the as yet undated small sites in the proximity of the main sites. These dates are needed to establish a full settlement chronology for Greefswald and to relate these sites effectively to other site complexes, particularly Zimbabwe.

The series of calibrated dates and additional dates received in a formal report by Vogel now provide a new time-related data base for the reconstruction of the Greefswald Iron Age sequence. Consequently, all the existing dates have been calibrated and, together with the new dates, a new temporal framework of reference has been established for the time-related data and research objectives.

The calibrated age of the Greefswald sites and their stratigraphic sequence

Intensive settlement activities on the main sites K2 and Mapungubwe are now dated from at least 1030 to 1290 AD, a settlement period of 260 years or two and a half centuries. Subsequent small-scale settlement activities to the east of Mapungubwe existed from time to time until at least the eighteenth century AD. (cf. Appendix 8.9).

K2

Based on calibrated radiocarbon dates, the deposits of K2 have been dated to a period from 1033 to 1243 AD, with a single early date of 825 or 857 AD and a single late date of 1286 AD. Some of the dated deposits are on the southern slope of Bambandyanalo Hill in the eastern settlement area of K2. Here, Layer 2 in Test Trench Ts 1 was dated to 1220 AD (Pta-6064) and 1046 or 1103 or 1114 AD (Pta-1214) respectively. Layer 2 in Test Trench 2 was dated to 1033 AD (Pta-6576).

In the eastern side of the central midden, calibrated dates from Test Trench Ts 3 vary from 1052 or 1087 or 1150 AD (Pta-1215) to 1163 AD (Pta-1157) in Layer 15 and 1052 or 1087 or 1150 AD (Pta-2051) in Layer 6. In the central settlement area, on the eastern side of the central midden, Layer 4 in Excavation Ts 4 was dated to 1180 AD (Pta-6073). In the south-western deposits of the central midden and underlying strata, dates acquired from Test Pit Ts 1968 varied from 1173 AD (Pta-0307), 1243 AD (Pta-0306), 1213 AD (Pta-0305) to 1220 AD (Pta-

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0304). Further to the west, in Test Trench Ts 5, Layer 3 was dated to 1286 AD (Pta-6570), but Skeleton UP 245 in the same deposit was dated to 825 or 857 AD (Pta-6680), which indicates that something must be amiss with these two dates.

To the north of the central midden, Layer 7 in Excavation Ts 6 was dated to 1167 AD (Pta-6080).

The Southern Terrace

The previous dates in Test Pit E2 (excavated between 1968 and 1970) have now been calibrated to 1270 AD (Pta-0437) for Layer 5, 1265 AD (Pta-0438) for Layer 7(iii) and 1252 AD (Pta-0439) for Layer 10.

In Square F4, Layer 10 was dated to 1026 AD (Pta-2024). In Square H5, Layer 6(iii) was dated to 1173 AD (Pta-2023) and Layer 2(ii) was dated to 1414 AD (Pta-1138).

In Square K8, Layer 16 was dated to 1026 AD (Pta-0768), Layer 15 to 1234 AD (Pta-1156), Layer 3 also to 1234 AD (Pta-0766), Layer 2(ii) to 1277 (Pta-1752), and Layer 1(iii) to 1284 AD (Pta-1209).

Mapungubwe Hill

On Mapungubwe Hill, Layer 11 in Excavation MK 1 was dated to 1243 AD (Pta-1158) and 1252 AD (Pta-1159). In Excavation Mk 3, Layer 3 was dated to 1220 AD (Pta-1145). In the current Excavation Mk 4, a date of 1297 AD (Pta-6692) was obtained from a deposit at a depth of 60 to 75 cm in the wall of an old excavation. Two skeletons found during the 1930's were also dated, with a date of 1243 AD (Pta-3489) for Skeleton A621, and 1284 AD (Pta-3480) for Skeleton A622. The old date (Pta-0372) was calibrated to 1220 AD.

Small settlement sites in the Greefswald environment

On four small sites near Mapungubwe single dates were obtained from midden deposits next to what were presumably kraal deposits. On Site Map 4 on a natural terrace in the proximity of Mapungubwe Hill to the north-east, a one metre thick midden deposit in Excavation Ts 1 was dated to 1289 AD (Pta-6577). On Site Map 12, about one kilometre to the south-east of Mapungubwe Hill, two shallow midden deposits were dated to 1396 AD (Pta-6573) and 1660 AD (Pta-6575) respectively. Site Map 10, close to a large stone platform to the south-east of Mapungubwe, was dated to 1585 or 1547 or 1635 AD (Pta-6562). Site Map 20 on the adjacent farm Samaria to the west of Greefswald was dated to 1437 AD (Pta-6579).

Some conclusions

The main sites K2 and Mapungubwe are at present firmly dated to the period between 1000 AD and 1300 AD. Four periods in the settlement sequence of these two sites can be distinguished:

- Phase I is attributed to potsherds belonging to the Early Iron Age, and which were found in the bottom layers on Mapungubwe Hill and the Southern Terrace. No deposits were associated with these potsherds, which have consequently not been dated.

- Phase II lasted from 1030 to 1220. The vast settlement deposits of K2 and the relatively thin bottom deposits in the excavations on the Southern Terrace and Mapungubwe Hill belong to this phase.

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- Phase III, dated to the period between 1220 AD and ca 1250 AD, is associated with vast deposits consisting of numerous gravel floors, stone structures and other site features on Mapungubwe and especially the Southern Terrace.

- Phase IV lasted from ca 1250 AD to 1290 AD, and is associated with a decline in the building of settlement structures, and is associated with the presence of numerous arrow tips and linkshafts made of bone.

By 1289 AD, the midden deposits on Site Map 4 already existed next to a kraal deposit close to Mapungubwe, containing what appears to be Mapungubwe type pottery, indicating the continued presence of related cultural elements. These still existed by 1396 AD on Site Map 12, a kilometre to the east of Mapungubwe. Cattle and/or small stock herding communities continued to leave their settlement remains in the areas on Site Map 20 towards the 1430's, on Site Map 10 in the late 1500's or early 1600's and on Map 12 by 1660.

Phases III and IV on Mapungubwe seem to be contemporary to Period III at Great Zimbabwe.

4.7 Summary: The people and their material possessions

Since the discovery of gold objects in graves on Mapungubwe in 1933, many excavations were done on the archaeological sites of Greefswald, many human graves were found and much cultural material was collected. During the early years of the Greefswald project, archaeological materials were selectively collected and studied according to contemporary requirements, approaches and methods. During Phase Three of the Greefswald Archaeological Project, the physical remains of the inhabitants and their material possessions were studied by specialists on a number of occasions.

Recently, the inhabitants of K2 and Mapungubwe were identified and confirmed as indigenous people normally associated with the local Iron Age and subsistence farming (cf. Appendix 8.5). Current research on the health and palaeo-demography indicates that these people were healthy, as can be expected from their balanced diet of subsistence farming products which included sufficient grain, meat and probably also milk (cf. Appendix 8.6). The high mortality rate amongst children is regarded as normal, compared with the general mortality rate during prehistoric times.

The richness of the cultural remains from K2 and Mapungubwe surpasses that of most previous and contemporary settlements in southern Africa. The material cultural remains on K2 and Mapungubwe are representative of settled, successful, mixed farming communities who lived according to a subsistence pattern in an environment favourable to farming.

Large quantities of domesticated animal bone remains can be found in the deposits of the Greefswald sites, and quantities of burnt seeds of cultivated plants are found in the rubble of burnt storage huts in these sites. The breeds of animals possessed by these farmers were humped and humpless cattle (cf. Figures 4.6 and 4.7), goats (cf. Figure 4.4), sheep (cf. Figure 4.5) and dogs (cf. also Appendix 8.3). The agricultural products included *Sorgum*, *Pennisetum* and *Vigna* varieties. To a limited degree, hunting and gathering also contributed to the diet. Another important economic activity was foreign trade, through which large quantities of glass beads from Egypt were obtained (cf. Appendix 8.7). The basic economic activities and products of these communities appear to be fairly similar during the period of intensive settlement between ca 1000 to 1300 AD.

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The basic technology of the farming communities of K2 and Mapungubwe is also typical of the Iron Age at the time. This included an emphasis on the local manufacture and use of pottery, metal artefacts, and artefacts made of wood, ivory, bone, ostrich eggshell and the shells of snails and fresh water mussels.

Two groups of pottery vessels have been identified by means of a typological classification (cf. Chapter 4.2), and recorded as the K2 Vessel Series and the Mapungubwe Vessel Series. The K2 Vessel Series consists of spherical pots with short necks and mostly incised decoration motifs (cf. Figures 4.8 to 4.10), hemi-spherical open bowls (cf. Figure 4.11), spherical pots without necks but with restricted openings, often combined with spouts (cf. Figures 4.12 and 4.13), deep beaker-shaped bowls, mostly with incised decorations (cf. Figure 4.14), beakers, mostly with incised decorations (cf. Figures 4.15 to 4.18), and a small number of spherical pots with necks and comb-stamp decorations (cf. Figures 4.19 and 4.20). The Mapungubwe Vessel Series consists of round-bellied pots with necks and mostly incised decorations (cf. Figures 4.21 and 4.22), wide-bellied pots with necks and incised decorations (cf. Figure 4.23), shallow bowls with and without incised decorations (cf. Figures 4.25 to 4.27), deep bowls with restricted openings (cf. Figure 4.28) and vessels such as a terra cotta bowl which may have been imported from elsewhere (cf. Figure 4.24). The K2 Vessel Series was found exclusively at K2 and the bottom layers at Mapungubwe, but in the younger layers at Mapungubwe, the K2 Vessel Series was largely replaced by the Mapungubwe Vessel Series (cf. Table 4.3, Diagrams 4.1 and 4.2). At Mapungubwe, a few fragments of Song Celadon Ware from China were found (cf. Figure 4.50).

Ceramic figurines of humans and animals were made. Human figurines with an elongated shape and stumps for heads, arms and legs appear to be typical of K2 (cf. Figures 4.29 to 4.33), although at least one such figurine has been found at Mapungubwe (cf. Figure 4.34 and 4.35). The animal figurines are usually depictions of humped and humpless cattle, sheep and goats (cf. Figures 4.38 to 4.42). A ceramic figurine depicting a giraffe was also found at Mapungubwe (cf. Figure 4.37). Other ceramic objects include conical ceramic figurines from Mapungubwe (cf. Figure 4.36), spoons from K2 (cf. Figure 4.45), ceramic glass bead moulds from K2 (cf. Figures 4.43 and 4.44), ceramic whistles from K2 deposits (cf. Figures 4.48 and 4.49), ceramic disks and spindle whorls from Mapungubwe (cf. Figures 4.46 and 4.47).

An important aspect of K2 is the numerous home-made Garden Roller glass beads made from imported glass beads (cf. Appendix 8.8).

Small quantities of ore and slag indicate that metal artefacts were made on or near the sites. Iron artefacts include arrow heads, spear blades, hoe blades, beads and numerous fragments of wire bangles. Solid copper bangles and large numbers of copper wire or bangles made of wound strips of copper are scattered throughout the site deposits.

Gold objects are specifically associated with Mapungubwe. A few gold beads and fragments of bangles made of wound strips of gold have been found in the deposits on the Southern Terrace and Mapungubwe Hill. By contrast, large numbers of gold objects were found in three graves on Mapungubwe Hill. These grave objects included gold foil shaped into the figurine of at least one rhinoceros (cf. Figure 4.51), a bowl (cf. Figure 4.52), at least one staff (cf. Figure 4.53), some as yet unidentified objects (cf. Figure 4.54), bangles (cf. Figures 4.55 and 4.56) and bead-sized cylinders (cf. Figure 4.57). Other gold artefacts include hammered objects such as nails or tacks (cf. Figures 4.58 and 4.59), discs (cf. Figure 4.64) and objects resulting from smelting and casting gold, such as beads (cf. Figures 4.60 and 4.61), globules (cf. Figure 4.63) and discs (cf. Figure 4.65). Some gold beads, made of bent rods, were also found.

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Stone implements include numerous boulders of dolerite, used as hammers and rubbing stones, a pan-shaped vessel from Mapungubwe, and a small conical pendant made of soapstone from Mapungubwe.

Disc-shaped beads made of ostrich eggshell, snail and fresh water mussel shells are present in substantial numbers in the deposits. Needles and awls made of bone and bangles made of ivory (cf. Figure 4.67) were found on K2. An important aspect of Mapungubwe is the presence of substantial numbers of San-type arrow-heads, often with inserted iron tips, in the upper layers (cf. Figure 4.68). Cowrie seashells from the East Coast are also present at K2.

Table 4.1 Pottery analysis: Stratigraphic units at K2

Site	Excavation	Main layers	Layers
K2	Rn 2	1 2 3	1,2 3 4,5
	Ts 1	1 2 3	1,2 3 4,5
	Ts 2	1 2 3	1,2 3 4
	Ts 3	1 2 3	1-11 12-16 17-18
	Ts 4	1 2 3	1,2 3-5 6,7
	Ts 5	1 2 3	1 2 3
	Ts 6	1 2 3	1-3 4,5 6-13

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Table 4.2 Pottery analysis: Stratigraphic units at Mapungubwe

Site	Excavation	Main layers	Layer
Southern Terrace	F4	1 2 3 4	1,2 3-7(ii) 7(iii) - 8 9-11
	H5	1 2 3 4	1,2 3,4 5-6(ii) 6(ii)
	K8	1 2 3 4	1-3 4-8 9-15 16-17
	Mst 1, Square A2	1 2 3 4	1-3 4-10 11-13 14-15
Mapungubwe Hill	Mk 1 Mk 1	1 2 3 4	1-3 4-9 10 11
	Mk 2	1 2	1-5 6-7

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Table 4.3 Pottery frequency data: The K2 and Mapungubwe Series

	SITES	K2	SOUTHERN TERRACE				MAPUNGUBWE HILL			
	MAIN LAYERS	1-4	1	2	3	4	1	2	3	4
K2 SERIES										
Attribute combination 1	number	259	1	8	16	5	6	6	9	20
	column %	29.3	0.6	7.0	20	20.0	4.3	3.5	22.5	44.4
Attribute combination 2	number	207	14	5	17	9	5	8	9	11
	column %	23.4	8.1	4.3	21.3	36.0	3.6	4.7	22.5	24.4
Attribute combination 3	number	111	2	-	4	-	-	3	2	2
	column %	12.5	1.2	-	5.0	-	-	1.8	5.0	4.4
Attribute combination 4	number	76	-	1	7	7	-	-	3	1
	column %	8.6	-	0.9	8.8	28.0	-	-	7.5	2.2
Attribute combination 5	number	13	-	-	1	1	-	-	-	1
	column %	1.5	-	-	1.3	4.0	-	-	-	2.2
Attribute combination 6	number	88	1	1	6	-	-	-	2	3
	column %	9.9	0.6	0.9	7.5	-	-	-	5.0	6.7
TOTAL	number	754	18	15	51	22	11	17	25	38
	column %	85.2	10.5	13.1	63.9	88.0	7.9	10.0	62.5	84.3
MAPUNGUBWE SERIES										
Attribute combination 1	number	-	17	4	-	-	25	26	2	-
	column %	-	9.9	3.5	-	-	18.1	15.3	5.0	-
Attribute combination 2	number	-	15	14	1	-	19	31	-	-
	column %	-	8.7	12.2	1.3	-	13.8	18.2	-	-
Attribute combination 3	number	-	21	5	-	-	16	15	-	-
	column %	-	12.2	4.3	-	-	11.6	8.8	-	-
Attribute combination 4	number	-	4	2	-	-	3	3	1	-
	column %	-	2.3	1.7	-	-	2.2	1.8	2.5	-
Attribute combination 5	number	-	22	16	3	-	16	31	1	-
	column %	-	12.8	13.9	3.8	-	11.6	18.2	2.5	-
Attribute combination 6	number	-	15	7	-	-	10	11	-	-
	column %	-	8.7	6.1	-	-	7.2	6.5	-	-
Attribute combination 7	number	-	4	-	-	-	7	1	-	-
	column %	-	2.3	-	-	-	5.1	0.6	-	-
Attribute combination 8	number	-	32	19	12	-	12	20	3	1
	column %	-	18.6	16.5	15.0	-	8.7	11.8	7.5	2.2
Attribute combination 9	number	-	4	10	7	-	5	2	3	-
	column %	-	2.3	8.7	8.8	-	3.6	1.2	7.5	-
Attribute combination 10	number	-	9	6	-	-	4	4	-	-
	column %	-	5.2	5.2	-	-	2.9	2.4	-	-
TOTAL	number	-	143	83	23	-	117	144	10	1
	column %	-	83.0	72.1	28.9	-	84.8	84.8	25.0	2.2
NON-TYPICAL VARIATIONS	number	131	11	17	6	3	10	9	5	6
	column %	14.8	6.4	14.9	7.6	12.0	7.1	5.4	12.5	13.2
TOTAL	number	885	172	115	80	25	138	170	40	45
	column %	100.0	100.00	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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Diagram 4.1 - Pottery frequency data: The K2 and Mapungubwe Series

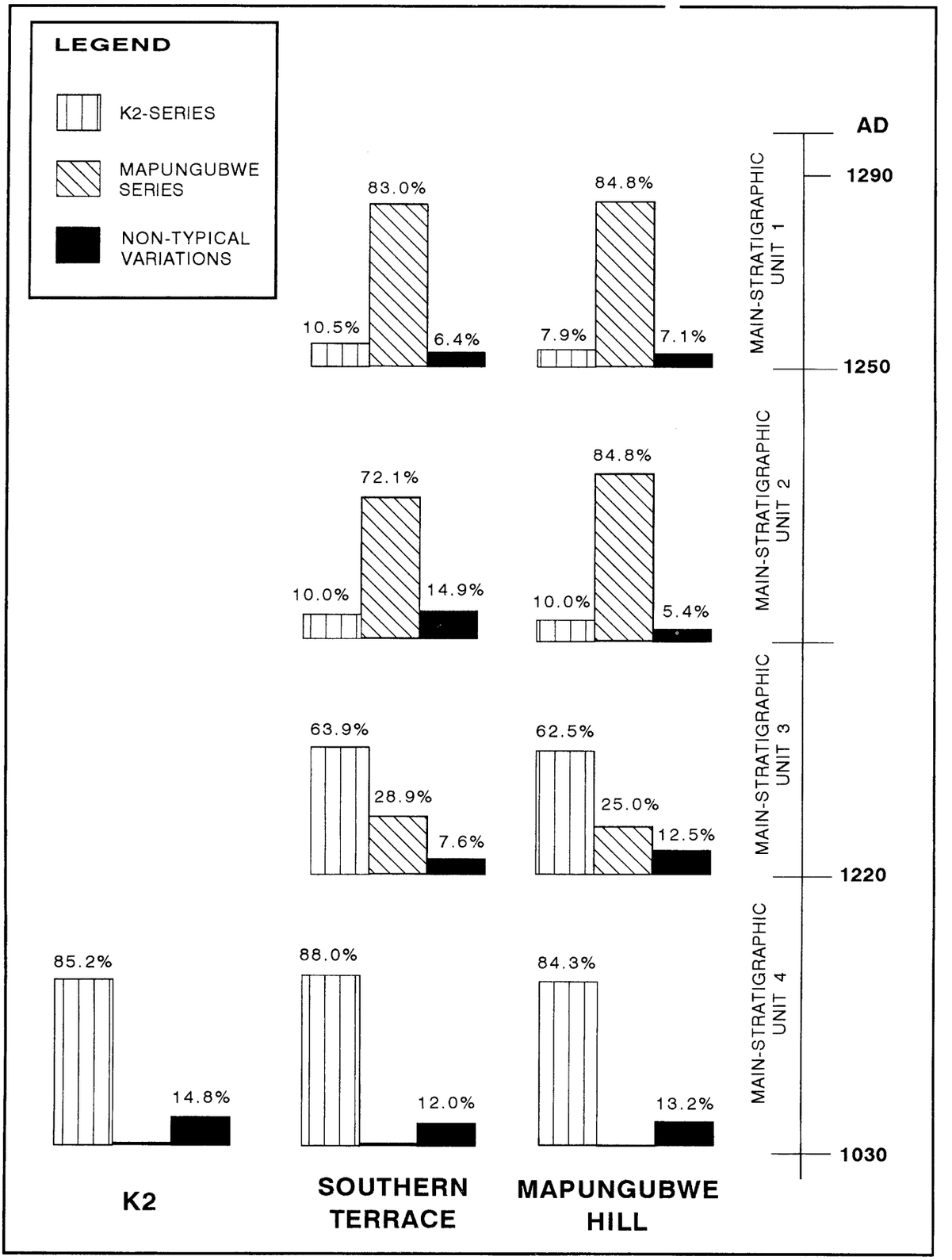

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Diagram 4.2 - Pottery frequency data: A comparison of frequencies by Schofield and Meyer

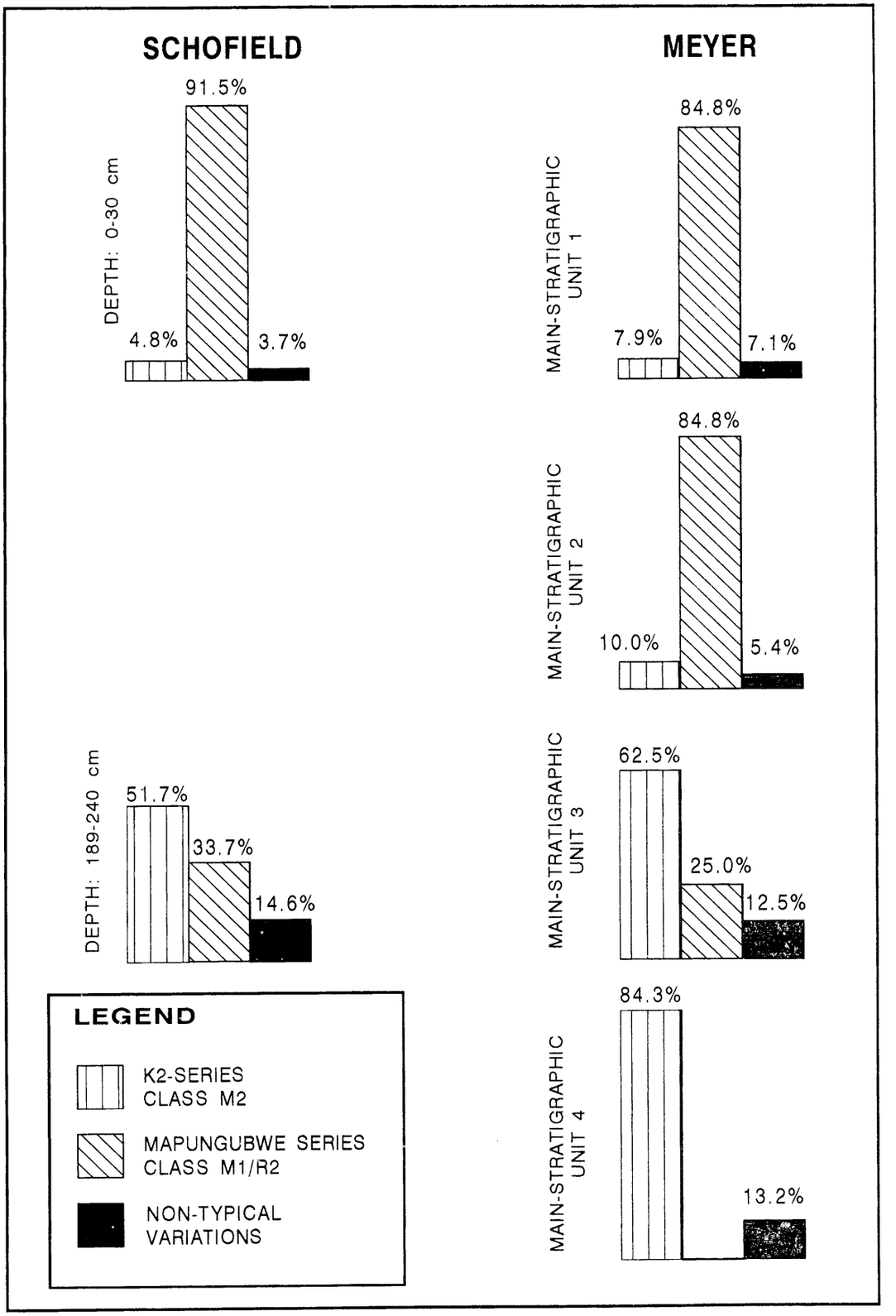

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Figure 4.1[188]
A glimpse into the past: Children and domesticated animals in a village in the Northern Transvaal during the 1930's.

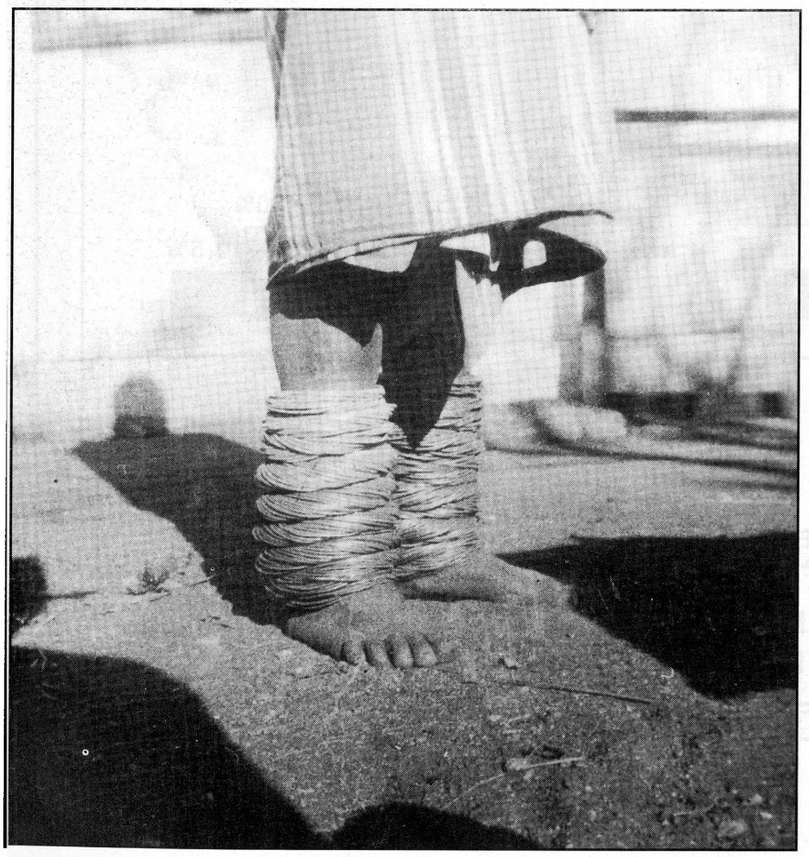

Figure 4.2[189]
Body decoration in the Northern Transvaal in the 1930's: metal leg decorations similar to the gold and iron objects found in graves on Mapungubwe Hill during 1934 and 1935.

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Figure 4.3[190]
Metal and other arm decorations in the Northern Transvaal during the 1930's, probably similar to grave objects found on Mapungubwe Hill during 1934 and 1935.

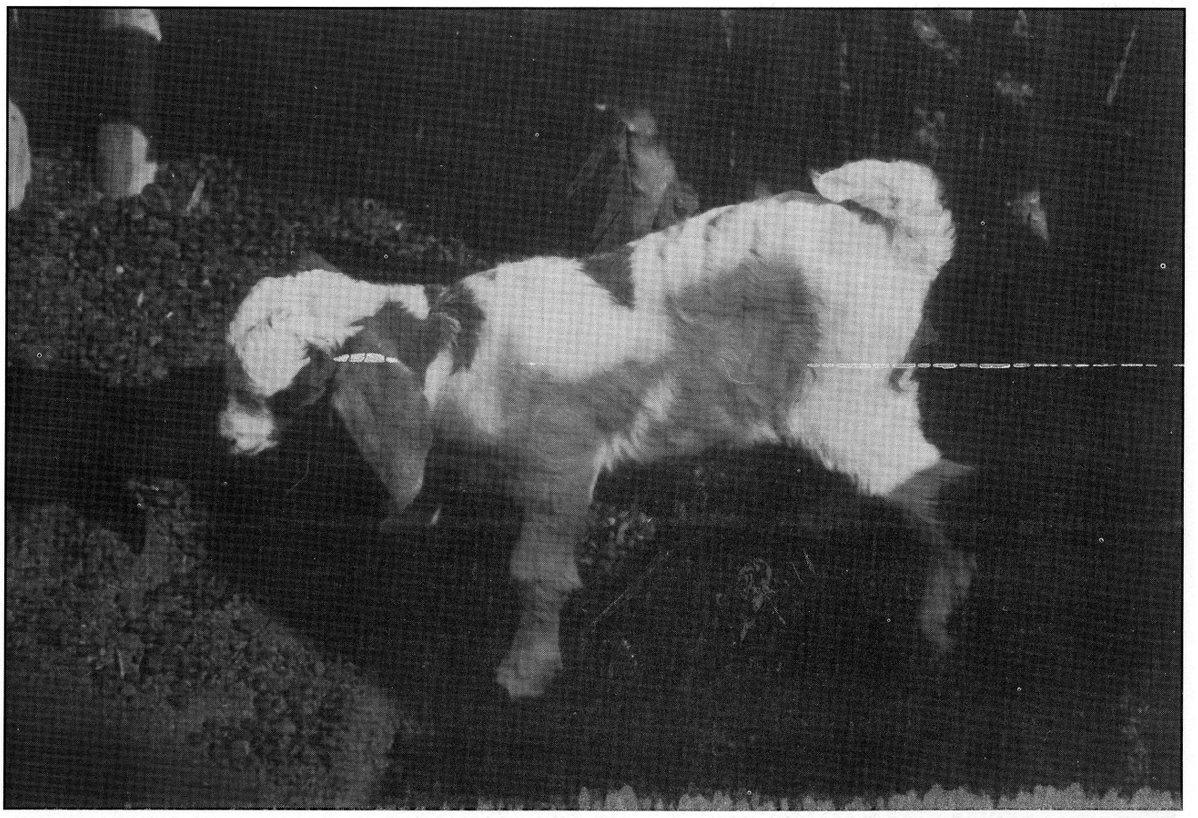

Figure 4.4[191]
An indigenous goat in a kraal for small stock.
Photo courtesy of the Transvaal Museum.

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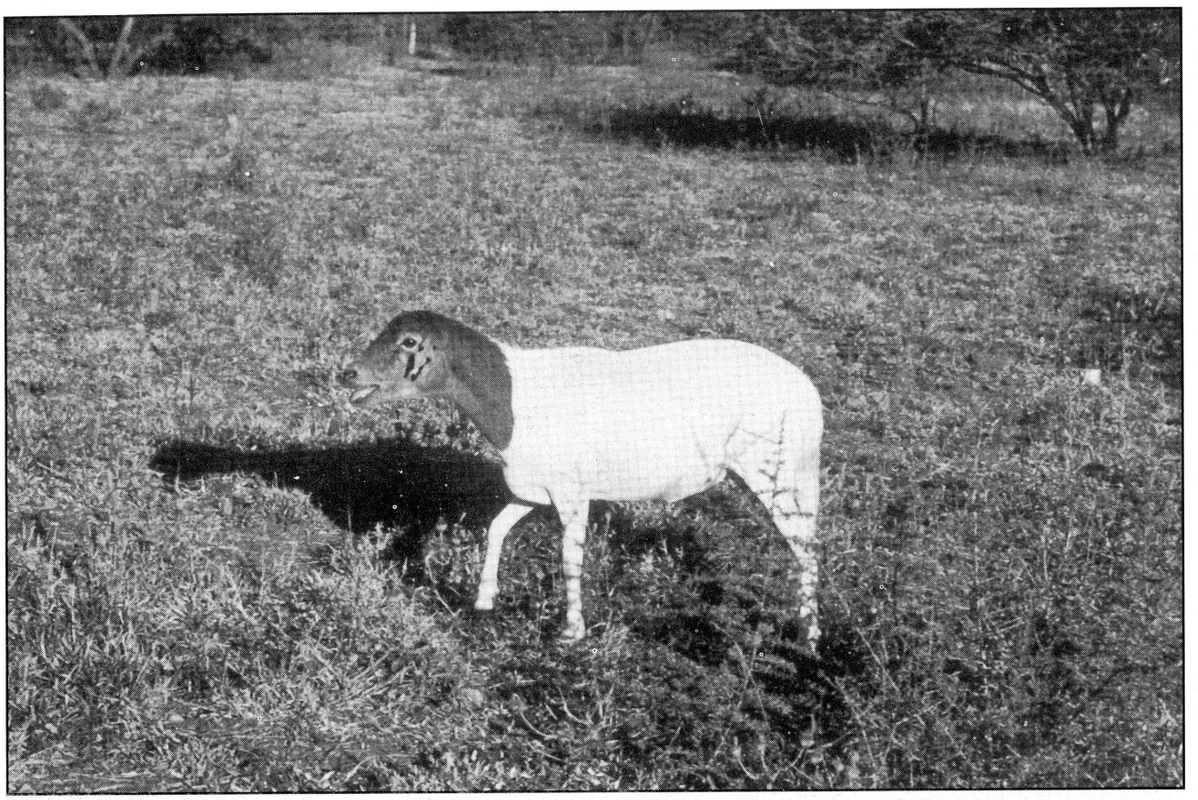

Figure 4.5[192]
An indigenous sheep in savannah environment.
Photo courtesy of the Transvaal Museum.

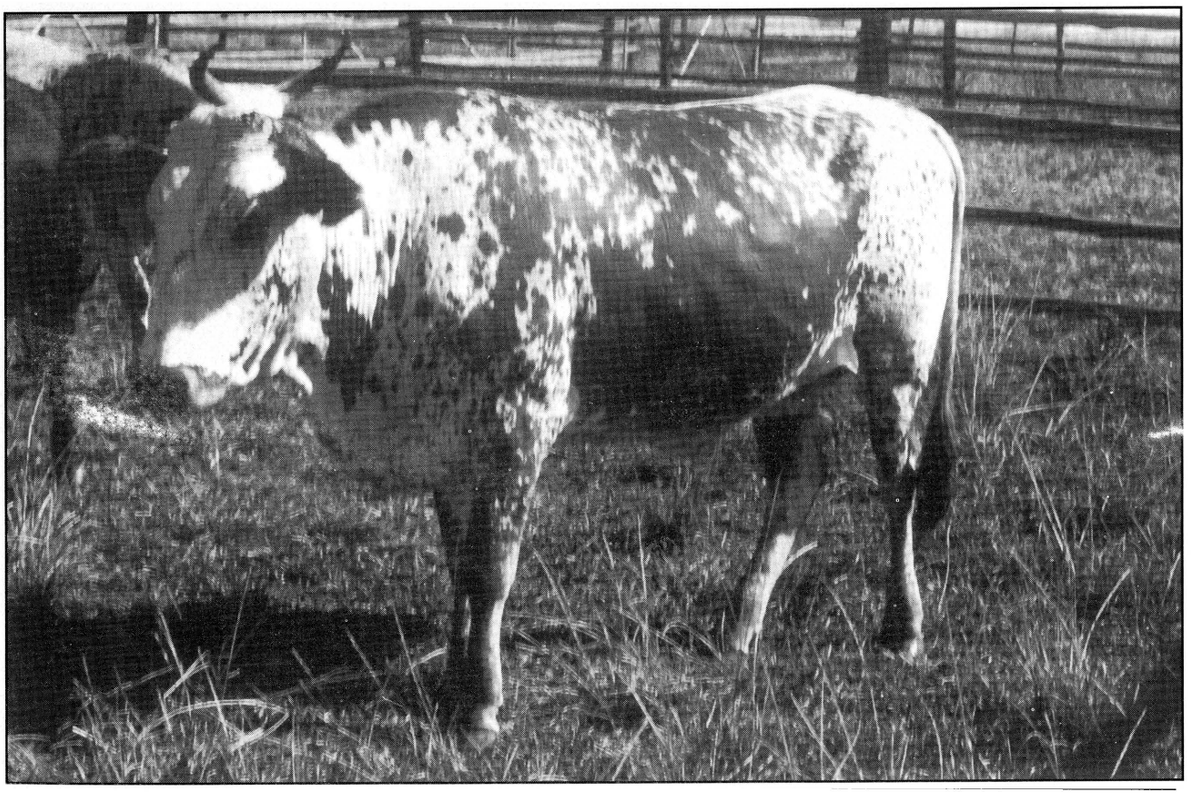

Figure 4.6[193]
An example of a humpless indigenous cattle breed. Photo courtesy of the Transvaal Museum.

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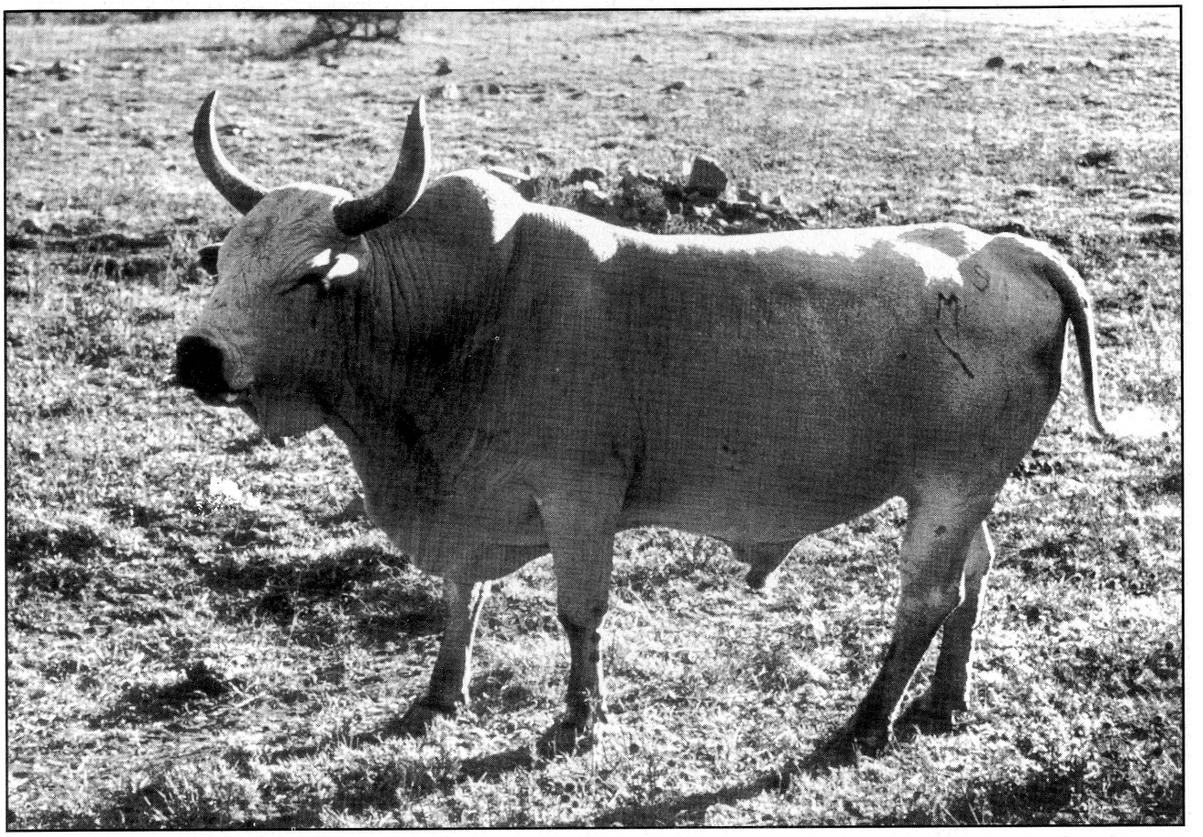

Figure 4.7[194]
An example of a humped indigenous cattle breed.
Photo courtesy of the Transvaal Museum.



Figure 4.8[195]
A ceramic pot[196] with a short neck and a band-shaped, impressed motif around the base of the neck. From 'Burial No.2, Bambandyanalo' at K2.

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Figure 4.9[197]
A ceramic pot[198] with a short neck and a series of crescent-shaped, incised motifs around the base of the neck. From Mapungubwe.



Figure 4.10[199]
A ceramic pot[200] with a short neck and a chevron-shaped, incised motif around the base of the neck. From Grave 'Ks 38', K2.

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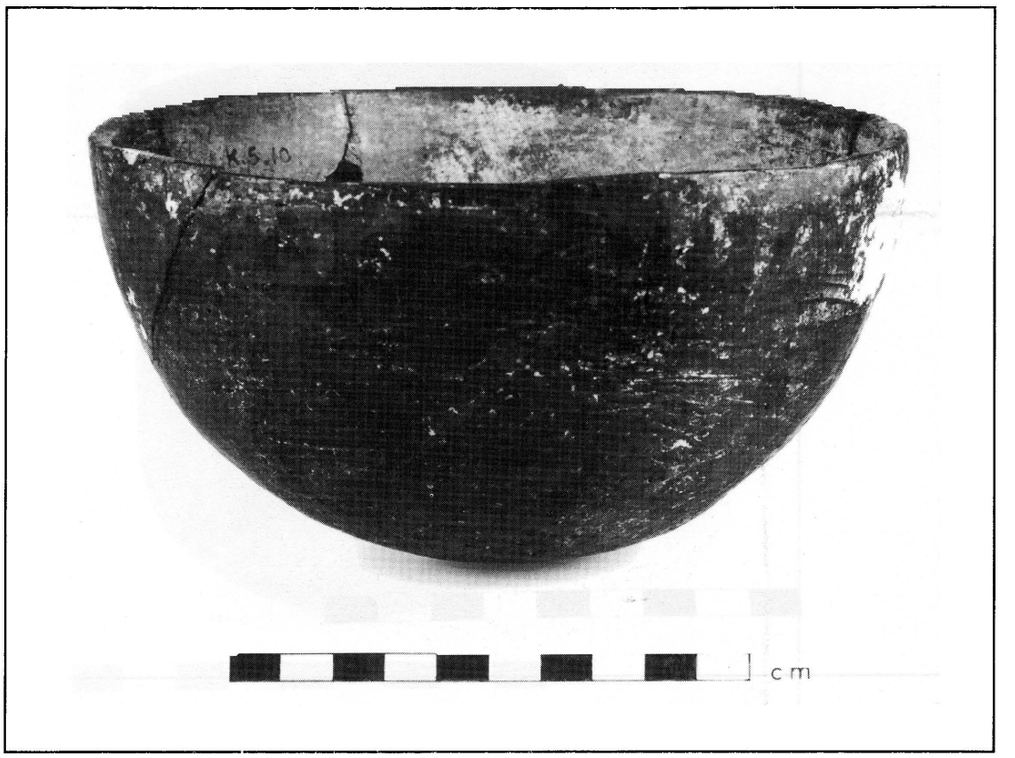

Figure 4.11[201]
A deep, undecorated ceramic bowl[202]. From Grave 'Ks 10', K2.

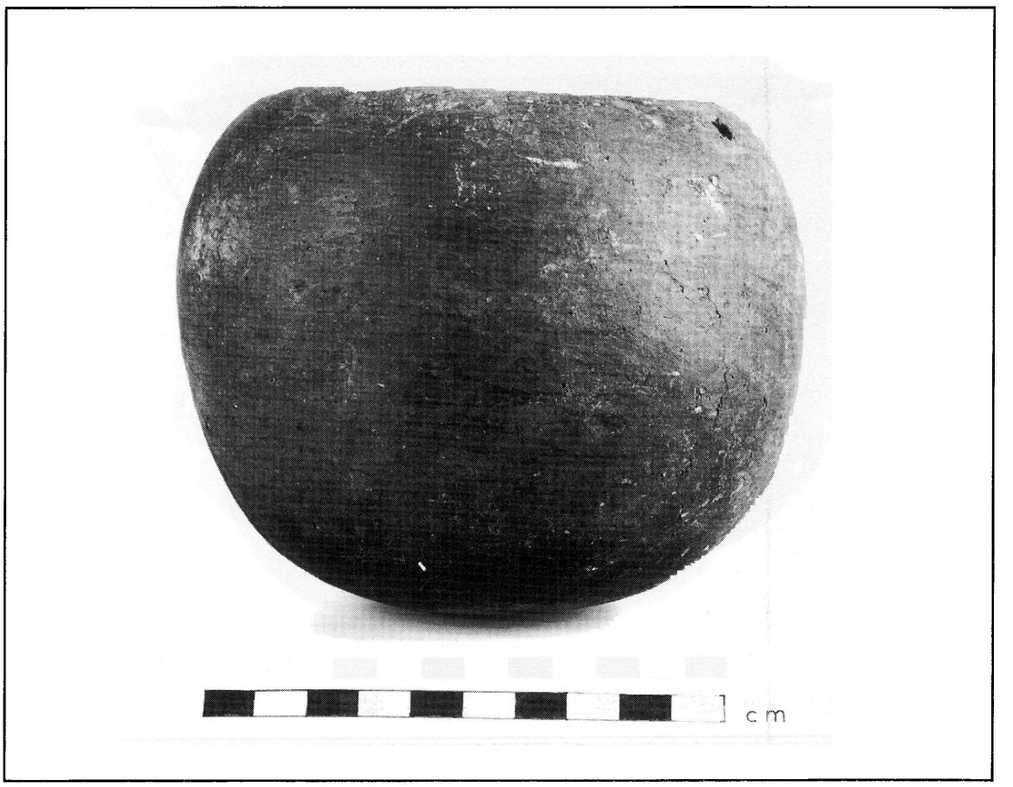

Figure 4.12[203]
A neckless, undecorated ceramic pot[204] with perforations below its rim. From Mapungubwe Hill.

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Figure 4.13[205]
A spherical, neckless, undecorated ceramic pot[206] with a cylindrical spout. From K2.

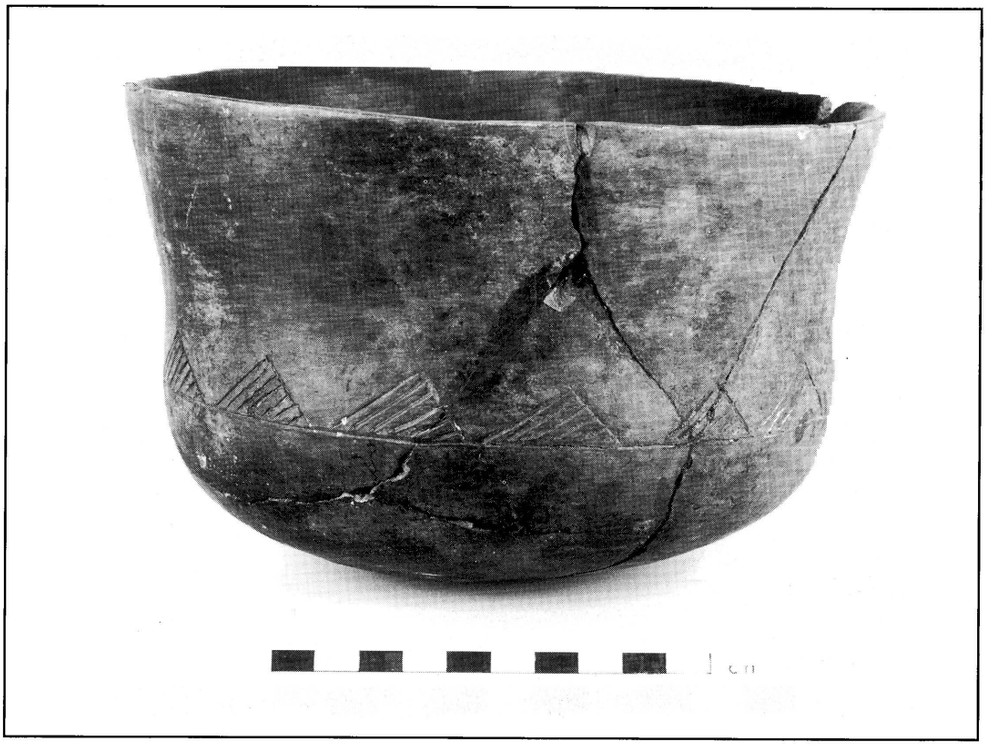

Figure 4.14[207]
A beaker-shaped ceramic bowl[208] with a series of triangular incised motifs near the base. From 'Beast Burial 6/38', K2.

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Figure 4.15[209]
A ceramic beaker[210] with band-shaped, incised decorations near its rim and base, and perforations below the rim. From Grave 'Ks 48', K2.



Figure 4.16[211]
A ceramic beaker[212] with band-shaped, incised decorations near the base and extending from the base. From Gardner's Test Pit No 6.

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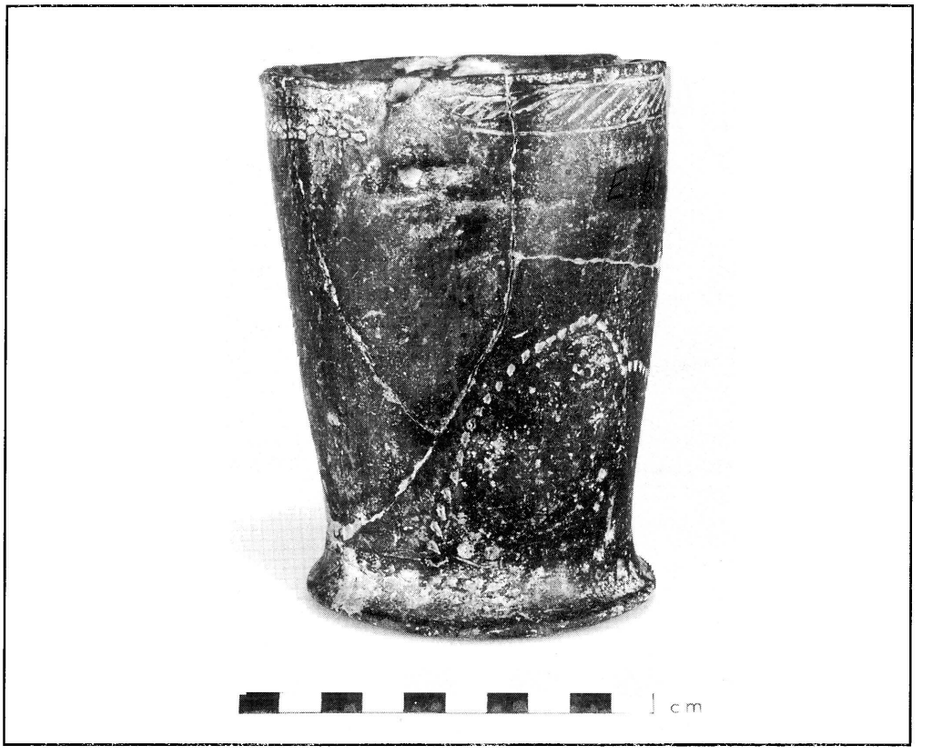

Figure 4.17[213]

A ceramic beaker[214], decorated with band-shaped incisions and rows of punctates, similar to beakers from K2. According to Schofield, who described this vessel, it was apparently found in the so-called Pont Drift grave area, on the farm Pont Drift to the west of Greefswald[215].



Figure 4.18[216]

A ceramic beaker[217] with a band-shaped, incised decoration at the base and extending from the base. From K2.

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Figure 4.19[218]
A ceramic pot[219] with a short neck and band- and crescent-shaped comb stamp impressions below the neck. From 'Occupation Area JS 2(b)', Mapungubwe.



Figure 4.20[220]
Part of a ceramic pot[221] with a short neck and band-shaped comb stamp impressions around the neck. From K2.

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Figure 4.21[222]

A round-bellied ceramic pot[223] with band- and diamond-shaped incised decorations below the neck. From Square F4, Southern Terrace, Mapungubwe.



Figure 4.22[224]

A round-bellied ceramic pot[225] with a series of triangular incised decorations below the neck. From Mapungubwe Hill.

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Figure 4.23[226]
A wide-bellied ceramic pot[227] with a series of triangular and diamond-shaped incised decorations below the neck. From Mapungubwe Hill.

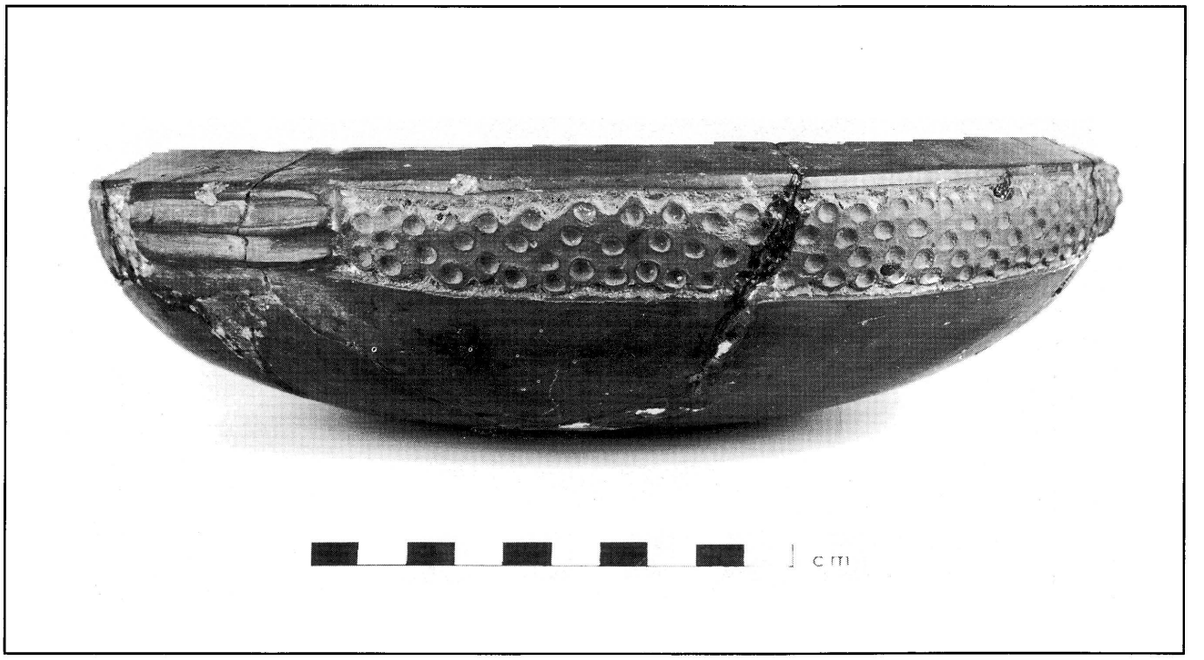

Figure 4.24[228]
A terracotta bowl[229] with band-shaped decorations and ridge-shaped handles below the rim. From Grave 11 on Mapungubwe Hill.

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Figure 4.25[230]
A shallow ceramic bowl[231] with a band-shaped and triangular incised motifs as well as ridge-shaped handles below the rim. From Mapungubwe Hill.



Figure 4.26[232]
A shallow ceramic bowl[233] without incised motifs or handles. From Mapungubwe Hill.

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Figure 4.27[234]
A shallow ceramic bowl[235] with incised, band- and diamond-shaped decorations below the rim. From Mapungubwe Hill.

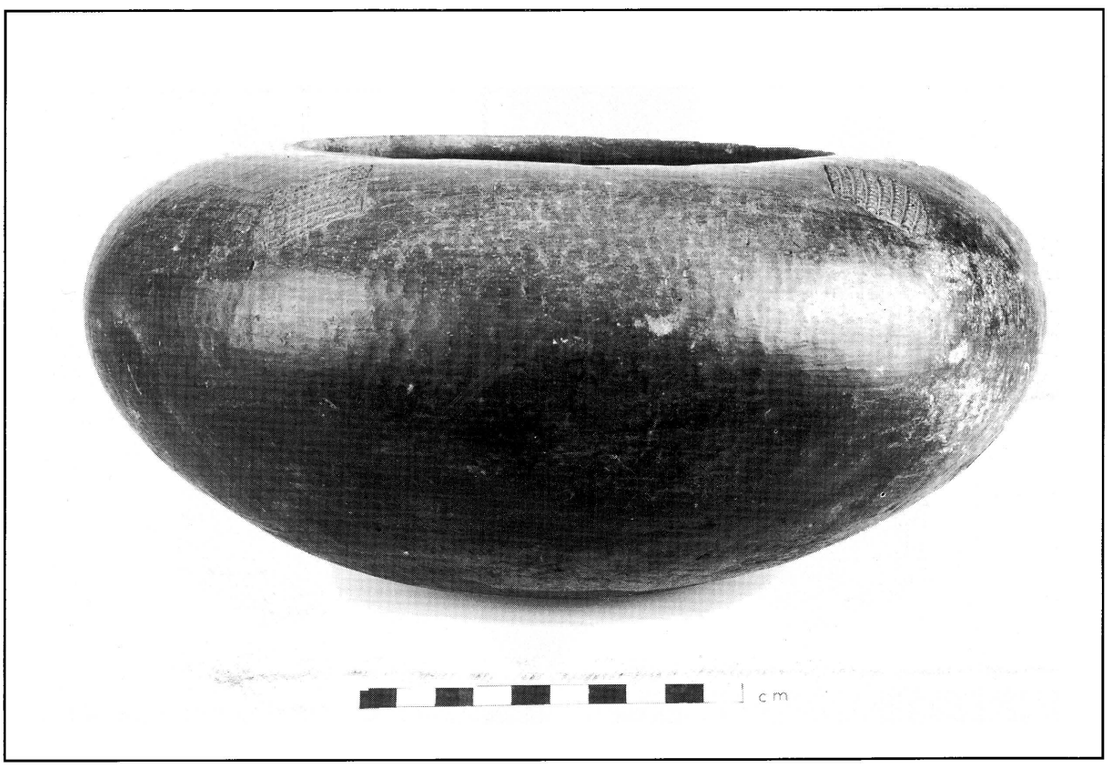

Figure 4.28[236]
A sub-spherical ceramic bowl[237] with diamond-shaped, incised decorations below the rim. From Mapungubwe Hill.

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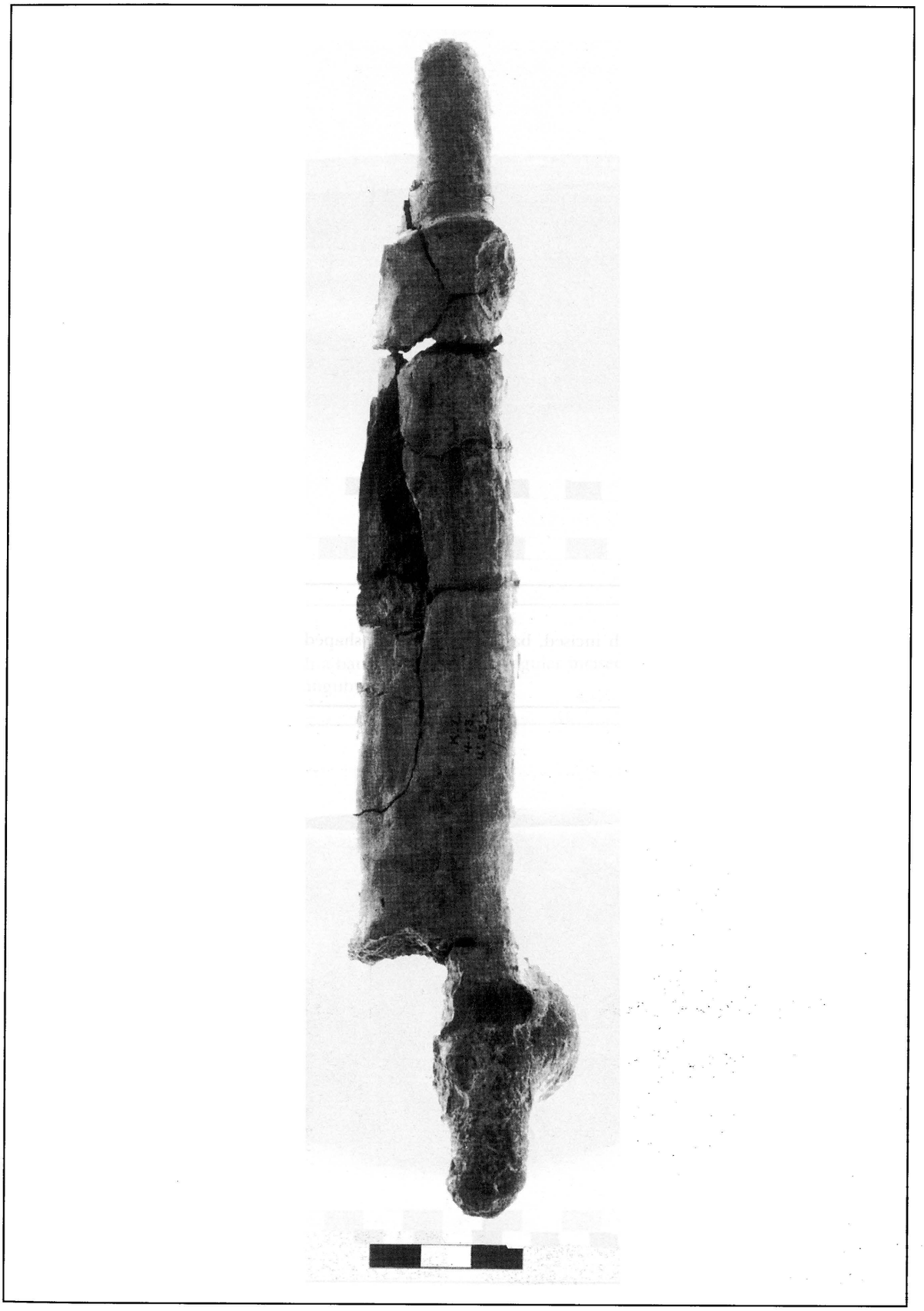

Figure 4.29[238]
Part of a ceramic human figurine[239] with a stump-shaped head, viewed from the front. From K2.

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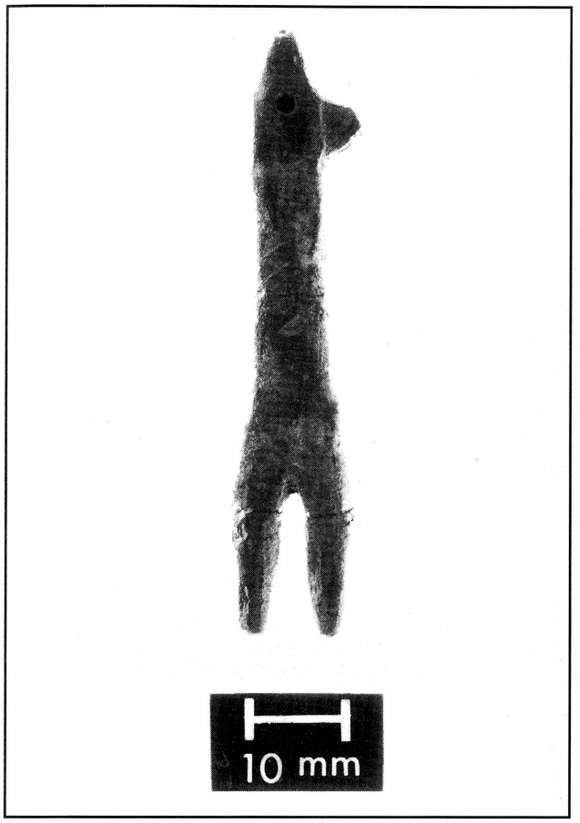

Figure 4.30[240]
A ceramic human figurine[241] with a stump-shaped head, viewed from the front. From Square 2, Excavation Ts 3, K2.

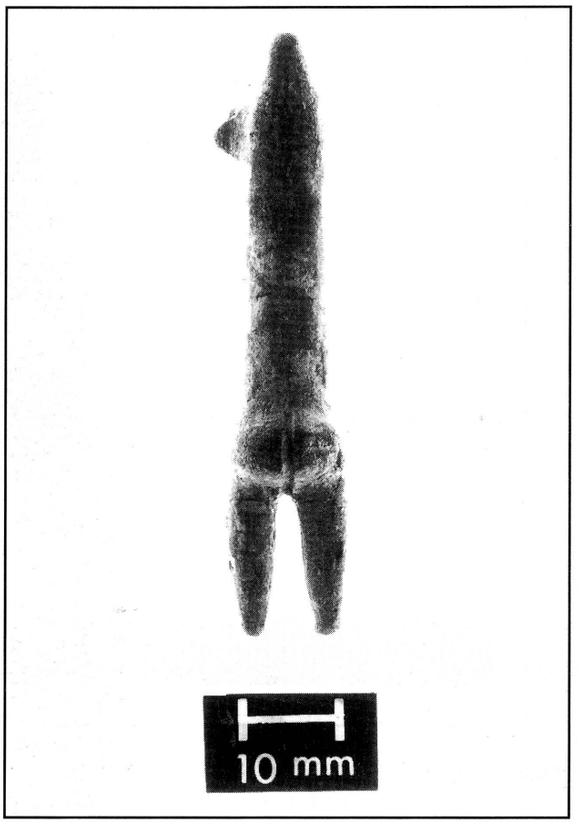

Figure 4.31[242]
The ceramic human figurine shown in Figure 4.30[243], seen from the back.

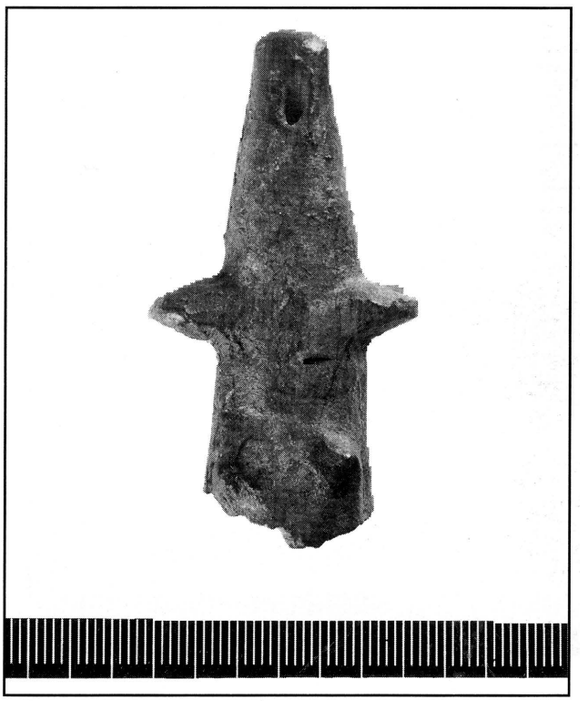

Figure 4.32[244]
The upper part of a ceramic human figurine[245] with stump-shaped head and arms, viewed from the front. From K2.



Figure 4.33[246]
The back view of the human figurine[247] shown in Figure 4.32.

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Figure 4.34[248]
The lower part of a ceramic human figurine[249] with stump-shaped legs, viewed from the front. From Mapungubwe.

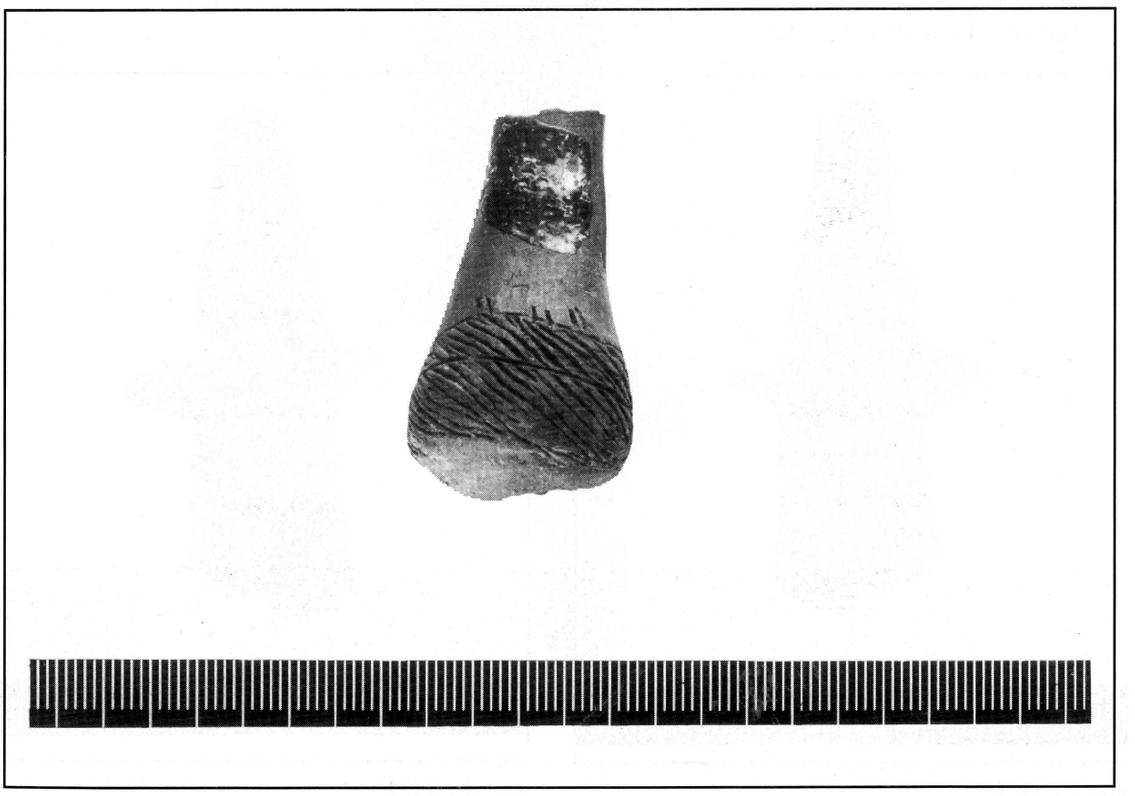

Figure 4.35[250]
The back view of the human figurine[251] shown in Figure 4.34.

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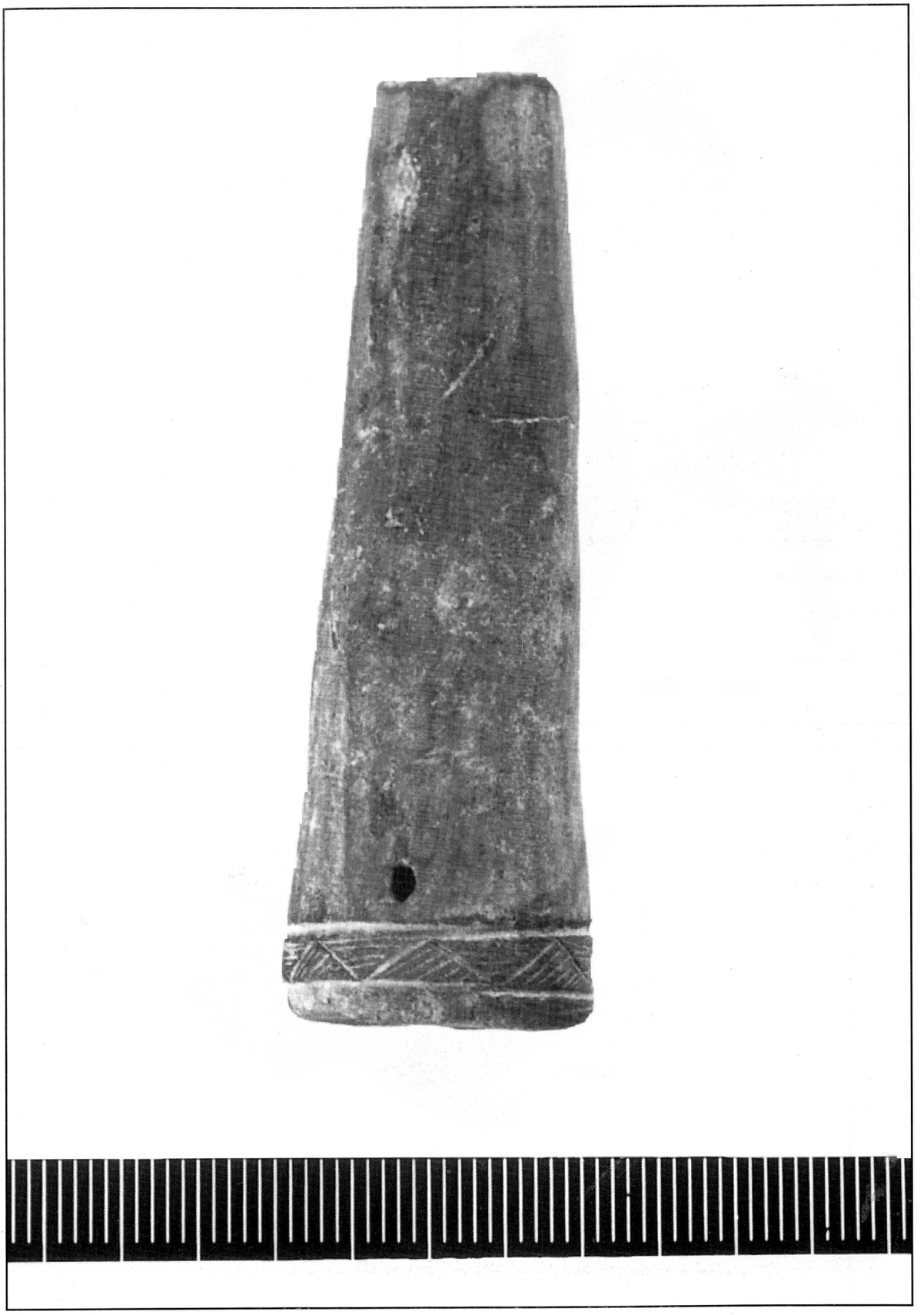

Figure 4.36[252]
A ceramic conical figurine[253]. From Mapungubwe.

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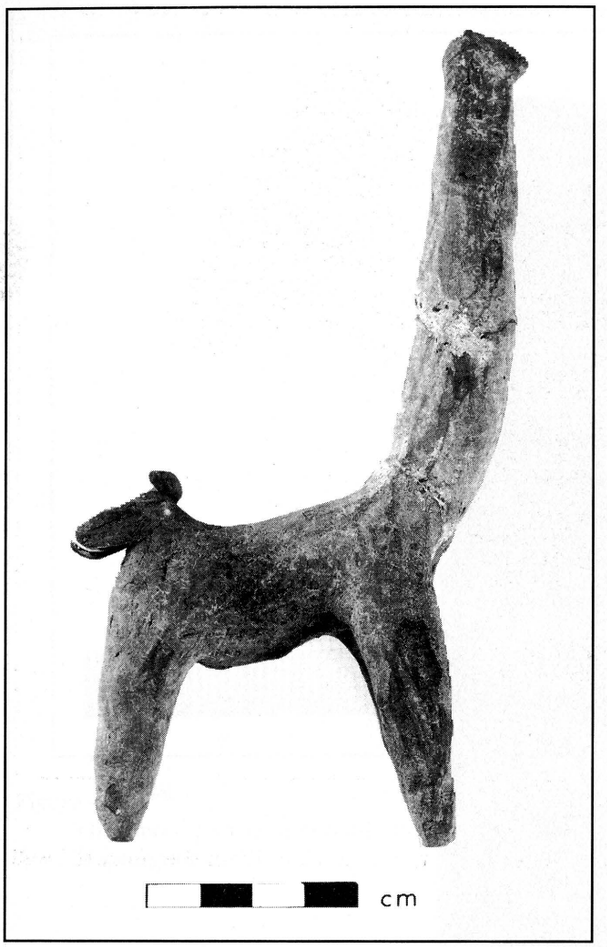

Figure 4.37[254]
A ceramic figurine[255] of a giraffe. From Mapungubwe.

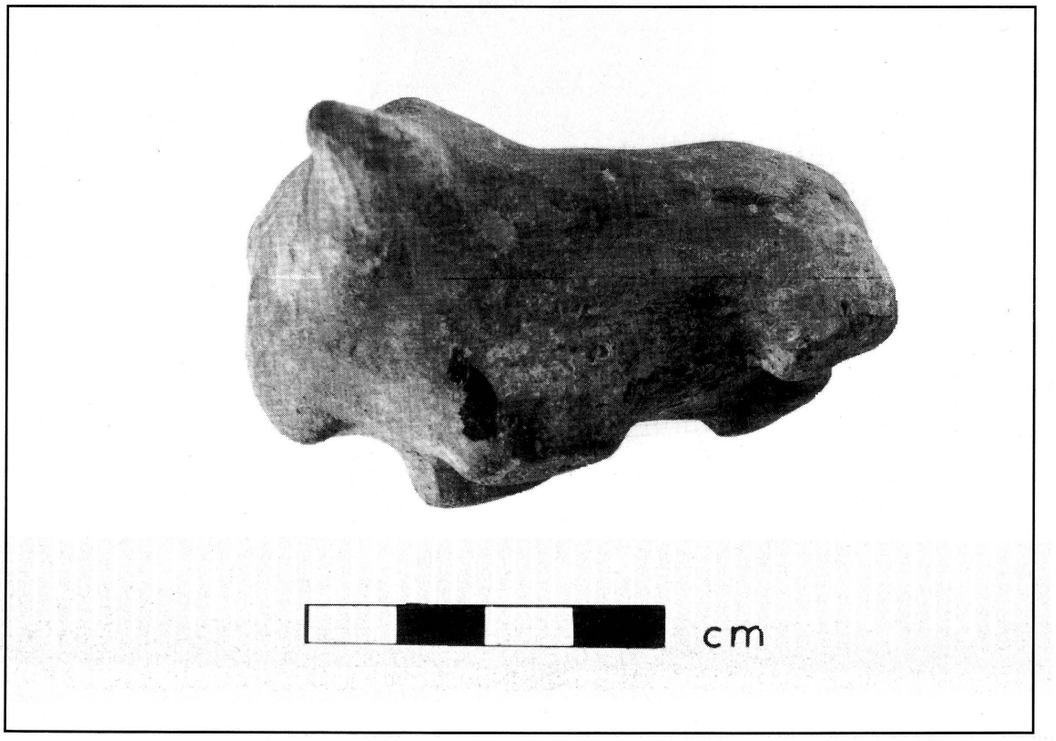

Figure 4.38[256]
A ceramic animal figurine[257], depicting a humped cattle breed. From Square A2, Excavation Ts 3, K2.

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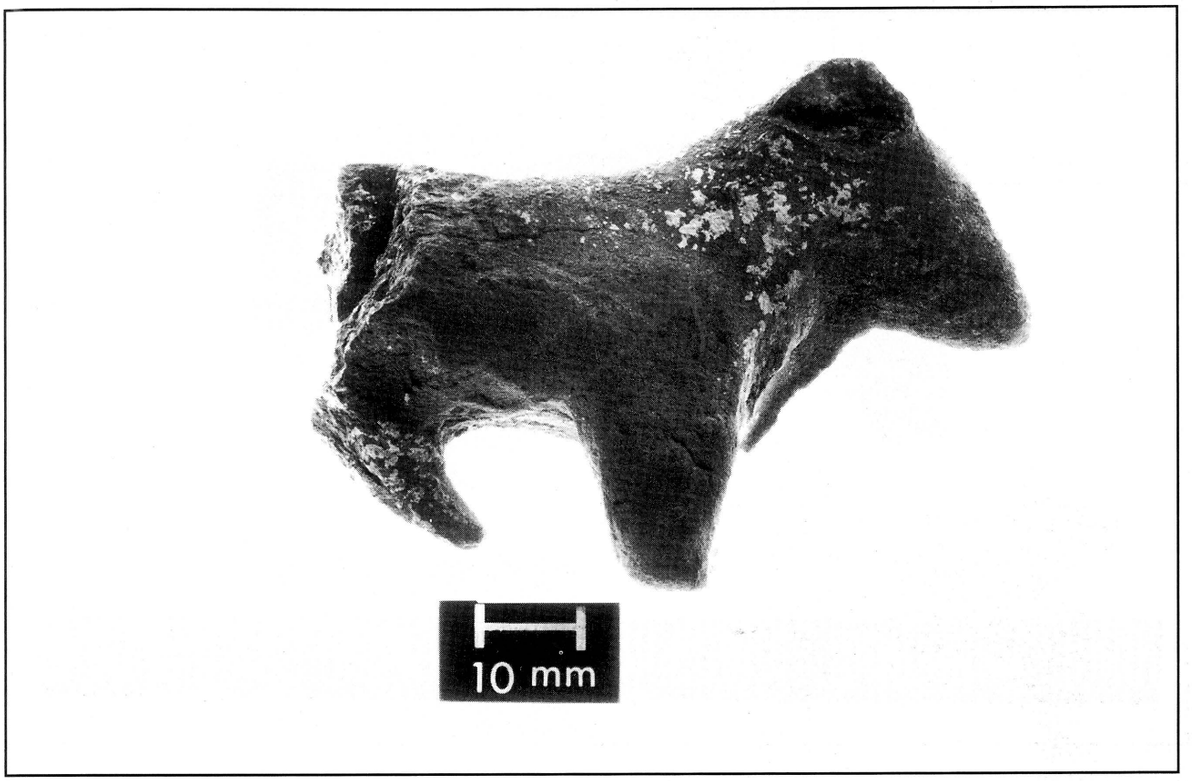

Figure 4.39[258]
A ceramic animal figurine[259], depicting a humpless male animal with a dew-lap. From the collapsed wall of Gardners' excavation, Excavation Rn 3, K2.



Figure 4.40[260]
Part of a ceramic female animal figurine[261]. From Square A2, Excavation Ts 3, K2.

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Figure 4.41[262]
A ceramic female animal figurine[263], possibly depicting a sheep. From Excavation K8, Mapungubwe.



Figure 4.42[264]
A ceramic animal figurine[265], possibly depicting a goat. From Mapungubwe Hill.

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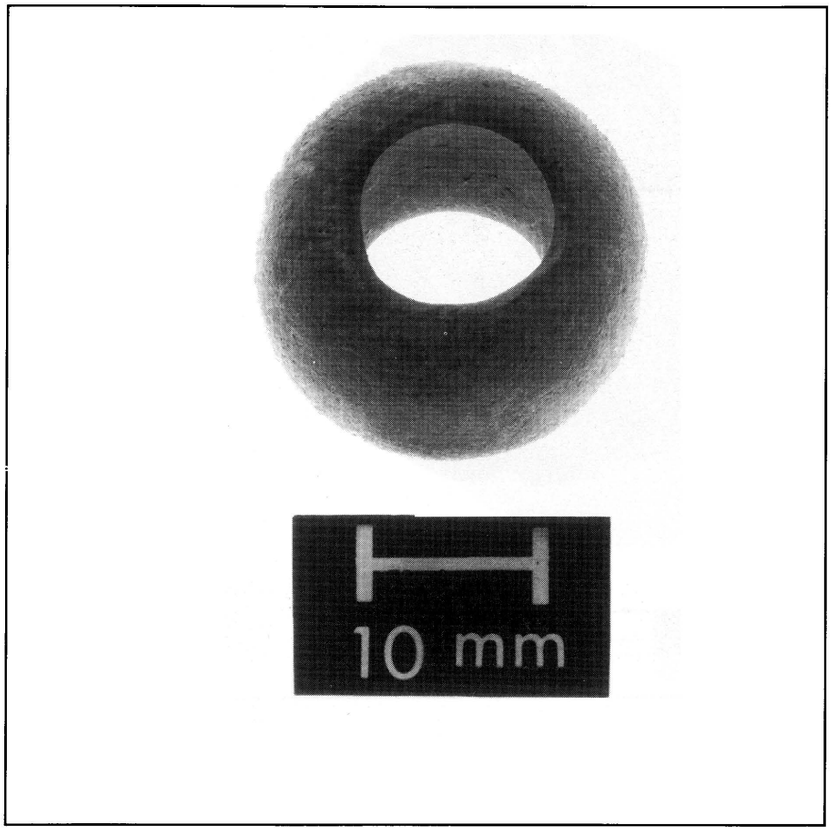

Figure 4.43[266]
A complete ceramic mould[267], intended for manufacturing glass beads. From K2.

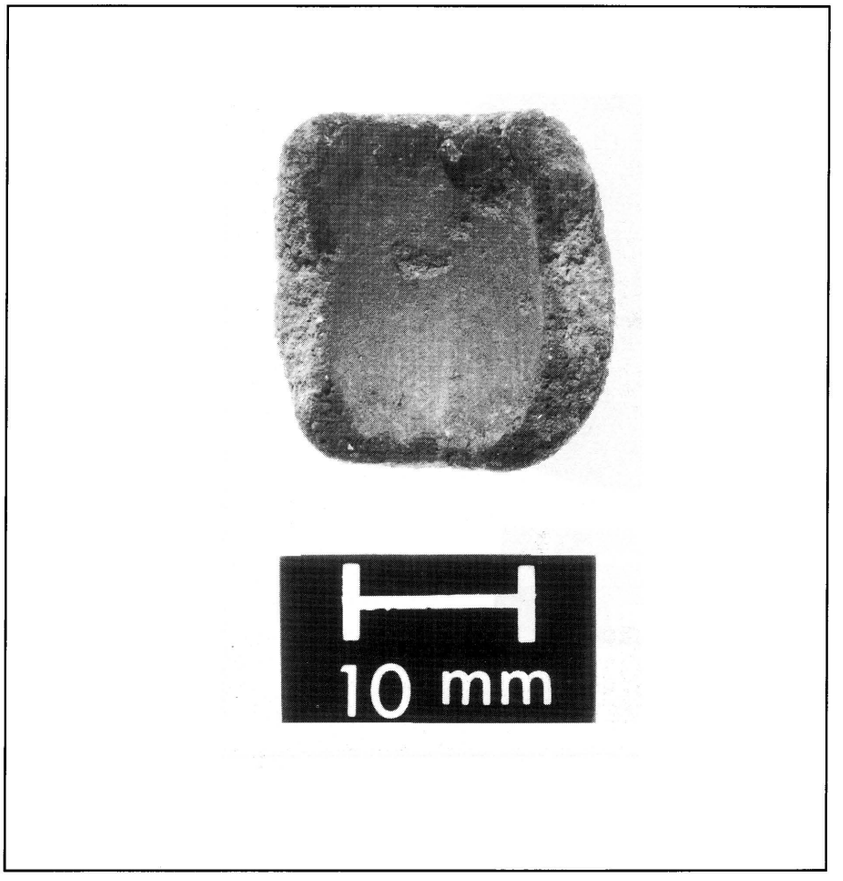

Figure 4.44[268]
A fragment of a ceramic glass bead mould[269], with a fragment of glass below its upper rim. From K2.

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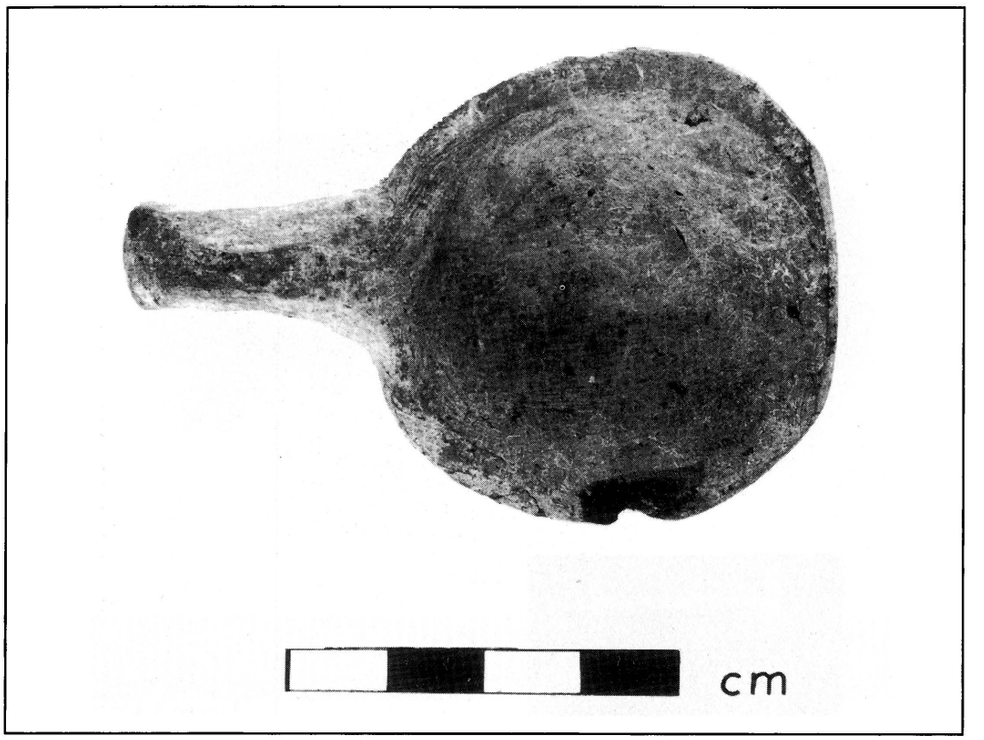

Figure 4.45[270]
A ceramic spoon-shaped object[271], possibly a snuff-spoon. From K2.

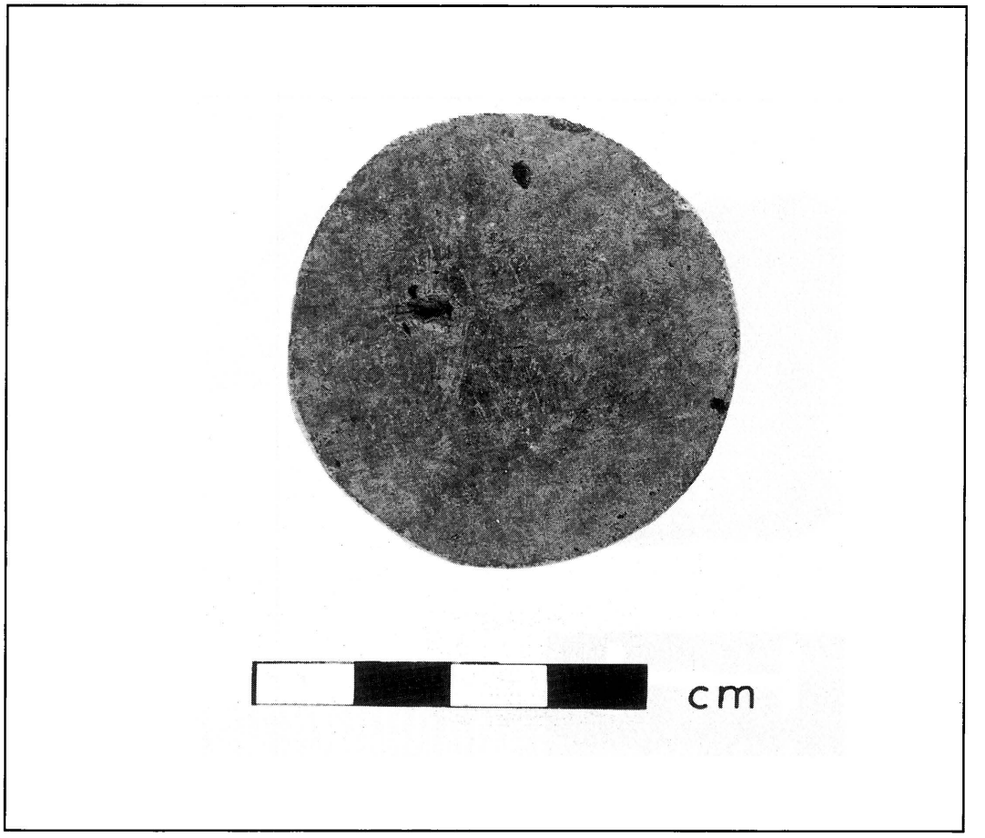

Figure 4.46[272]
A ceramic disc[273]. From Mapungubwe Hill.

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Figure 4.47[274]
A ceramic spindle whorl[275]. From Site Map 12.

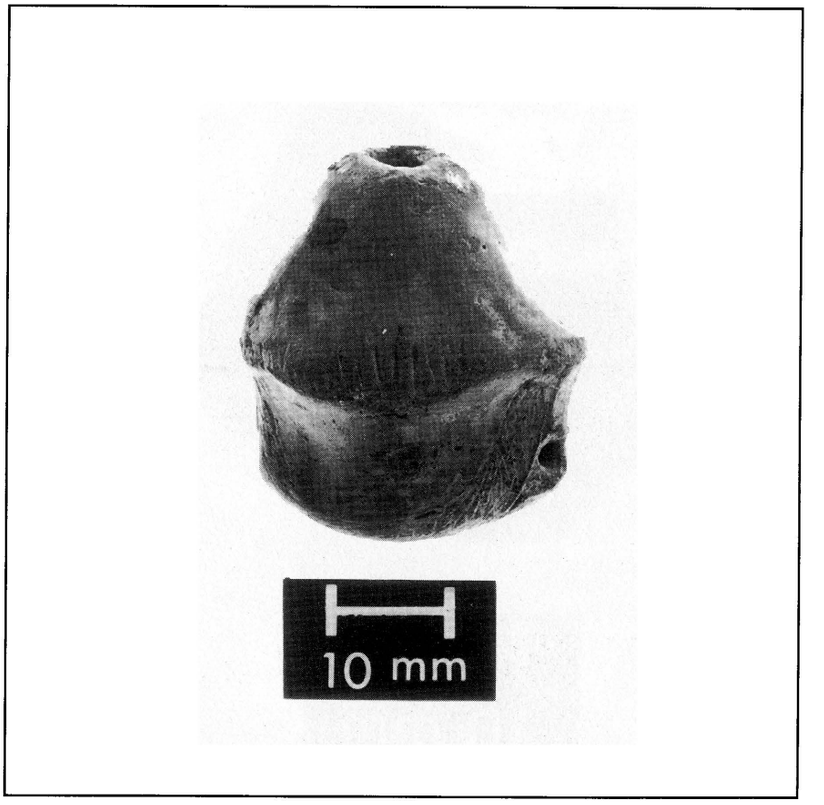

Figure 4.48[276]
A pendant-shaped ceramic whistle[277]. From Square A4, Layer 11, Excavation Mk 1, on Mapungubwe Hill.

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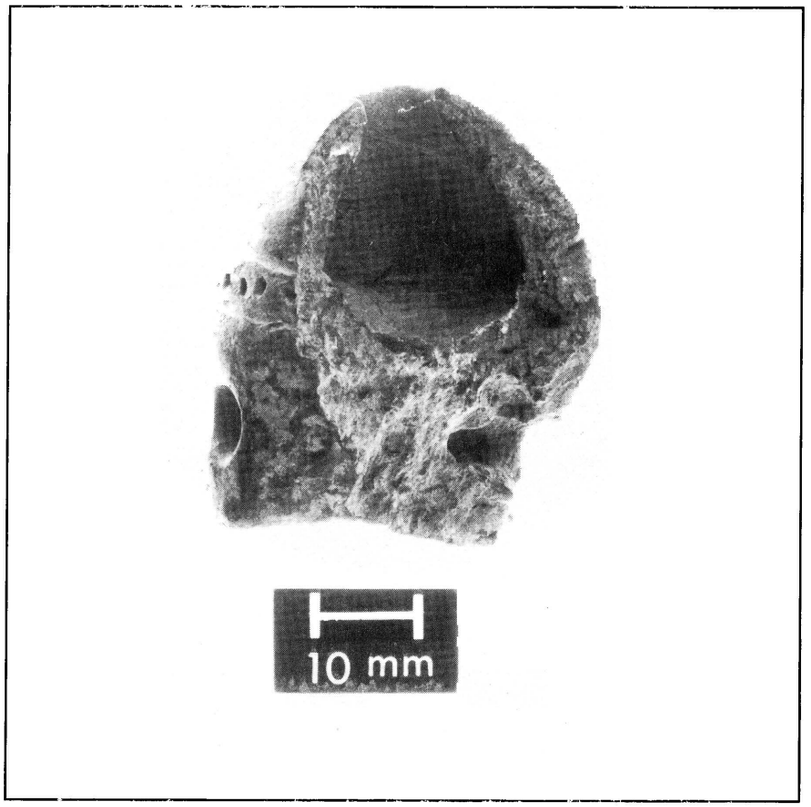

Figure 4.49[278]
Part of a pendant-shaped ceramic whistle[279]. From K2.

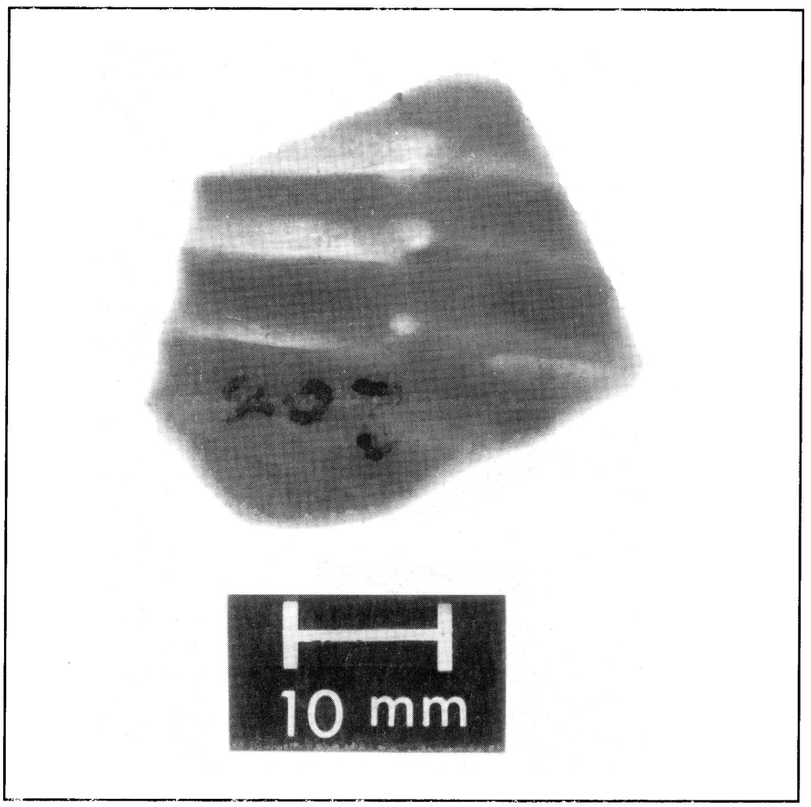

Figure 4.50[280]
Fragment of a Song celadon vessel[281]. Found on Mapungubwe.

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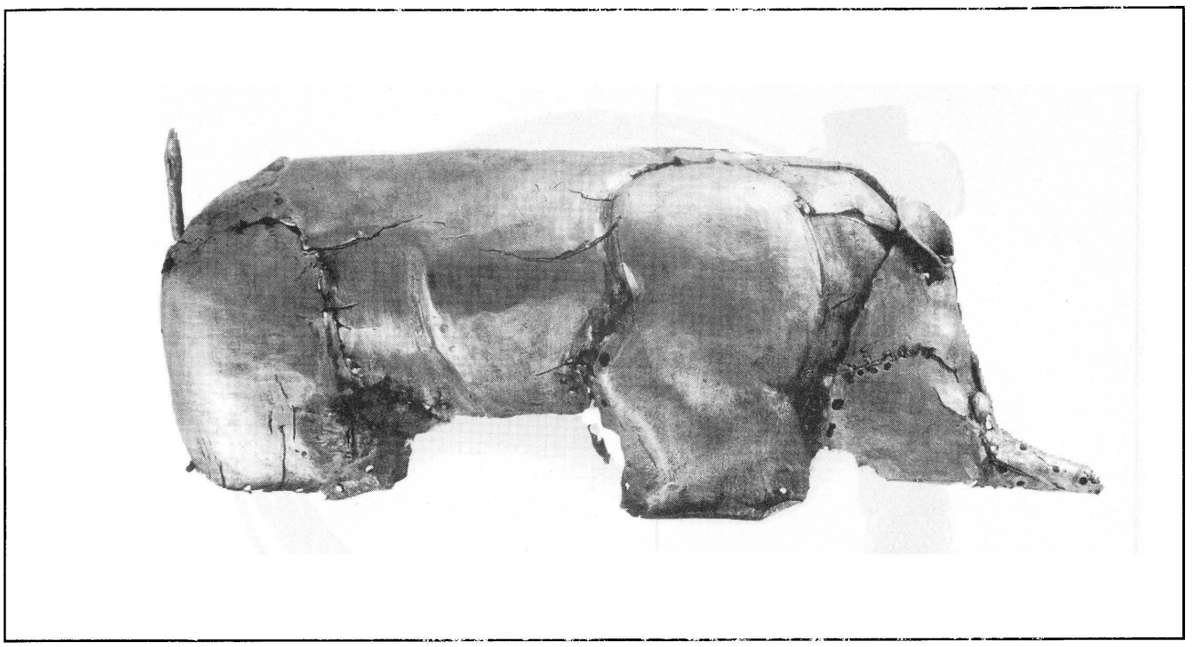

Figure 4.51[282]
A gold rhinoceros[283] from the grave referred to as the 'original gold burial' on Mapungubwe Hill. Length: 152mm, height: 55mm; width: 42mm.

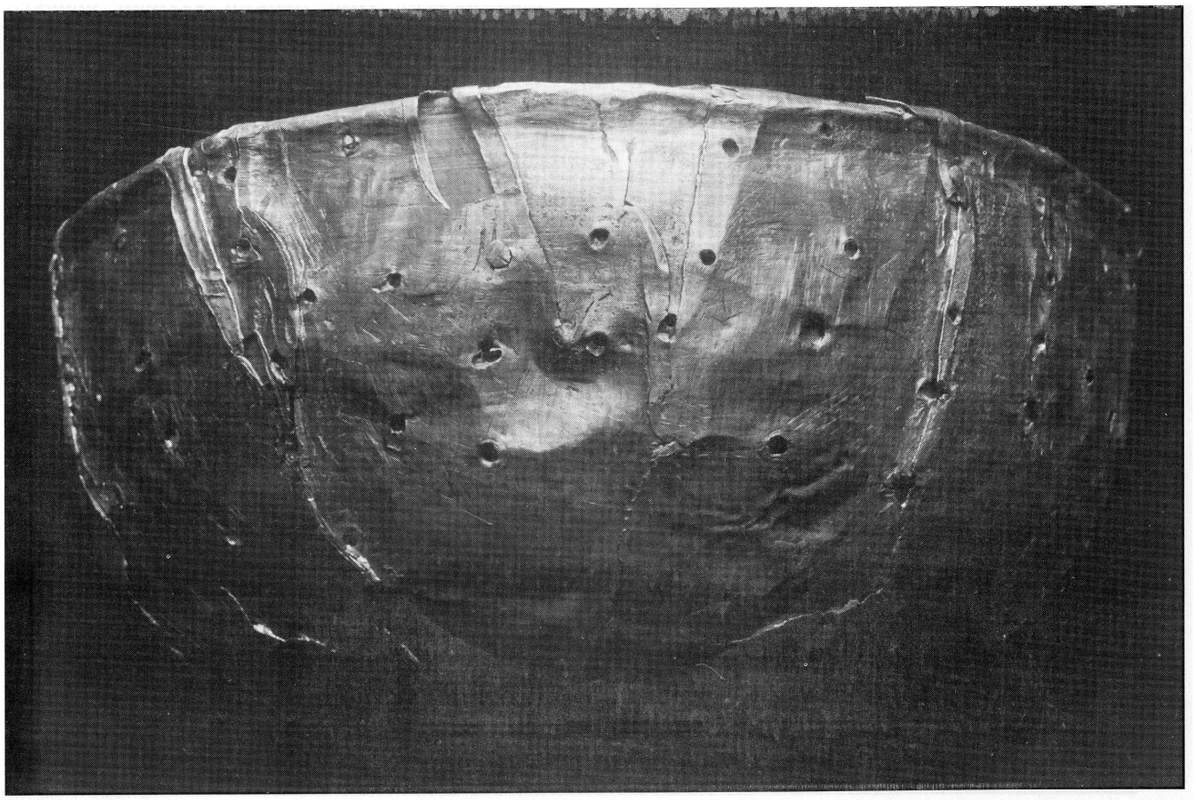

Figure 4.52[284]
The gold bowl[285] from the grave referred to as the 'original gold burial' on Mapungubwe Hill. Diameter: 144mm; height: 74mm.

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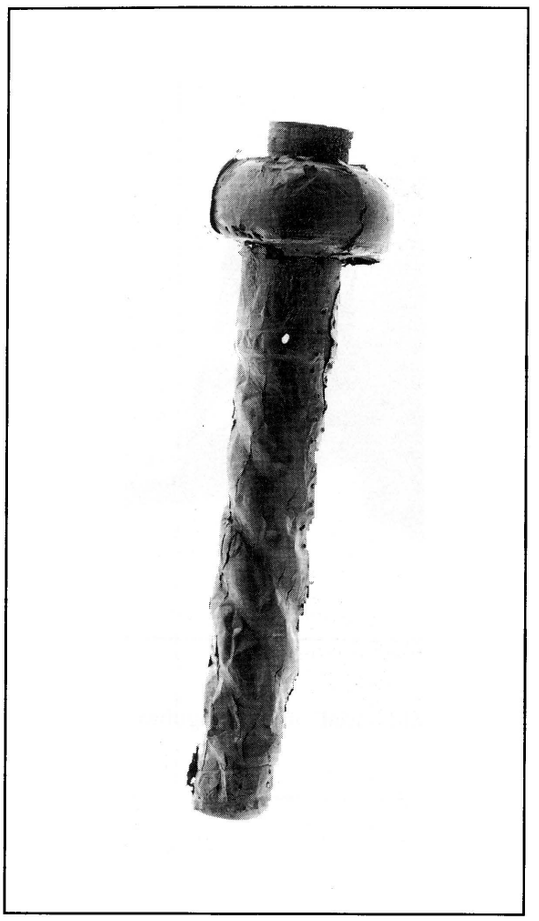

Figure 4.53[286]
A gold sceptre[287] from 'Grave No. 10' on Mapungubwe Hill. Length: 210mm, diameter (head): 60mm; diameter (shaft): 34mm.

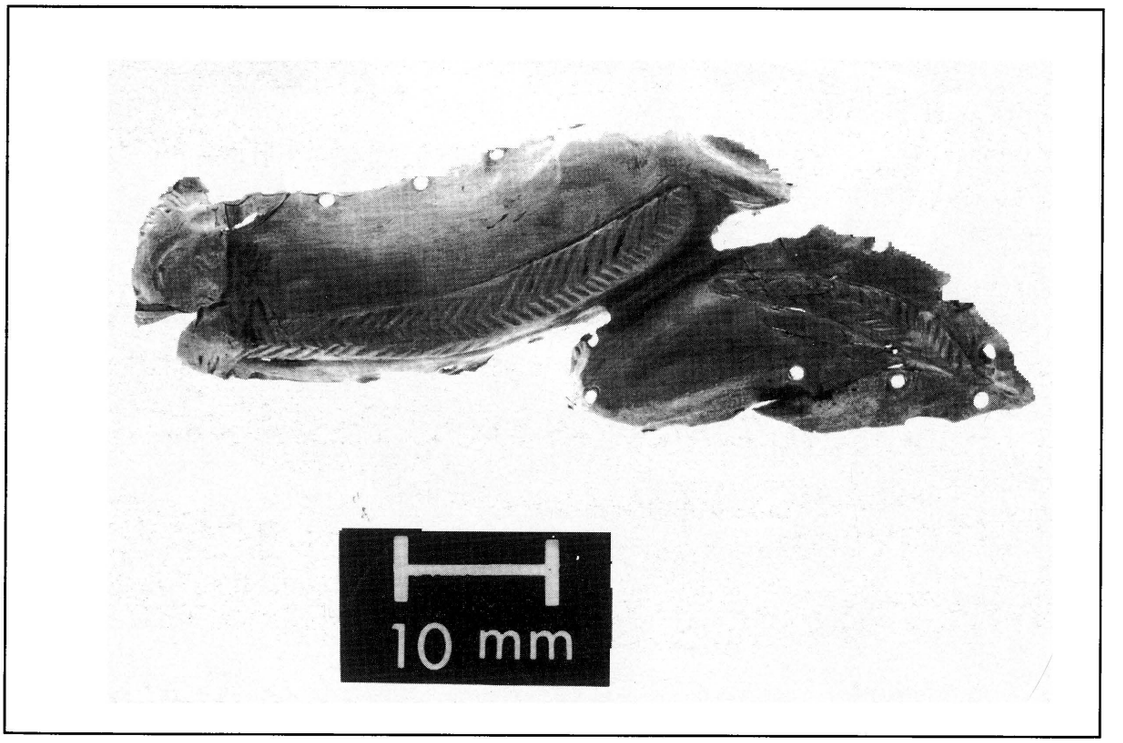

Figure 4.54[288]
A gold foil fragment[289] from an unidentified sculptured object, from 'Grave No. 10' on Mapungubwe Hill. Length: 60mm; width: 21mm; thickness 0.05-0.1mm.

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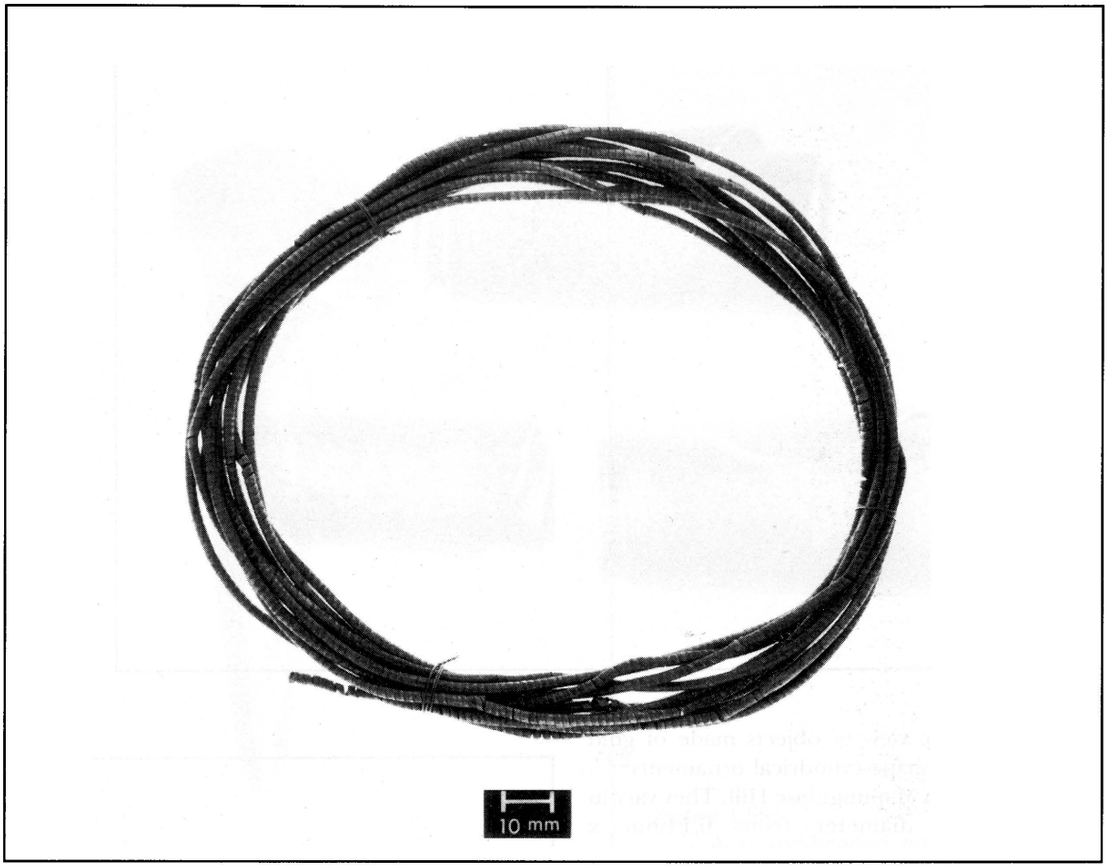

Figure 4.55[290]
Bangles[291] made of coiled strips of gold foil, from a grave on Mapungubwe Hill.

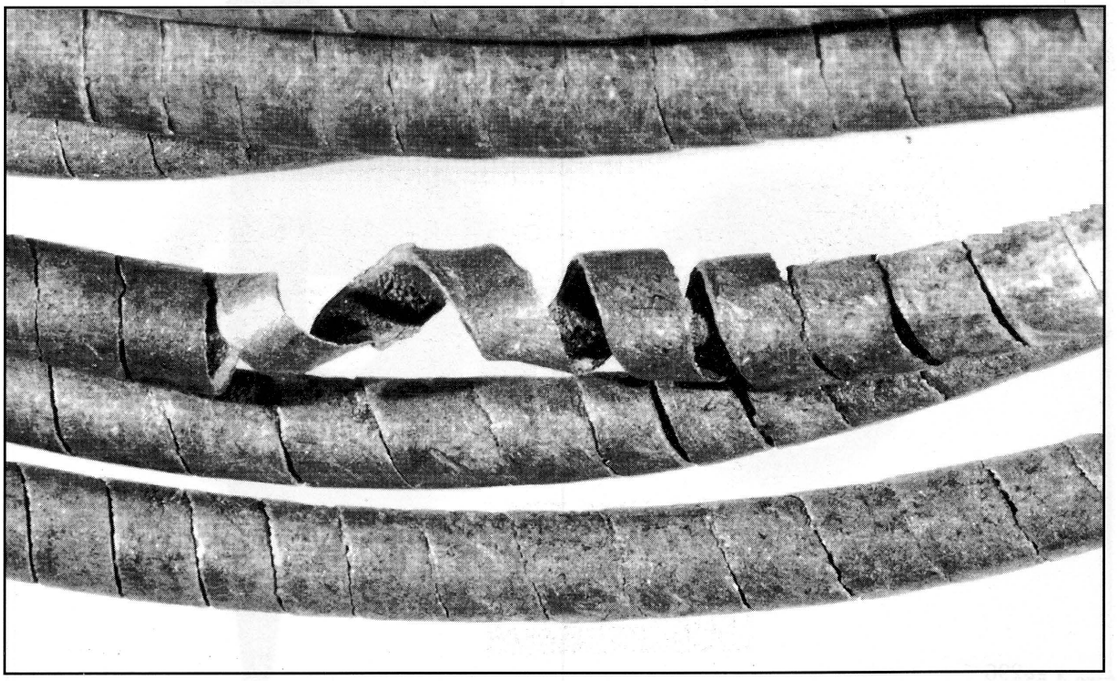

Figure 4.56[292]
A microscopic view of the bangles made of strips of gold foil. The strips of foil[293] were coiled into helix-shaped cylinders and were used as bangles. The diameter of the bangle is ± 140mm, the diameter of the tube 2,3mm-2,5mm and the thickness of the strip of gold foil is ± 0,25mm.

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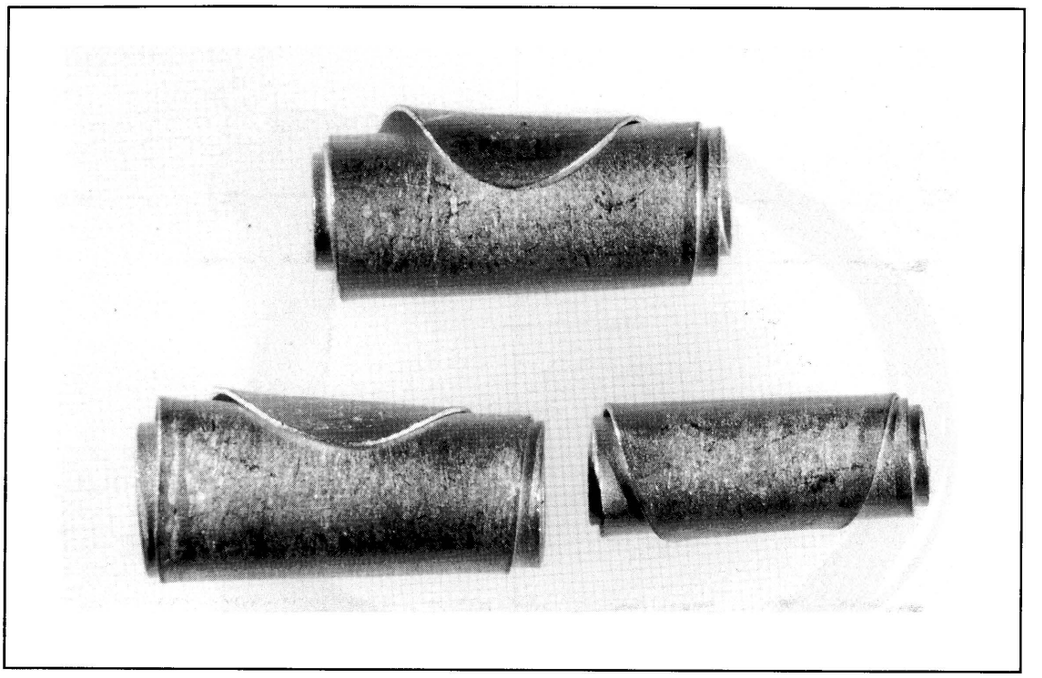

Figure 4.57[294]

A microscopic view of objects made of gold foil rolled to shape cylindrical ornaments[295]. They are from Mapungubwe Hill. They vary in length and diameter from 6,14mm x 2,27mm(min.) to 8,3mm x 3.32mm(max.). Possibly a form of cylindrical bead.

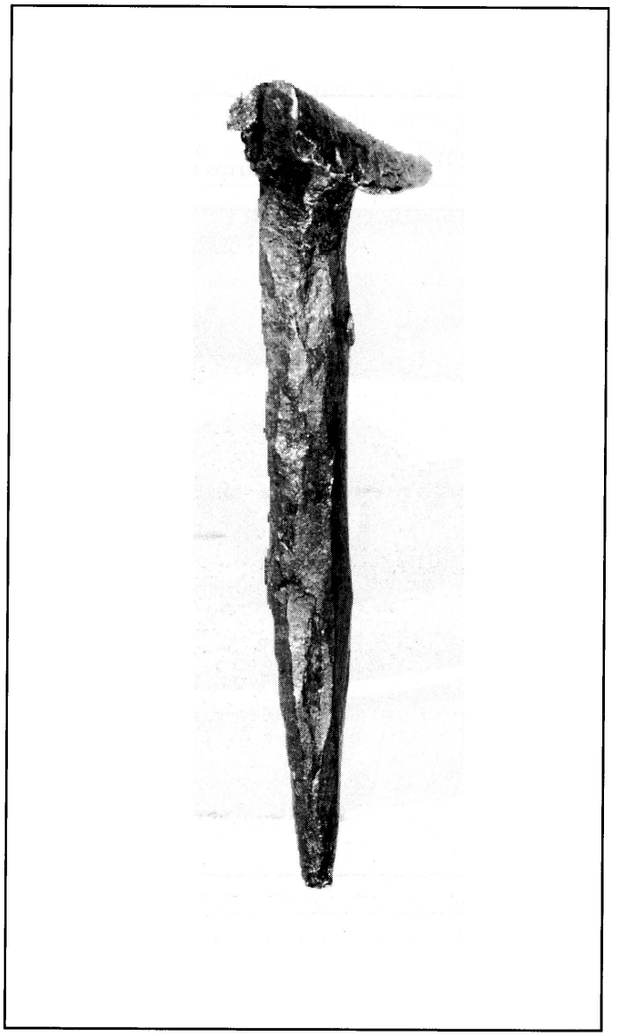

Figure 4.58[296]

A gold flat-headed pin or tack[297]. It was found in the grave referred to as the 'original gold burial' on Mapungubwe Hill. Shaft length: 20mm; diameter: 2mm.

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Figure 4.59[298]
A round-headed gold pin or tack[299]. From Mapungubwe Hill. Length: 9,4mm; width of head: 3,5mm; diameter of shaft: 1,65mm.

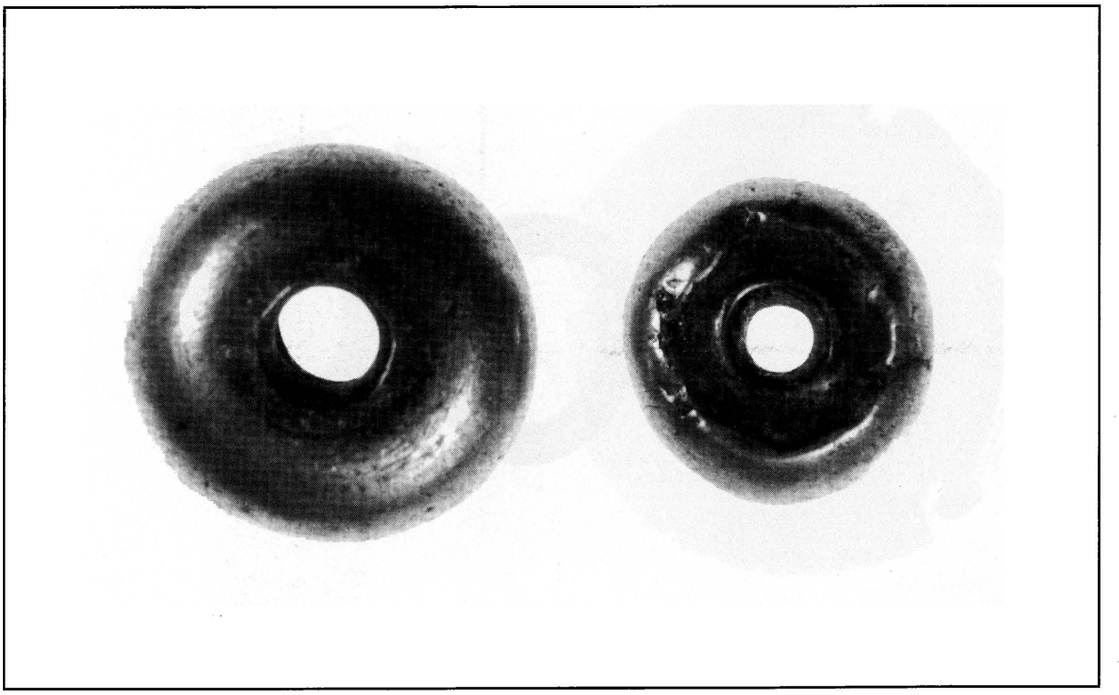

Figure 4.60[300]
Gold beads[301] made by means of a casting technique. From Mapungubwe Hill. The thickness varies from 3,5mm to 6,5mm and the diameter from 4,6mm to 8,6mm.

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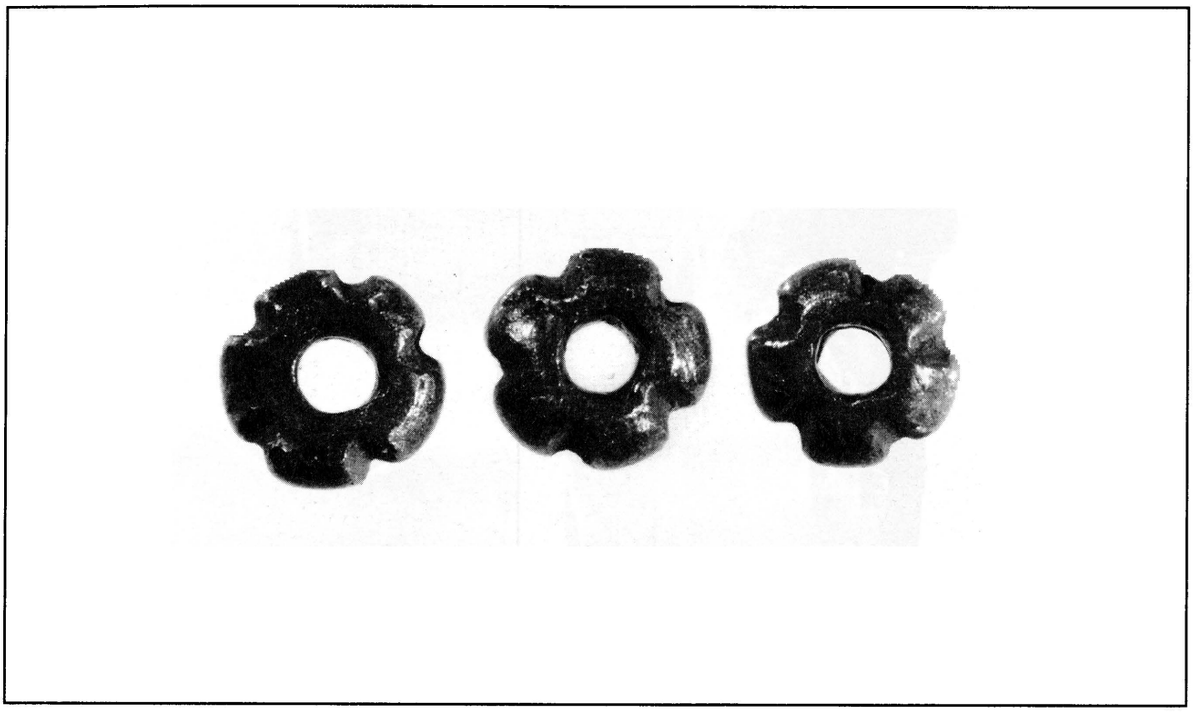

Figure 4.61[302]
Notched gold beads[303]. From Mapungubwe Hill. They vary in diameter from 2,0mm x 3,2mm to 2,35mm x 3,55mm.

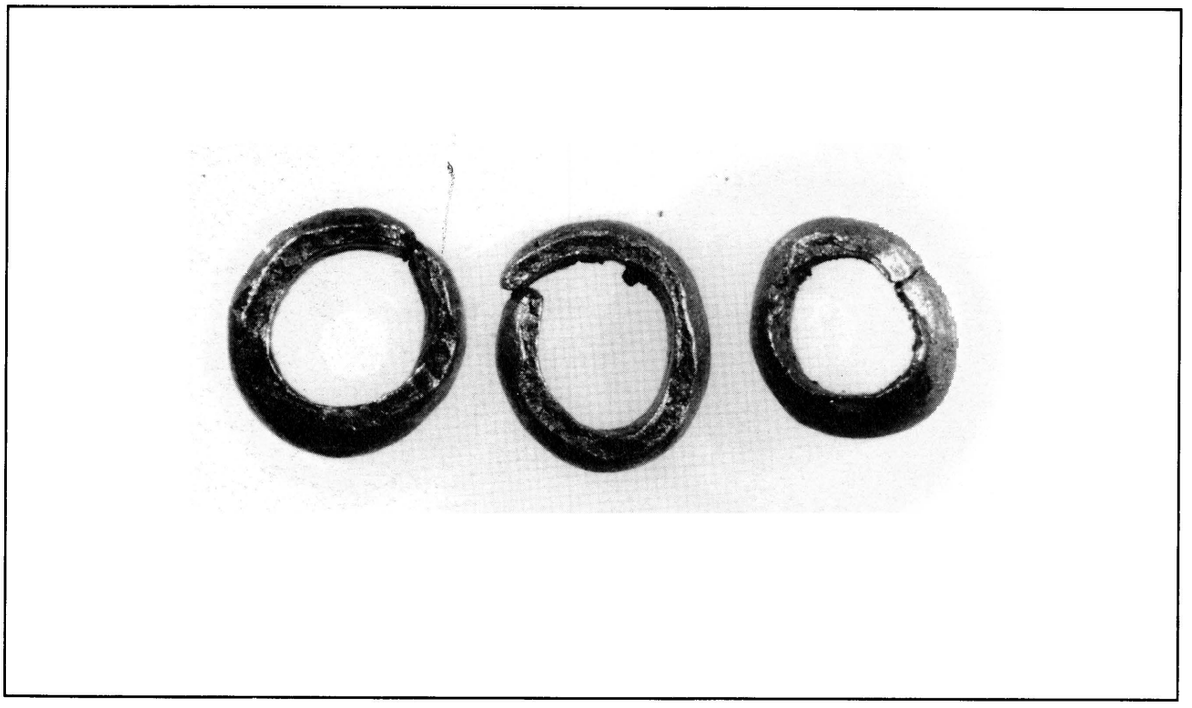

Figure 4.62[304]
Gold beads[305] made by bending thin gold rods until the ends meet. They are from Mapungubwe Hill. They vary in size from 1,5mm x 3,4mm to 1,15mm x 3,7mm.

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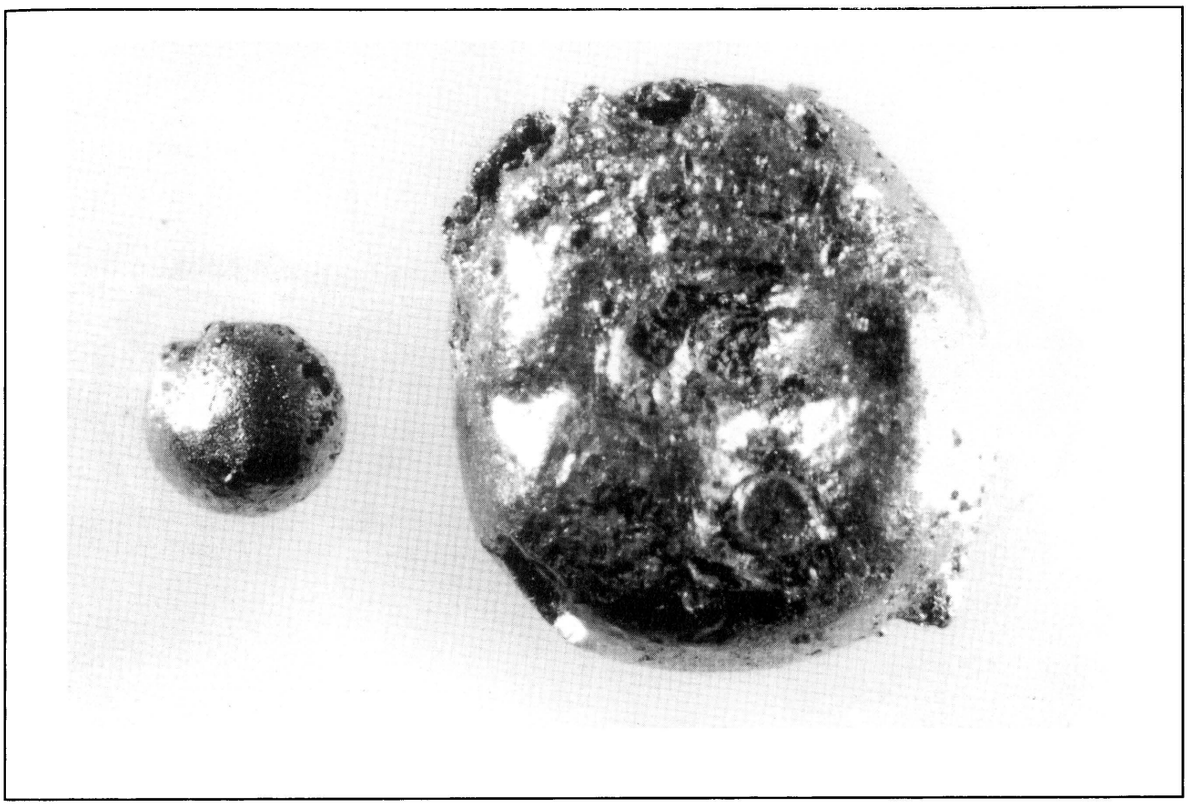

Figure 4.63[306]
Small gold globules[307]. They are from Mapungubwe Hill. They vary in diameter from 2mm to 7mm.

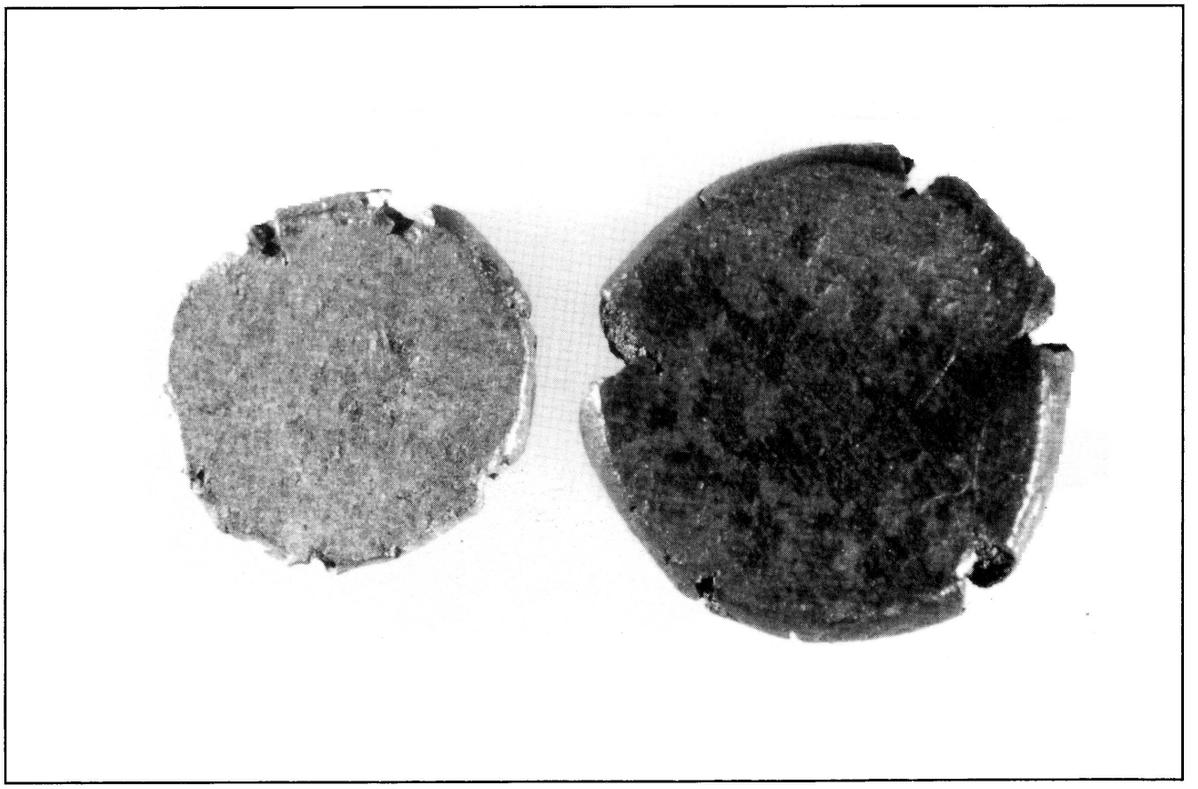

Figure 4.64[308]
Small gold discs[309], apparently produced by hammering. They are from Mapungubwe Hill. They vary in size from approximately 0,9mm x 5mm to 1,2mm x 6,1mm.

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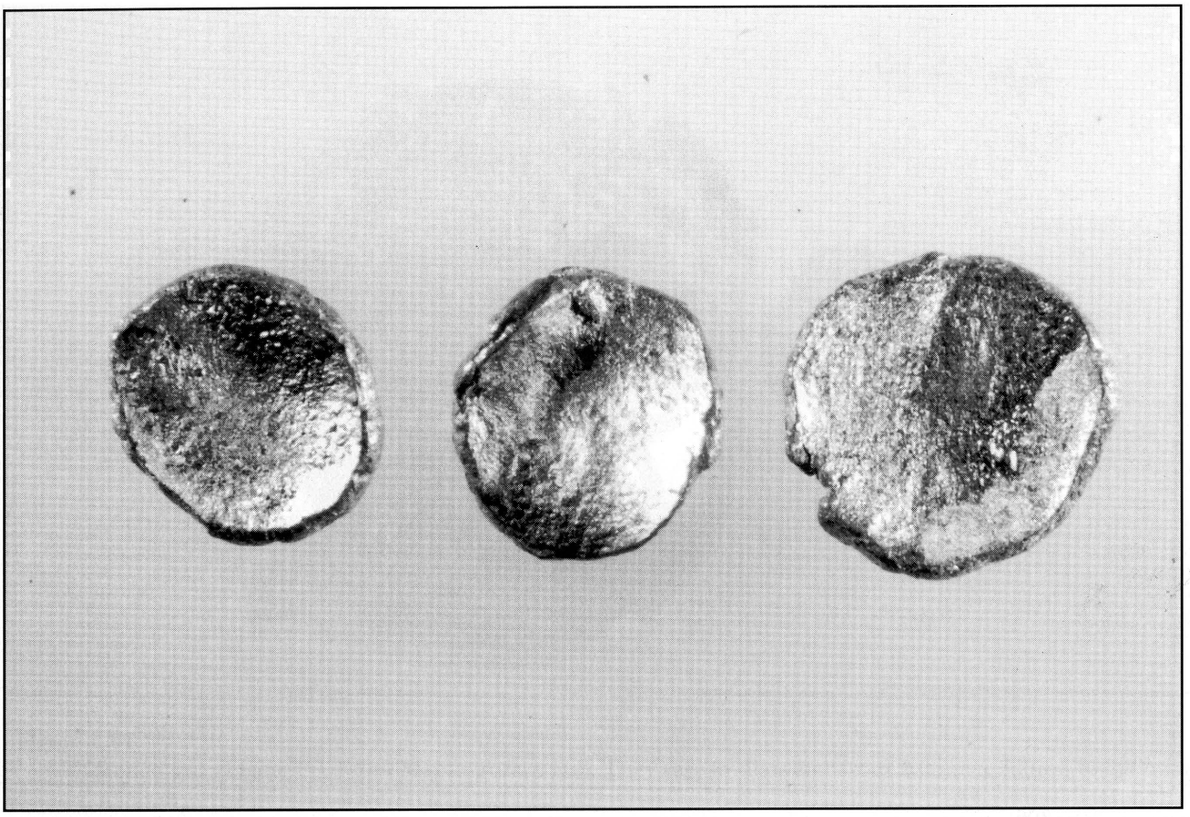

Figure 4.65[310]
Small gold discs[311], possibly produced by a casting process. They are from Mapungubwe Hill. They vary in size from approximately 0,3mm x 3,1mm and 0,3mm x 3,2mm to 0,3mm x 3,35mm.

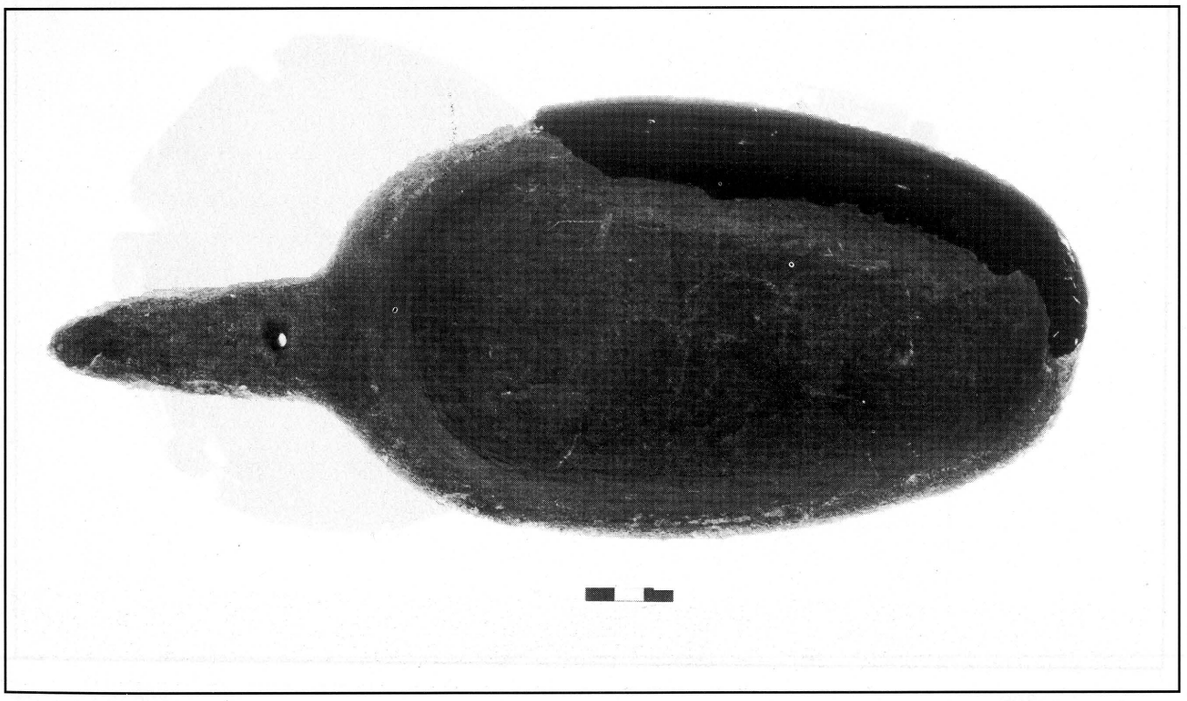

Figure 4.66[312]
A shallow, pan-shaped vessel made out of stone[313]. From Mapungubwe Hill.

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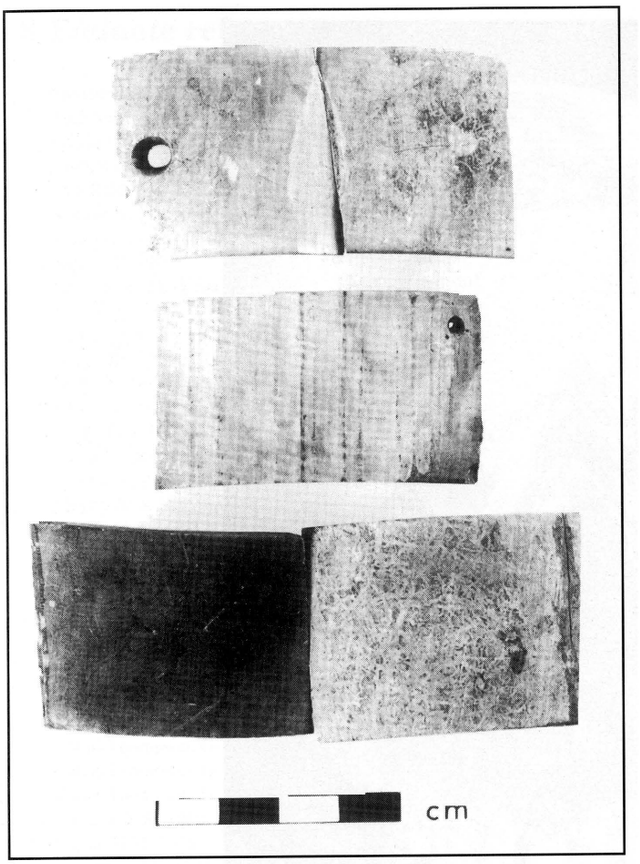

Figure 4.67[314]
Fragments of ivory bangles[315]. From K2.



Figure 4.68[316]
Arrow-heads[317] made of bone. Some had iron tips inserted into the front ends.

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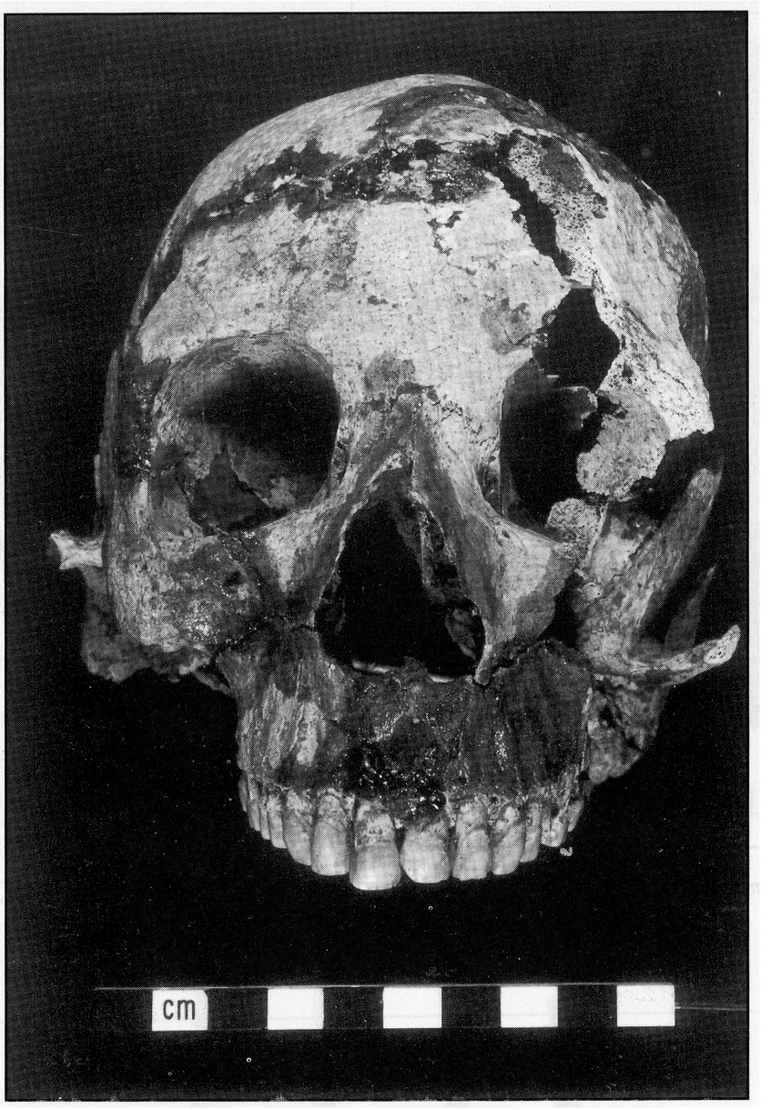

Figure 4.69[318]
The human skull[319] found buried in ceramic pot near the eastern perimeter of K2.

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5 CONCLUSIONS: THE EVIDENCE OF HUMANS, COMMUNITIES AND CULTURE IN STRATIFIED CONTEXT

In the bushveld environment of the central Limpopo River Valley, the stratified deposits of the settlement sites on Greefswald contain evidence of the physical remains of prehistoric farmers and their material possessions, the distinct phases of their settlement sequence, and a human subsistence history of more than a thousand years.

Evidence of the Early Iron Age

After the completion of the current research phase on Greefswald, there is still no stratigraphic evidence with regard to the Early Iron Age available from the Greefswald sites, except for the small number of potsherds which were found to belong to that period. Although the few Early Iron Age potsherds from the bottom layers at Mapungubwe have not yet been dated, similar pottery belonging to Early Iron Age sites some distance away, at Happy Rest near Louis Trichardt, have been dated to the period between 300 AD and 500 AD. The Early Iron Age settlement level on Mapungubwe, provisionally referred to as Settlement Phase I on Mapungubwe, is currently interpreted as a peripheral or temporary Early Iron Age settlement site which might be related to the Early Iron Age complex of the Soutpansberg mountain range to the south.

During the period between 800 AD to 1000 AD, subsistence farming and community life had developed to such an extent in the central Limpopo River Valley that a growing subsistence farming population established settlements in some areas, such as the major Zhizo site on the farm Schroda to the east of Mapungubwe. This should explain the presence of Zhizo pottery on the small site, recorded as Map 18, on Greefswald to the west of Mapungubwe. Although substantial subsistence farming communities were obviously present in this area during this period, Mapungubwe was uninhabited again for at least five centuries during the period from ca 500 AD to ca 1 000 AD.

The settlement complex of K2

Shortly after 1000 AD, the focus of communal subsistence farming in this part of the Limpopo Valley shifted to a new settlement site, known in the archaeological record as K2. The recent stratigraphic studies indicate that the large settlement deposits of K2 contain the remains of people in graves and their material possessions which belonged to an established subsistence farming culture, and which flourished there for almost two centuries, from ca 1030 AD till ca 1220 AD. The stratigraphic data also shows a relatively thin, contemporary settlement deposit at Mapungubwe, which contains cultural remains similar to those at K2, and which indicates that Mapungubwe was a satellite settlement in the K2 complex.

The village complex at K2 consisted of round, double-walled huts which must have served as houses, of medium-sized huts used for general storage and other purposes, and of small storage huts where agricultural products were stored, such as varieties of sorghum, *Pennisetum* and beans. According to the stratigraphic evidence, the K2 people repeatedly built their rondavel type houses and storage huts in the central settlement area on a slight ridge in the K2 valley, which eventually created a substantial, stratified deposit containing a sequence of gravel floors and hut wall rubble. This deposit contains cultural material similar to the material in the surrounding middens. The continuous use of this ridge for living purposes during the lengthy period of settlement also resulted in the massive proportions of the adjacent central midden.

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In the surrounding peripheral settlement areas on K2, traces of gravel floors and shallow midden deposits are spread across some of the slopes below the cliffs, and no prominent stratified successions of layers are visible here.

Contrary to some still current archaeological perceptions, recent stratigraphic studies indicated that the large 'central' cattle kraal was not located in the centre of a surrounding household complex, but that it was situated on the western side of the central hut complex, below the slight ridge on which the central living quarters had been built.

The later deposits of the central midden, which eventually covered the 'central' cattle kraal, clearly contain large numbers of discarded domesticated animal bone fragments. This clearly shows the continued domestication of cattle or small stock, but the later location of the animal kraal outside the settlement site of K2 has not yet been determined.

Deceased community members, mostly children, were buried on the living site, mostly in midden deposits, in a flexed, horizontal position. Ceramic vessels, sometimes apparently ritually broken, as well as glass beads, ostrich eggshell beads, cowrie seashells and animal body parts were used as burial objects in the graves. A stratigraphic mystery at K2 is the presence of isolated human skull and mandible remains in the western part of the central midden deposits overlying the kraal deposits. A human skull found in an upturned pot on the eastern perimeter of K2 is another unsolved mystery. An exceptionally large number of human skeletons in graves have so far been found on K2. Most of these are the remains of children. During the existence of K2 as a major settlement, an estimated average of eight generations of adult humans must eventually have been buried in graves over a period of two centuries, but the location of many of these graves remains unknown.

The material possessions of the inhabitants of K2 indicate that they belonged to an agro-pastoral, metalworking society. Their herds of domestic animals consisted of humped and humpless cattle. Their small stock included goats and sheep. They also possessed dogs which roamed around the huts and could have taken part in hunting activities.

Material possessions found in the deposits belonging to settlement Phase II indicate that the site inhabitants manufactured iron implements such as iron hoes for agricultural use and adzes for woodworking, iron and copper body ornaments such as rings and bracelets, large glass beads and beads made of ostrich eggshell and shells. They also made armbands of ivory and traded ivory with foreign traders in exchange for glass beads, apparently made in Egypt. The ivory artefacts and chips on K2 may be interpreted as evidence of ivory as an export commodity bartered by the K2 community for foreign trade glass beads. The East Coast cowrie shells in the K2 deposits could possibly have been acquired along the same trade routes. The significance of the human and animal figurines made by the K2 people is not yet known, and the figurines can only be assumed to be related to some form of symbolism, ritual or initiation ceremony.

The large size of K2 and the exceptionally vast deposits, the richness of cultural material including trade glass beads, and evidence of a successful mixed farming economy, has led to the conclusion that K2 is the settlement site of a high-ranking person or community in an established Iron Age society in a favourable farming environment.

The cultural material on the site represents a stable community with no apparent change in material culture visible during the long settlement period of almost two hundred years. No physical evidence has as yet been found to explain the termination of settlement on the site.

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The settlement structures which burnt down on the Southern Terrace and on the western end of Mapungubwe Hill by ca 1220 were huts similar to those on K2. This event is interpreted as the end of the K2 phase, or settlement Phase II, at Mapungubwe. The layers of burnt hut rubble resulting from this destructive fire sealed off the underlying cultural material such as hut floors and K2 pottery.

The rise of Mapungubwe

The burnt remains of the old village, which had existed at Mapungubwe during the heyday of K2, was soon covered by the vast settlement deposits of a fast-growing, new settlement which succeeded K2 at Mapungubwe. This indicates that Mapungubwe became the focal point of intensive settlement activities for the local subsistence farming society during the relatively short period from ca 1220 AD to ca 1250 AD. This period, which can be regarded as one average lifetime or generation of thirty years, is recorded as settlement Phase III.

The diet of this community, which consisted mainly of meat from their cattle and small stock, as well as cultivated grain, emphasises their basic economic activities as Iron Age subsistence farmers during settlement Phase III at Mapungubwe. The lifestyle of the Mapungubwe people is also reflected by their material possessions which included pottery, tools made of iron, and body ornaments including glass beads, beads and bangles made of materials such as iron, copper, gold and ostrich eggshell.

The sequence of vast settlement deposits belonging to Phase III contains the remains of numerous gravel floors and huts, some of which were destroyed by fire on at least three occasions. During the earliest part of this phase, the usual double-walled huts, medium-sized huts and small storage huts were built and surrounded with prominent gravel floors. The floors were made of red and light yellow mudstone gravel. Between the huts, mortar stones were mounted in small pits with small supporting stones. The pottery, most of which belongs to the K2 Vessel Series, indicates a definite form of cultural continuity from settlement Phase II into Phase III. However, the fragments of different pottery types, such as black shallow bowls and bellied pots, which are representative of the Mapungubwe Vessel Series, is a first indication of the appearance of new cultural elements. On the Southern Terrace, the stratified deposits belonging to this stratigraphic context were sealed off by burnt hut rubble. This part of settlement Phase III was recorded as settlement Phase IIIa.

The stratified deposits of Phase IIIa were quickly covered by a still continuing sequence of red and light yellow gravel floors, soil deposits, and the ash of cooking places. These new deposits are interpreted as settlement Phase IIIb. Prominent features in the deposits of Phase IIIb are hut remains, mortar stones mounted in small pits in living floors, mortar holes in the rock surfaces on Mapungubwe Hill, and small stone platforms which became popular household structures during this period. It is currently assumed that the stone platforms were used to support grain bins which had been made of perishable materials, and that large quantities of grain had daily been crushed in mortar holes for each household. In the upper layers of Phase IIIb, the floors of huts and of living surfaces were made of dolerite gravel, unlike the earlier use of mudstone gravel. The K2 Vessel Series of pottery appears to be present, but it appears to have been replaced to a large extent by the Mapungubwe Series.

On the Southern Terrace, the upper layers belonging to Phase IIIb are covered by a prominent layer of burnt hut rubble, indicating the end of a prominent settlement phase of intensive building activities. On the central part of Mapungubwe Hill, in the bottom layers directly on the rock surface of the hill, the presence of red gravel floors, as well as younger, overlying mustard yellow dolerite floors and traces of burnt hut rubble indicate that settlement extended to most of the surface of Mapungubwe Hill during settlement Phase IIIb.

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According to recent stratigraphic observations, at least some of the stone terrace walls on the Southern Terrace and Mapungubwe Hill were built on dolerite floors, indicating that the terrace walls belong to the end of settlement Phase IIIb or the beginning of Phase IV, when the settlement deposits on the central area of Mapungubwe Hill were still very thin. Numerous mortar holes and game board holes, as well as post holes and hut wall trenches in the rock surface of Mapungubwe Hill are further indications of efforts to utilize the hill summit intensively as a settlement site at this time. Therefore, the overall impression is that the summit of Mapungubwe Hill became a prominent settlement site towards the end of settlement Phase III, which is dated to ca 1250 AD. Phase IIIb is considered to represent the clearest form of the Mapungubwe culture in the Mapungubwe cultural sequence.

The most typical material aspects of the Mapungubwe culture are currently derived from combinations of aspects of settlement, pottery and burial customs. Typical aspects of settlement structures or site features are the round rondavel-type huts for living and household purposes, the sequence of numerous huts and gravel floors in the thick, stratified site deposits, which reflect unusually intensive settlement activities over a short period of time, combined with large numbers of mortar stones, stone platforms and some stone terrace walls. Typical aspects of settlement are also the choice of the summit of the hill as a settlement site and burial site, and the remarkable size of the site.

Artefacts which are typical of the Mapungubwe culture are mostly of outstanding technical and artistic quality. These are particularly the Mapungubwe Vessel Series of pottery, the conical pottery figurines and the large quantities of iron bangles and gold objects which adorned the human remains in the graves on Mapungubwe Hill. The inhabitants' custom of adorning themselves with imported glass beads from Egypt and home-made shell beads, as well as with beads and bangles made of iron, copper and gold, is indicated by the large numbers of these groups of artefacts in the deposits and particularly in the graves on Mapungubwe Hill. This is generally interpreted as a further indication that the material remains, together with the deep site deposits, represent the residence of a high ranking personality or community.

The stratigraphic context of the graves on Mapungubwe Hill was not recorded during the 1930's, but two of the skeletons then found at Mapungubwe have recently been dated to the period of settlement between 1200 AD and 1300 AD. The artefacts associated with the human skeletons appear to be typical of the Mapungubwe culture, with some exceptions such as the terra cotta bowl which must have been brought from elsewhere.

The end of Mapungubwe

During the period from ca 1250 AD to 1290 AD, settlement on Mapungubwe Hill and the Southern Terrace was continued, resulting in the development of substantial deposits of sandy soil and ash which covered the burnt hut remains belonging to the end of Phase IV, and eventually also the stone terrace walls. The continued presence of the Mapungubwe Vessel Series of pottery and glass bead types is evidence of the continuation of the settlement from Phase III into Phase IV. The human burials with Mapungubwe pottery vessels in these deposits is a further indication of cultural continuity at Mapungubwe into Phase IV.

On the other hand, the marked lack of thick gravel floors and previous types of hut foundation structures, as well as the eventual disuse of stone terrace walls, are indications of discontinuities in some settlement aspects at Mapungubwe. The presence of substantial numbers of San type arrowheads and linkshafts, and the appearance of the circular wall base structures of stone, combined with mortar or grinding stones, are indications in the deposits of settlement Phase IV of new cultural elements entering the Mapungubwe cultural sequence.

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Currently, the cultural remains in the top layers, which belong to the end of settlement Phase IV at Mapungubwe, cannot be defined as a definite part or phase of the Mapungubwe culture which so definitely manifested itself during the heyday of Mapungubwe during settlement Phase IIIb. At best, Phase IV may be defined as a partial continuation of the Mapungubwe culture in a curve of decline, and which included new material cultural elements taken over from the San and perhaps hitherto unfamiliar agricultural communities.

A likely explanation for the decline in building activities at Mapungubwe during the final phase of its settlement is that the socially high-ranking people in the Mapungubwe community were no longer present or a dominant factor at Mapungubwe, or that environmental conditions supporting the subsistence farming community of Mapungubwe had changed or deteriorated. This may then be seen as factors related to the decline of the settlement on Mapungubwe during a period of about forty years, a period which lasted for one or two generations, and the eventual abandonment of Mapungubwe by 1300 AD.

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6 THE FUTURE OF THE GREEFSWALD ARCHAEOLOGICAL PROJECT

The Greefswald Archaeological Project developed through several phases into a specialized interdisciplinary research and heritage management project. The human remains, settlement features and cultural artefacts found in large-scale excavations during Phase One of the project in the 1930's attracted world-wide interest and led to the later phases of the project. During the 1950's and 1960's, the small-scale stratigraphic studies of Phase Two of the Greefswald project exposed the highly detailed and intricate nature of the stratified site deposits, which contributed largely to the emphasis on stratigraphic research during Phase Three of the project. Since 1970, the interdisciplinary research of Phase Three of the Greefswald Archaeological Project of the University of Pretoria has involved specialists and post-graduate students of the University of Pretoria as well as from other institutions.

As a result of research Phase Three, substantial scientific data was made available to confirm evidence of the nature and history of the subsistence farming communities on Greefswald. These results are currently considered to be a significant contribution to the knowledge and an understanding of an important chapter in African history. Sophisticated modern research and management methodology is expected to be concentrated on remaining research objectives and future heritage management projects.

A new approach to the research, conservation and educational use of the archaeological sites and cultures of Greefswald is developing, namely to regard them as an irreplacable cultural resource, as an example of human existence in close relationship with the natural environment, and as evidence of a major event in the unfolding drama of African human history.

The day to day research and conservation activities in the ongoing project involve the recording and interpretation of the numerous individual site features, material possessions and physical remains of the humans who lived out their lives in communal existence. In a broader perspective, the archaeological sites on Greefswald and their cultural heritage are valued as sources of evidence of human interaction with the prehistoric natural environment, and as evidence of significant developments in the shaping of African society.

On the basis of the stratigraphy of the Greefswald sites, it can be said that the inhabitants of K2 and Mapungubwe depended on herding and agriculture as basic economic activities at a subsistence level, and on trade with prestigious products, such as glass beads from Egypt and celadon ware from China, as an economic activity related to products of social significance. These economic activities depended on the conditions and resources of the natural environment on the one hand, and on social customs and relationships as well as trade networks on the other hand.

The development of local as well as foreign trade networks needs to be studied further, including a reconstruction of trade routes, trade relationships and their influence on the local population in the central Limpopo River Valley. Population groups such as the Lemba may be used as a model for analogy.

The contemporary natural environment of the Iron Age communities as well as farming practices and changes in the natural environment during the past 1200 to 1500 years is a future research theme.

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Cultural phenomena such as the nature and significance of games, the use of spindle whorls, techniques used for the manufacturing of glass bead moulds and gold artefacts are to some extent still shrouded in mystery. The demography of the Iron Age society and its interaction with the changing natural environment are still unclear at present and need to be clarified by specialist and interdisciplinary research.

The immediate ancestry of the community of K2 before 1000 AD should be identified and investigated on a comparative basis. The northern settlement area on K2 and its deposits are still unknown and are expected to contain evidence with regard to the early years of the settlement at K2. The development of the central kraal during the early stages of the site history and the as yet unknown location of a new cattle kraal towards the final years of K2 require further investigation. The presence of human cranial remains and mandibles in a midden deposit overlying the western perimeter of the central kraal is still a haunting mystery, as is the human skull buried in a clay pot under the rock overhang near the eastern perimeter of K2.

At Mapungubwe, future main research concerns are the context and significance of the stone walls within the settlement sequence and settlement pattern, the nature and significance of the apparent post-stone wall phase in the settlement sequence, the relationship of Mapungubwe with nearby and related settlements, the social status of the site inhabitants, the possible relationship between Mapungubwe and historically known population groups, and an explanation or confirmation of what happened to the specific population group after the termination of their settlement at Mapungubwe.

The project should in future provide for specialist management programmes with regard to the conservation and the sustainable use of the sites, collections and archive records. A policy and legal framework for heritage management is currently being mobilized at national and local level in South Africa, and is already aimed at involving sites which specifically include Mapungubwe and K2, as well as heritage collections such as the Greefswald collection. Mapungubwe and its golden artefacts have already taken central positions in the public interest and in new history books to be used in formal school education as evidence of the African past and as symbols of indigenous achievements.

This interest should be extended to include the total history and cultural heritage of the region. Most of this cultural heritage lies in the small living sites of the ordinary people and the material evidence of everyday life. Their future is the responsibility of researchers, conservationists, teachers, cultural resource managers and of the public.

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8 APPENDICES

8.1 Greefswald: Regional vegetation species, listed by Acocks

Edited from Eloff, 1979

National tree number	Species
	A. Mopani veld
198	*Colophospermum mopane* (Mopani)
188	*Acacia tortilis* subsp. *heteracantha* (Haak-en-steek)
178	*Acacia nigrescens* (Knoppiesdoring)
	Other Acacia species
532	*Combretum apiculatum* (Rooibos, red bush willow)
360	*Sclerocarya caffra* (Marula)
190	*Dichrostachys cinerea* subsp. *africana*
	Cadaba termitaria
203	*Schotia capitata*
127	*Boscia foetida* subsp. *rehmanniana*
122	*Boscia albitrunca*
212	*Cassia abbreviata* subsp. *beareana*
	Commiphora spp.
	Grewia spp.
	Xmenia spp.
	Lycium spp.
550	*Terminalia prunioides* (Sterkbos)
467	*Adansonia digitata* (Baobab)
	B. Grasses
	Anthephora pubescens
	Brochiaria nigropedata
	Bothriochloa insculpta
	Eragrostis superba
	Eragrostis nindensis
	Schmidtia pappophoroides
	Heteropogon contortus
	Stipagrostis uniplumis
	Aristida congesta subsp. *barbicollis*
	Chloris roxburghiana
	TrichoZaena monachne
	Cenchrus ciliaris
	Panicum maximum
	Digitaria ariantha
	Neorautaneria sp.
	Enneapogon cenchroides

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C. Riverine Vegetation

172	*Acacia karroo* (Soetdoring)
188	*Acacia tortilis* subsp. *heteracantha* (Haak-en-steek)
176	*Acacia mellifera* subsp. *detinens*
164	*Acacia erubescens*
	Panicum maximum
127	*Boscia foetida* subsp. *rehmanniana*
122	*Boscia albitrunca*
285	*Commiphora pyrocanthoides*
550	*Terminalia prunioides* (Sterkbos)
226	*Mundelea sericea* (Blou-ertjies boom)

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8.2 Greefswald: A list of mammal species

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Edited from Eloff, 1979[1]

■ = Collected ▲ = Sighted 0 = faunal sample

Phylum: CHORDATA
Class: Mammalia

Order: Macroscelidae
■ *Elephantulus myurus* (Rock elephant shrew)

Order: Chiroptera
■ *Epomophorus wahlbergi* (Wahlberg's epauletted fruit bat)
■ *Epomophorus crypturus* (Peters's epauletted fruit bat)
■ *Nycteris thebaica* (Egyptian slit-faced bat)
■ *Rhinolophus hildebrandtii* (Hildebrandt's horseshoe bat)
■ *Rhinolophus darlingi* (Darling's horseshoe bat)

Order: Primates
■ *Otolemur crassicaudatus* (Thick-tailed bushbaby)
■ *Galago moholi* (South African lesser bushbaby)
0 ■ *Papio cynocephalus ursinus* (Chacma baboon)
■ *Cercopithecus aethiops* (Vervet monkey)

Order: Carnivora
▲ *Otocyon megalotis* (Bat-eared fox)
0 ▲ *Canis mesomelas* (Black-backed jackal)
▲ *Ichtonyx striatus* (Striped polecat)
▲ *Givettictis civetta* (Civet)
■ *Genetta tigrina* (Rusty spotted genet)
■ *Herpestes sanguinea* (Slender mongoose)
▲ *Mungos mungo* (Banded mongoose)
■ *Helogale parvula* (Dwarf mongoose)
▲ *Felis lybica* (African wild cat)
▲ *Felis serval* (Cerval)
▲ *Felis caracal* (Caracal)
▲ *Panthera pardus* (Leopard)
▲ *Panthera leo* (Lion)
▲ *Acinonyx jubatus* (Cheetah)

Order: Tubulidentata
▲ *Orycteropus afer* (Aardvark)

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[1]Eloff, J.F. 1979. Die kulture van Greefswald. Universiteit van Pretoria. Ongepubliseerde verslag aan die Raad vir Geestes-wetenskaplike Navorsing

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Order: Proboscidae
0 ▲ *Loxodonta africana* (Elephant)

Order: Hyracoidea
■ *Procavia capensis* (Rock hyrax or dassie)
■ *Heterohyrax brucei* (Yellow-spotted dassie)

Order: Perissodactyla
0 ▲ *Equus burchelli* (Burchell_s zebra)

Order: Artiodactyla
0 ▲ *Potamochoerus porcus* (Bushpig)
0 ▲ *Phacochoerus aethiopicus* (Warthog)
0 ▲ *Hippopotamus amphibius* (Hippopotamus)
0 ▲ *Sylvicapra grimmia* (Common duiker)
▲ *Raphicerus campestris* (Steenbok)
▲ *Raphicerus sharpei* (Sharpe's grysbok)
0 ▲ *Oreotragus oreotragus* (Klipspringer)
▲ *Redunca fulvorufula* (Mountain reedbuck)
▲ *Kobus elipsiprymnus* (Waterbuck)
0 ▲ *Aepyceros melampus* (Impala)
▲ *Connochaetes taurinus* (Blue wildebeest)
▲ *Tragelaphus scriptus* (Bushbuck)
▲ *Tragelaphus strepsiceros* (Kudu)
▲ *Taurotragus oryx* (Eland)

Order: Lagomorpha
■ *Lepus capensis* (Cape hare)
■ *Lepus saxtilis* (Scrub hare)
0 ■ *Pronolagus randensis* (Jameson's red rock rabbit)

Order: Rodentia
▲ *Hystrix africaeaustralis* (Cape porcupine)
■ *Thryonomus swinderianus* (Greater cane rat)
■ *Paraxerus cepapi* (Tree squirrel)
0 ■ *Pedetes capensis* (Springhare)
■ *Acomys spinosissimus* (Spiny mouse)
■ *Aethomys namaquensis* (Namaqua rock mouse)
0 ■ *Aethomys chrysophilus* (Red veld rat)
■ *Tatera leucogaster* (Bushveld gerbil)

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8.3 The Greefswald faunal remains: Conclusions and interpretations

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Edited from Eloff, 1979

The concept of an 'Iron Age' in southern Africa implies the existence of semi-sedentary groups who practised mixed farming, manufactured pottery and possessed a knowledge of metal working. These groups are generally accepted to have consisted of negroid peoples who spoke dialects belonging to the large group of Bantu languages.

Evidence for the cultivation of cereal crops (such as millet and sorghum) by these people is confirmed, and often exists in the form of carbonised grain. The preservation of faunal remains on the sites have contributed to a greater understanding of the animal aspect of mixed agriculture than we can hope for in the preservation of plant remains.

The faunal evidence from Greefswald indicates that the members of this community depended upon their herds and flocks for most of the meat in their diet; hunting, snaring and gathering supplemented this meat. In any faunal analysis, the investigator is dealing with a sample of bones. However, the pattern obtained from the range of excavations at Greefswald was so similar, and the excavations themselves were so extensive, that it is highly unlikely that abnormal situations are being described, e.g. deposits resulting from short-term ritual activities. If the limitations of sampling are borne in mind, it can still be stated with some justification that the Greefswald Iron Age economy depended on herding rather than hunting, gathering or fishing. Fishing made virtually no contribution to the diet whatsoever.

The study also clearly shows that economic and dietary interpretations of faunal remains involve two separate approaches, i.e. on the basis of activities and on the basis of meat weight contributions. A clear distinction must be made between the results obtained. The economic basis embraces the economic activities of a group; relatively small variations in this pattern of activities will lead to quite large variations in dietary patterns. On the basis of economic activities, all the archaeological occurrences at Greefswald except Ts 1 suggested 60% or more dependence on domestic animals; Ts 1 indicated 23% snaring and 17% gathering, with only 50% herding. [These figures are based on MNI, i.e. Minimum Numbers of Individuals, counts.] Thus the Ts 1 people were less dependent on their herds in terms of economic activities than were the other Greefswald groups. However, if the activities are translated into dietary contributions, a very different picture emerges - a picture in which all the occurrences, except Mk 1, yielded a figure of 96% to 98.7% meat from domesticated animals. In all cases, the meat contribution of other economic activities was negligible. The exception to this pattern was Mk 1 Phase 4, in which the meat contribution of domesticated animals dropped to 85.3%. The reason for this drop was the presence of four zebra in the sample - these equids contributed 12% of the meat of the recorded diet. It is thus clear that there is a great difference between the pattern of economic activity and the dietary pattern; in defining the overall economy of any site it is therefore essential to attempt to express the results of the various

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[1] Eloff, J.F. 1979. Die kulture van Greefswald. Universiteit van Pretoria. Ongepubliseerde verslag aan die Raad vir Geesteswetenskaplike Navorsing.
Asterisks indicate where sections were omitted, and footnotes have been added to indicate new knowledge gained since 1979.

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activities in terms of meat contribution before one can make a satisfactory statement regarding the economic basis of a group.

Gardner originally suggested that the K2 people subsisted on meat and milk, although they were averse to killing their cattle (Gardner 1963:27). The evidence of the present study indicates similar utilisation of large and small stock, with slightly more small stock being slaughtered than large stock. However, the quantity of stock represented suggests that the Greefswald people regarded their herds and flocks as a prime source of food; animals belonging to a wide range of ages were slaughtered in both groups. It is not known what proportion of the diet was contributed by plant foods; nevertheless, it appears to be justifiable to state that the Greefswald people utilised their stock regularly as a food source. It is possible either that the social significance of cattle has changed drastically, or that the Greefswald community reflects the high social status of the inhabitants of the site with access to stock belonging to other groups.

* * *

Detailed analysis of the faunal material showed that the Greefswald people kept sheep, goats, cattle, dogs [and other small livestock[2]]. Criteria established in Europe for separating sheep and goats were not utilised in the Greefswald analysis because the South African material available suggested that more variation existed between the species than was shown in the European publications. Before the published information is utilized, it needs to be checked against an adequate sample of specimens from unimproved South African breeds. However, goats were clearly identified at Greefswald on the basis of horn cores, and sheep on the basis of horn cores, hornless skulls and clay figurines. Two clay figurines of sheep were identified; Cooke (1957) identified a sheep figurine from Khami Waterworks, but this specimen had its tail preserved. One of the Greefswald figurines was tailless; this suggested the possible practice of tail docking at Greefswald, a practice which is sometimes believed to improve fertility and which is practised in East Africa. Sheep, goats and cattle were slaughtered when mature. The graph showing the age at death of sheep/goats has a strong peak at the 30 to 60 month phase; thus the animals were kept until they had bred several times. The cattle age classes show a much more even distribution, but again the peak occurs in a mature adult phase older than 42 months.

Examination of the goat horn cores from Greefswald shows that the length of the sinus cavity in the horn cores varied, with one group being about 50% hollow, the other being completely hollow. Research overseas has suggested that the size of the sinus cavity is related to the sex of the animal; on this basis, the Greefswald sample contained one female to each two male goats. This is a line of research which needs to be pursued.

Similar work on the cattle horn cores suggested sexual dimorphism in the structure of the horn cores. The results obtained were more variable than in the case of the goat sample; however, the sample was also very much smaller. Nevertheless, a tentative hypothesis is proposed suggesting that young animals have horn cores with a rough, porous outer structure, that cows have thin-walled, hollow horn cores and bulls robust-walled, hollow horn cores. On the basis of this proposition, the Greefswald horn cores appear to have come from two juvenile, three female, two male and one castrated animal. Once again this appears to be a potentially useful line of research.

* * *

[2] Medium birds have been identified and could include chickens. Knowledge gained since 1979 makes it possible to distinguish between different bird species, and it may be worthwhile to have the bird bones re-examined.

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Evidence for the presence of man's best friend, the dog, has been accumulating from a number of Iron Age sites. All available previously undescribed material was utilised for comparison with the well-preserved skull from Greefswald. Two important results were obtained from this part of the study. The first is the fact that the main European criterion of dog domestication (Length P4 = length Ml + M2) cannot be applied in the South African context. In African dogs, the length of P4 has been found to be equal to or greater than that of M1 + M2. Secondly, two types of Iron Age dogs were identified in the sample - a lightly built, relatively small breed, and a more robust and larger breed. At present, the first type is known from the Cape and South West Africa, while the second is found on sites in the Transvaal and Natal.

It has already been stated that Greefswald was an unusually large settlement with intensive occupation. There is another factor which sets Greefswald apart from other sites, and this is the extensive evidence for ivory working[3]. Evidence for the working of ivory is only found on K2, where it occurs as waste material and as finished articles. The working of ivory, and the likelihood of contact with the East Coast by means of the ivory trade, could have been the basis of specialisation which raised K2 above its contemporaries. Evidence for contact with the East Coast exists on all three components of the site in the form of trade beads; it seems likely that, by the time of the final occupation of the Hill, Greefswald was no longer directly involved in the ivory trade but could have been acting as a 'clearing house_ for another centre. This other centre could conceivably have been Zimbabwe, which began to develop as a large settlement by the end of the 12th and beginning of the 13th centuries AD (Huffman 1974). As Zimbabwe became involved in the gold trade, gold filtered back down the trade route to Greefswald, to appear only in the superficial levels on Mapungubwe Hill, thus marking the apex and the demise of a trading centre with a history stretching back to the beginning of the first millennium AD. On this basis, Greefswald could be expected to have enjoyed a high social status within its own cultural complex. This social structure would in itself attract people to Greefswald, and would also result in a concentration of domestic animals as a result of the concentration of people and stock and the use of stock as a form of tribute.

It is interesting to note that bone tools only occur in quantity on Mapungubwe Hill in the uppermost levels. These same levels were associated with an increased contribution to the diet by hunting. This might indicate a decreasing availability of domestic animals to the inhabitants as the importance of Greefswald declined with the rise to prominence of Zimbabwe.

The bone tool types encountered on the Hill occur in lesser quantities in the other two archaeological areas. Thus finely worked bone tools occur in the upper levels of all three components of the site, suggesting a cultural continuum through these levels, although the ivory is limited to K2.

The bone assemblage was carefully studied for evidence of human and animal damage and for taphonomic evidence. Evidence for butchering patterns is very clear, with chop, cut and chisel marks present on many of the bones. These enabled some reconstruction of butchering patterns to be undertaken. Two small specimens showed evidence of healed injuries. Rodent and carnivore damage was not very common on the site. The rodent damage was caused by small murids; only one example of porcupine gnawing was found. The carnivore damage could have been caused by domestic dogs as well as small carnivores, such as jackals, scavenging on the middens. Burning of bone occurred throughout the sample in small quantities, this could either have been the result of throwing the bones directly into the fire, or of throwing hot ash onto the middens, thus resulting in charring of the bone.

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[3] Work done at Kwagandaganda, an EIA site in KwaZulu/Natal, has also yielded large quantities of ivory chip and tusk samples (Beukes, personal commente 1998). This implies that possible trade in ivory was also present on at least one other site dating to 550 to 705 AD in South Africa.

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The horizontal distribution of bone within one excavation (K2/Ts 2) was found to vary between levels; it is not possible to explain this phenomenon unless a wide area is opened up. In the same way, the density of bone per cubic metre was found to vary considerably between excavations. Both aspects of bone distribution are undoubtedly related to activity areas on the site. A further interesting aspect of the bone assemblage which was noted was the occurrence of disarticulated but virtually complete skeletons or parts of skeletons. In the case of complete skeletons, some ritual was most likely involved; the portions of skeletons found were usually foot bones, suggesting that this portion of the animal was discarded while still articulated.

The preservation of bovid skeletal parts showed some variation which was largely due to the size of the animal involved. This information was compared to that available from Bushman camps; it is informative to see how small a proportion of a skeleton is preserved on a site after even a short period of time. In studying the degree of fragmentation of the sample, it was found that two degrees of fragmentation occurred. In the one case, the 2-4 cm size class was the largest size group in the bone flakes, while in the other case the 4-5 cm size class was the largest. There was no correlation between the degree of fragmentation of bone flakes with that of bovid post-cranial parts in the sample measured; nevertheless it is suggested that the larger class, i.e. bone flakes, can be used as an indicator of fragmentation on a site. This fragmentation is brought about by the breaking up of the bones for marrow, and is then subsequently affected by trampling and the depth of the deposit.

The study of the Greefswald faunal assemblage produced a wealth of detail on bone accumulations, and also opened up a number of avenues of research into specific problems. The study showed that the Greefswald communities utilised their domestic stock extensively[4]; this, combined with the size of the settlement, suggests a high social prestige site at the turn of the first millennium AD. The presence of ivory working may explain the reason for this high prestige.

If Greefswald is viewed against the wider background of the Iron Age of sub-Saharan Africa, it does appear to occupy an unusual position. A general hypothesis can be formulated which suggests that the place of domesticated animals in Iron Age economies has a long history, a history which extends back to groups of sedentary farmers who did not work iron. During the first millennium AD, two kinds of Iron Age economies emerged. Both included the cultivation of cereal crops; but one group of people remained heavily dependent on hunting as a source of food. The other group kept herds and flocks which appear to have increased in importance with the passage of time. It is possible that these domesticated animals were a stabilising factor within their economic and social structure. Larger centres developed which were the fore-runners of the Zimbabwe complex; these centres were able to utilise to a far greater extent the resources available in the form of cattle, sheep and goats, thus developing economies based very largely on herding. The present study suggests that an example of such a centre can be found south of the Limpopo, in the tri-partite settlement of the Greefswald complex. Greefswald can thus be regarded as a cultural 'capital' or settlement with a high social prestige in the Central Limpopo Valley during the first few centuries of the second millennium AD.

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[4] Since 1979, the study of domestic animals in Africa has received focused attention. However, it falls beyond the scope of this study to discuss all the details of the new research on cattle.

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8.4 Identification of terrestrial and fresh water mollusca from Greefswald

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Edited from Eloff, 1979

The following species of terrestrial and freshwater mollusca have been identified in the Greefswald collection. The information given here is quoted directly from correspondence with specialists, to whom I am very grateful for their willing help.

The data are divided according to species, with details on provenance and identifier. 'AVB' is A.C. van Bruggen of the Rijks University, Leyden; and 'CA' is C. Appleton, formerly of the Bilharzia Research Unit, Nelspruit, and now in Australia.

TERRESTRIAL MOLLUSCA

R2/Ts 1/1.	
(Identified by AVB)	*Succinea badia*
	Purpoides calaharicus
	Xerocerastus burchelli
	Curvella transvaalensis
	Archachatina
	Achatina immaculata
2/Ts2/1	*Purpoides calaharicus*
(Identified by AVB)	*Xerocerastus burchelli*
	Curvella transvaalensis
S2/Ts3/1	*Succinea badia*
(Identified by AVB)	*Purpoides calaharicus*
K2 (All trenches)	
(Identified by AVB)	*Succinea badia*
	Purpoides calaharicus
	Xerocerastus burchelli
	Curvella transvaalensis
	Opeas lineare
MST	
MST/K8	
	Purpoides calaharicus
	Xerocerastus burchelli
	Curvella transvaalensis

Dr van Bruggen's comments on the above include the following:

'As far as I can judge, all the above species still occur in the same area. The terrestrial snails reflect an arid climate and a kind of vegetation (i.e. mopane savannah) such as are found today on the same spot. These snails are not interesting from the point of view of human food.'

Concerning *Achatina immaculata,* he states: 'It is unlikely that achatinid species other than *Achatina immaculata* are found in the arid savannah environment (of Greefswald). In my opin-

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ion *A. immaculata* in this part of southern Africa is best adapted to local climatic conditions. In any case, no other species reaches such a size locally. Shells of large *Achatina* are known to have been used by the population as hippo scares in cultivated fields (pierced for suspension on lines) and as containers for all sorts of goods (eg. snuff) (when) they are stoppered with wads of moss or other material.'

FRESHWATER MOLLUSCA

K2/Ts 1/1	*Melanoides tuberculata* (AVB) *Unio caffer* (AVB)
K2/Ts 3/1/1134; Ts 3/3/1437; Ts 3/1563.	*Corbicula africana* (AVB);
Ts 3/2190; Ts 3/13; Ts 3/8/1872.	*Unio caffer* Krauss (AVB)
Ts 3/1; Ts 3/3/1438; Ts 3/14/2265.	*Aspatheria (Spathopsis) wahlbergi* (AVB);
K2/All tranches	*Melanoides tuberculata* (AVB) *Pyrgophysa forskallii*
MST/K8	*Melanoides tuberculata* (AVB) *Bulinus sp.* (AVB)
MST/K8/2(ii)/436, MST/K8/4/500; MST/K8/5/13; MST/K8/6/533;	
MST/K8/7/591	*Aspatheria (Spathopsis) wahlbergi* (AVB);
MST/K8/4/500	*Unio caffer* (CA)

Dr van Bruggen comments on the above material: '*Pyrgophysa forskalii* is a widely distributed freshwater snail. *Bulinus* sp. is a species of a widely distributed group of freshwater snails, most of which are bilharzia vectors.'

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8.5 Human skeletal material from K2

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Edited from Eloff, 1979

The human skeletal remains consist of the following:

1. K2 Grave Ts 5/1

Cranium and mandible; vertebrae and parts thereof, ribs and portions thereof; left clavicle; proximal part of left humerus, fragments of scapulae; phalanges and metacarpals; two epiphyses.

Deciduous teeth *in situ*: **maxillary** -	left incisors, canine and molars; right central incisor, canine and molars.
Permanent crowns *in situ*:	first molars.
Permanent crowns isolated:	right central incisor.
Deciduous teeth *in situ*: **mandible** -	right and left molars.
Deciduous teeth isolated:	left lateral incisor and canine.
Permanent crowns isolated:	incisors and left canine.
2 blue-green glass beads.	

The remains are those of a child of between 3 to 4 years of age. The cranial vault, base and facial skeleton have been crushed, fractured & distorted.

2. K2 Grave Ts 5/2

Cranium and right half of mandible; vertebrae and fragments thereof; ribs and fragments thereof; left clavicle and distal portion of right; right and left scapular fragments; humerus, left as well as proximal ulna and radius; femur left, tibia and fibula, fractured and fragmented; proximal portion of right tibia; fragmented right and left os coxae; phalanges.

Deciduous teeth *in situ*: **maxillary** -	incisors, canines, erupted first molars; second molar crowns present but as yet unerupted.
Permanent teeth *in situ*:	first molar crowns.
Deciduous teeth *in situ*: **mandible** -	first molar and second molar crown.
Permanent teeth *in situ*:	first molar crown.
Also ungulate incisor.	
29 red glass beads.	

The remains are those of a child of between 18 months to 2 years of age. The presence of the os coxae suggests a female child. The cranial vault, base and facial skeleton have been crushed and fractured but the distortion in this specimen is minimal.

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3. K2 B Grave Ts 2/2

Cranium and mandible as well as portions of the first three cervical vertebrae.
The cranial vault, base and facial skeleton are fractured, fragmented and somewhat distorted. The cranial vault has been reconstructed as far as fragmentation and distortion permitted.

Deciduous teeth isolated: all twenty deciduous teeth are present. The lower left central incisor duplicated crowns and root which have fused. Permanent crowns isolated: upper central incisors, lateral incisors, canines and first molars; lower central incisors and left first molar.
4 ostrich egg shell beads and 2 pot sherds.

The remains are those of a child of between 4 to 5 years of age.

4. K2 B Grave Ts 2/1

Fragments of cranial vault bones (9) and mandible (1); 3 phalanges and fragments thereof; 1 metacarpal bone; fragment of vertebra.

3 animal bones and 3 ungulate teeth.

The remains are those of a human infant but are too fragmented to allow an assessment of the age at death.

5. K2 Ts 5/2 Grave 1

Fragments of ribs and vertebrae; fragments of long bones, 2 tarsal bones and phalanges. 5 fragments of animal bone, a fragment of an ungulate tooth and a metal shaving.

The remains are those of a human infant but are too fragmented to allow an accurate assessment of the age at death.

6. K2 Ts 2/3 Grave 2

Very fragmented remains of vertebrae; ribs; os coxae; humerus, radius ulna, femur, tibia, fibula and epiphyses; carpal and tarsal bones, metacarpal, metatarsal bones and phalanges.

The remains are those of a child, probably female, of about 3 years of age.

7. K2 Ts 2/1 Grave 1

Cranium and mandible:	portions of right parietal, frontal, sphenoid and temporal bone; portions of the occipital, zygomatic and maxillary bones; 4 fragments of mandible.
Deciduous teeth isolated:	upper lateral incisors, canine and second molar; lower canines, (one with bifid crown), lower first and second molars.
Permanent teeth isolated:	crowns of upper central and lateral incisor; canines and first molars; lower first molar.

Fragments of ribs, vertebrae, os coxae, long bones and 7 phalanges. Also 5 glass beads (blue).

The remains are those of a child, probably female, of between 3 and 4 years of age.

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The human skeletal remains from the seven graves are those of children ranging in age from approximately 18 months to about 5 years. The cranial and mandibular features, where identifiable, are essentially Negroid in character, that is, the temporal square is expanded and the parietotemporal sutures rise above the level of pterion.

The frontal processes of the maxilla are directed laterally as well as anteriorly, and some degree of subnasal as well as total facial projection is apparent in Ts 5/2.

The foramen magnum appears to have been large, elongated and oval in shape; the mandibular notch of moderate depth and the crowns of the permanent teeth large. The cranial contour in norma verticalis appears to have been ovoid rather than pentagonoid, although distortion of the cranial vault bones makes it difficult to determine this parameter with accuracy. The orbits appear to have been hypsiconch.

8. Human juvenile skeleton from the K2 site

The individual was buried in the flexed position, lying on the right side. Scattered red glass and blue quartz beads were found amongst the bones. Two conus shells were found in the cervical region and copper bracelets around each ankle joint.

Both the cranial and the postcranial bones, particularly those of the right side of the vertebral column and of the pelvis, had been crushed, fragmented and, in part, eroded.

The cranial vault, base and mandible have, in part, been reconstructed, erosion and distortion made a complete reconstruction impossible. The facial skeleton is represented largely by the right and left maxillary and zygomatic bones. Erosion had destroyed the palatal portions of the maxillae, the alveolar margins, as well as much of the frontal processes of the maxillary bones. The nasal bones are also missing. The mandible is defective anteriorly, laterally and in the alveolar region.

Maxillary right teeth:	deciduous	canine and molars,
	permanent	incisors, first molar, crown of canine and second molar.
left:	deciduous	canine and first molar,
	permanent	medial incisor, crown of lateral incisor and second molar, root of first molar.
Mandibular right:	deciduous	first and second molars,
	permanent	lateral incisor, canine, premolar and second molar crowns as well as first molar tooth.
left:	deciduous	canine, first and second molars,
	permanent	lateral incisor, canine, premolar and second molar crowns, as well as first molar tooth.

The remains are those of a southern African Negroid juvenile individual, probably a female of between 8 to 9 years of age. The cranium and mandible correspond in their general features with the juvenile Negroid skull: the cranial vault is ovoid in norma verticalis and appears to be long, of moderate breadth and height (dolicho-orthocranial). Owing to distortion and damage, no reliable measurements could be made. The frontal curvature recedes gradually to the apex. The vault is convex, the highest point being behind the bregma. Laterally, the parietal bone above the asterion is slightly flattened and the parietotemporal suture appears

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to rise above the pterion. The mastoid process is small and the mastoid crest slight - these are juvenile characteristics. The tympanic ring shows a moderate degree of development. The posterior root of the zygoma is somewhat delicate and the supramastoid crest slight. On the inferior aspect of the temporal bone, the digastric fossa is shallow but not expanded posteriorly. The glenoid fossa is shallow, the articular eminence and post glenoid tubercle small. The hard palate has been destroyed by erosion. The permanent teeth, however, are large.

The ramus of the mandible is of moderate height and breadth, the mandibular notch is likewise of moderate depth with little bony buttressing between the coronoid and condyloid processes. The coronoid process is of moderate size with a slight anterior convexity, its apex being directed upwards and slightly backwards. The condyle is oval in shape and the angle of the mandible is slightly everted at the masseteric impression.

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8.6 A review of human skeletal remains from the Greefswald sites

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The Mapungubwe skeletal collection is unique in the sense that it represents the largest archaeologically derived skeletal sample from any Iron Age site in Southern Africa. These skeletons have been excavated since the 1930's by the University of Pretoria, and the collection now contains the remains of 108 individuals. Twelve of these individuals were discovered on Mapungubwe Hill itself, while the rest come from K2. Three so-called 'casual burials', at least one of which was associated with the settlement of the area, were also discovered in the vicinity. One of these three skeletons is now missing. Another yielded a later radiocarbon date. The third skeleton, consisting of a skull and vertebrae, was found in a typical Mapungubwe-style pot. The third skeleton is most probably contemporary with the occupation of the site.

Actually, more than 108 individuals were unearthed, but many of these skeletons were very fragmented and incomplete. From Mapungubwe Hill, for example, 27 or 28 individuals were excavated, of which only 12 are currently in the collection. A few skeletons from K2 have also disappeared over the years.

The history of the excavations

a) The Mapungubwe skeletons

Mr E.S.J. van Graan, a local farmer, and his party of treasure hunters discovered the first skeleton (A620, 'Original Gold Burial') on 1 January 1933. After the initial discovery, two more skeletons associated with golden objects were found on Mapungubwe. All the Mapungubwe remains are very fragmented and poorly preserved. They were found close to the surface, probably due to soil erosion, and were thus exposed to extensive weathering. For example, the 'Original Gold Burial', generally believed to have been a female, now consists of only a few pieces of skull bones. It is impossible to make any accurate diagnosis concerning the sex of the individual from these few remains.

When they were first discovered, all the visible bone material of these human remains was first painted repeatedly with hot gelatine and then left to dry, after which the soil around and under the skeleton was removed until it was lying only on a pillar of earth. Plaster of Paris was then poured in and the whole skeleton was removed from the pillar. As soon as this dried, the skeleton was packed and sent to Johannesburg (usually by rail). A. Galloway, an anatomist from the University of the Witwatersrand, was appointed to examine the skeletons.

b) The K2 skeletons

The skeletons in K2 were mainly discovered in the 1930's and 1940's, but new skeletons were constantly added to the collection, the last of these in 1995. The whole collection now contains the remains of 96 individuals.

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Burial patterns

With the exception of the skeletons with gold for which no data are available, most skeletons were discovered in a horizontally flexed position. Grave goods were often elaborate, and quite a few graves were so-called 'pot burials' where the individual was surrounded by upturned, broken pots. The two individuals from Mapungubwe who were buried with golden objects seem to have been interred in a vertically flexed position which is usually indicative of high social status.

Curious finds include one of the so-called 'casual burials' (UP 25), where the complete skull, mandible and articulated upper three cervical vertebrae were found inside a pot (Steyn 1995). Quite a few isolated human remains were also found, where, for example, only a skull or mandible were uncovered. The most recently discovered of these, found in 1995, comprised the skull of an adult female individual found in an ash deposit close to a hut floor. Whether these isolated remains are the result of post-depositional disturbance or a lack of proper burial needs to be investigated.

Previous research on skeletal remains

The initial examination of the skeletal remains from Mapungubwe was conducted by the Department of Anatomy of the University of the Witwatersrand and it was summarized in a report by Galloway (1937). A total of 24 individuals had been discovered by that stage, but only 11 could be used. All the material needed reconstruction. Since distortion was quite severe, little reliance could be placed on metrical features and therefore conclusions were mainly drawn from the non-metric characteristics.

Galloway's main objective was to determine whether these people were of the indigenous 'pre-Bantu' population, or part of the 'Bantu-speaking Negro population'. He described all these skeletons as 'Bush', 'Boskop' or 'Bush-Boskop' with or without negroid influence. He concluded that these people represented a homogeneous 'Bush-Boskop' race, with a few isolated negroid features. In the last chapter of his book, Fouché (1937) stated that the cultural and physical anthropologists crossed swords in this respect, since the cultural remains are probably of Sotho or Shona origin, and not of Khoisan origin as the human remains seem to suggest. In this light, it is clear why subsequent excavations have concentrated on locating human remains.

Caton-Thompson (1939) criticised Galloway's report because it was not accompanied by a grave-by-grave description. Furthermore the important information regarding the surroundings of the graves was not given - for example, whether the skeletal remains were found in a living area or not. Caton-Thompson regarded the term 'Bush-Boskop' as an unfortunate choice, since it may lead to confusion. She thought it unlikely that Khoisan people, with or without Boskop admixture, could have been responsible for the Mapungubwe culture, because this type of complex was not known in the tradition of these people.

Morant (1939) praised the thoroughness with which Galloway had conducted his research, but also expressed severe criticism of the conclusion reached. According to him, such incomplete, fragmentary material could only lead to tentative conclusions, while Galloway did not hesitate to make conclusive, far-reaching statements. Morant recommended that no importance should be attached to the apparent contradiction between the cultural and physical remains, since there is a lack of sufficient physical remains and interpretation is uncertain. More material was needed.

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In his study published in 1959, Galloway reported on 37 skeletons discovered at the K2 site between 1934 and 1936. It only comprised 34 items on the excavators' list, but represented at least 40 individuals. Some of these skeletons were very fragmented. He discussed descriptions of metrical and non-metrical features of the skull, teeth and post cranial skeleton in detail. Attention was also paid to some aspects of the growth of children. Galloway concluded his second study of the Mapungubwe remains by stating that these people represented 'a homogeneous Boskop-Bush population physically akin to the post-Boskop inhabitants of the coastal caves'. His interpretation of the physical remains, already stated in Mapungubwe Vol. I, thus remained unchanged.

When one examines Galloway's work critically, one must bear in mind the general state of development of physical anthropology at that time. All the later statistical methods for analysing metrical results were not yet available, and researchers had to rely heavily on non-metrical features. These results were then visually compared with those from other groups of skulls, which left room for many errors. Also, at that time, the features of the South African Negro were not yet well known, and it was only with the publication of De Villiers' book *The Skull of the South African Negro* (1968), that these characteristics were properly documented. Thus the comparative material was scant at that stage. Another possibility for errors arose from the fact that human variation was not well understood. The typological approach was followed, and anything deviating from the presupposed features was regarded as being the result of miscegenation. According to the typological approach, individuals were defined by their resemblance to the characteristics of an ideal individual who possessed all the important features of a particular group or race. This led to the establishment of a so-called 'Boskop' race, which was supposed to have been the ancestors of today's Khoisan people. This whole concept was later proven to be erroneous by Singer (1958) and others.

Gardner's volume only appeared in 1963, substantially delayed by World War II and the author's illness. Gardner supported Galloway's findings, which influenced his complex interpretations of the site. He regarded it as having been inhabited during some phases by Hottentots.

At this stage it was thus not at all clear who the inhabitants of K2 and Mapungubwe had been. With the development of sophisticated statistical methods, Rightmire (1970) re-evaluated some of the problematic Iron Age skeletal material from Southern Africa by means of multivariate analysis. In this method, the metrical features of one group of skulls are mathematically compared to those of other groups. Seven of the most complete adult skulls from K2 were included. On the basis of Rightmire's investigation these skulls were excluded from being Bushman or Hottentot with a 95% certainty. Rightmire found that they were Negroid and he concluded that previous descriptions, such as Bush-Boskopoid, were unsubstantiated. Rightmire also recommended that the description of skeletal material in terms of certain 'types' should be discarded in favour of a classification based on Negro, Hottentot and Bushman only.

In an appendix on skeletal material in Eloff (1979), De Villiers described the eight juvenile skeletons unearthed during later excavations. Since it is not advisable to use multivariate statistical comparisons on subadults, De Villiers had to rely mainly on the non-metrical features. She concluded that these children were negroid, and thus supported Rightmire's (1970) conclusions.

The typological approach of earlier researchers such as Galloway is no longer in use in modern physical anthropology. The full impact of human variation on the morphology of human populations is now better understood, and studies of population affinity use larger samples

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and sophisticated statistical methods. Research is now moving away from studies of population affinity, to investigations of lifestyle and population dynamics more and more.

Current research

More recent research focuses mainly upon lifestyle observations such as demography, health and diet (Steyn 1994). The objective of this kind of study is to gain insight into the day-to-day living in a prehistoric community, as well as to evaluate the community's general adaptation to the environment.

In a study of the palaeodemography of the K2 and Mapungubwe populations, an unusual age distribution was found, with an excess of juvenile individuals (Henneberg & Steyn 1994). This excess of juveniles might have been be due to a period of rapid population expansion or selective burial practices, where a disproportionate number of young individuals were buried in certain areas. It was proposed that this curious population distribution was indeed the result of population growth. When the life tables for K2 and Mapungubwe were corrected for a growth rate of 2.5% per annum, workable life tables were obtained. A population growth rate of 2.5% per year is commonly found in modern populations.

The general health of people from K2 seems to have been rather good (Steyn and Henneberg, 1995a), although life expectancy was relatively low: 18-19 years for newborns, while individuals who survived to 15 years could be expected to live another 20-25 years. About 42% of individuals survived to adulthood. These figures, however, are typical for prehistoric populations and correspond to what has been observed in Europe and the rest of the world.

The incidence of cribra orbitalia (indicative of chronic anaemia), enamel hypoplasia and transverse radio-opaque lines (both indicative of acute disease or malnutrition) and subperiosteal bone growth (indicative of chronic infections) were all relatively low. These are generalised signs of disease, observed on bones, that are used to give an overall impression of the state of health of prehistoric populations. It seems that anaemic conditions were scarce, while episodes of acute disease might have been more common. The first case of treponemal disease reported from Sub-Saharan Africa in pre-Columbian times came from K2 (Steyn & Henneberg 1995b).

The children from K2 seem to have been growing well, with long bone lengths at various ages, comparable to or longer than those of other groups (Steyn and Henneberg 1996). This would suggest adequate nutrition during the growing years. The cranial growth seems to be typical for the specific population, with the characteristic long, narrow heads of the K2 adults distinguishable from about 5 years of age (Steyn & Henneberg 1997).

The incidence of tooth decay is typical of people living mainly on cultured foodstuffs, with a high incidence of caries. Some 55% of all adults had at least one carious lesion in their mouths, while 18.3% of all permanent teeth were affected. Dental wear was not pronounced. A curious finding on teeth was that of purposeful dental mutilation, whereby the upper central incisors of some of the adults were filed to form a V-shaped gap.

Worldwide it has been found that the general health of people decreased once the shift was made from hunter-gathering to a settled, agricultural lifestyle. This, apparently, was not the case at K2 and Mapungubwe and it has been postulated that its great reliance upon herding somehow buffered the community against the periods of famine associated with agriculturalist existence (Steyn and Henneberg 1995).

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It seems that the pre-historic people living at K2 and Mapungubwe were quite capable of creating an affluent community, lived relatively healthy lives and were well adapted to their environment. This supports the archaeological data, where the massive deposits and elaborate cultural goods indicate a successful and prestigious community.

Conclusion

Currently the collection has a shortcoming as far as the quantity of well-preserved adult material is concerned, but future excavations may rectify this situation. More well-documented adult burials would add tremendously to the value of the research material.

It is clear that the Greefswald material has an important role to play in Southern African physical anthropology. Research can now be done with a whole range of new and more sophisticated techniques, including DNA extractions and analysis. Past interpretations must be seen in the context of the time and the general approach investigators used at the time. Human variability was not (and is still not!) well understood. New techniques have become available which should enable us to learn much more of prehistoric people.

The preservation and curation of this materials are of the utmost importance. In the past it was often thought that certain material 'had no scientific value', but that same material could now be used to gather further information. We must not be guilty of the same mistakes, and must leave well-preserved, well-documented material for the future.

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8.7 Some remarks on the Greefswald glass beads

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The main objective of the research on the Greefswald glass beads was to examine the internal and external trade and contact in southern Africa, AD 900-AD 1250, focusing on the Limpopo Basin, eastern Transvaal and Botswana, using glass trade beads excavated from archeological sites as source material. Glass beads are found at most Iron Age sites in southern Africa from ca AD 800-900 onward. The only local glass bead technology involves the remelting of small imported beads in clay moulds to make larger ones. All other beads were imported from external glass producing centres.

In this research, we addressed three aspects of research to investigate the identity and trade networks associated with internal and foreign contact: (1) the manufacturing origins of the beads, (2) who brought them to southern Africa, and (3) their distribution in the region. Glass material from Egypt, Palestine, Syria and Southeast Asia were used for comparison, and as possible source material.

All the beads were identified primarily on the basis of the method of manufacture (drawn, wound, blown, moulded) and appearance (colour, type, shape, clarity of the glass and size). Preliminary screening of each assemblage was done in the Archaeomaterials laboratory, University of Cape Town, using standardized analytical procedures. Visual observation also includes the use of a microscope and colour identification, standardised by means of Munsell color, gloss finish. Colour photography has been used extensively as well. Visual identification provides a very important starting point in the taxonomic analysis of glass beads.

Because of manufacturing and other similarities of the glass beads, however, classification based on appearance alone is not sufficient to provide precise information for comparative research. In order to extract as much information on the beads as possible, various other alternatives have to be examined. This not only increases our understanding and knowledge of the chemistry of glass beadmaking technology, but also helps identify possible origins of manufacture.

The most obvious approach is to determine the chemical composition of the glass, for which a variety of techniques is available. The relative amounts of major and minor elements present in the material may be characterised as being of a particular recipe; alternatively, the colouring trace elements may be uniquely diagnostic, or unintentional trace elements may be uniquely diagnostic, or unintentional trace elements may reveal the origin. In addition to the major and minor chemical components, rare earth elements (hereafter REE), and titanium and zirconium can provide useful information on the impurities in the silica (i.e. sand).

Various physical and chemical analytical methods were used, such as refractive index (RI), scanning electron microscopy (SEM), atomic absorption spectrometry (AAS), electron microprobe (EMPA), and laser ablation inductively coupled mass spectrometry (LA-ICP-MS) on selected samples. REE analysis has provided the best results by far. The combination of techniques represents a new approach to the study of glass beads in southern Africa.

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REE results show that a particular type of glass used to make type site beads in Fustat (now old Cairo), in Egypt, is the same as that used to make some of the beads found at southern African sites in the Limpopo valley and in the eastern Transvaal. They document the existence of a trade link with the Mediterranean via the Red Sea 1000 years ago. The results do not exclude the possibility that beads from other sources are also present. This trade connection coincided with the beginning of a critical sequence of events in the cultural history of southern Africa, which culminated in the formation of the incipient states at Mapungubwe (AD 1100-1250) and Great Zimbabwe (AD 1250-1450).

Information derived from this work promises to increase our knowledge of the origins of one of the most important components of material culture found in southern Africa; to document and broaden our understanding of the complexities involved in coastal maritime and inland trade; and to provide definitive 'fingerprints' for sourcing studies, using the REE components in the raw material used to make the beads.

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8.8 Some observations on the glass beads from K2 and Mapungubwe

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The glass beads from K2 and Mapungubwe have been examined and analysed by several people since 1933 but a complete overiew of all the beads excavated and the reports published about them has not been attempted. New material has been excavated using modern techniques, providing information not available earlier and new technology is being introduced to further aid in the identification of the beads.

Some of the areas of research which should be examined include:

1 Surveying all the glass beads found in related sites in the area - paying particular attention to any beads excavated in recent years. Particular items to watch out for include the presence of the transparent blue/green cane beads prevalent at K2 and during the early period at Mapungubwe. It appears that these are very rare in other sites. Since these were the beads used to manufacture the Garden Rollers it would be significant to learn whether these small imported beads and Garden Rollers appear together at other sites.

2 Attempting to locate a work area where the Garden Rollers could have been made. Are Garden Roller moulds found in any other sites? How was the glass compressed into the moulds and how were the ends of the Garden Rollers formed? (According to Van Riet Lowe (1955), the Garden Rollers may have been made by passing a metal wire with molten glass adhering to it through a pottery mould, and withdrawing the wire in such a way that the glass remains behind in the mould).

3 What could have contributed to the shift from the earlier blue/green transparent cane beads (Davison's M1 group) to the multicoloured Mapungubwe oblate series? Davison indicates that the latter appear in about 1100 AD. Is it possible to link this which was followed by the destruction of most glass-making industries in the Near East by about 1200 AD, or the end of glass bead making in Southeast Asia in about 1200 AD? If Saitowitz has discovered that Fustat glass matches the Mapungubwe oblate series glass - which appears to have continued at Mapungubwe until its abandonment in 1290 AD - what does this tell us in view of the fact that Fustat's glass industry was destroyed in 1168 AD?

Apart from noting the many questions that need to be examined, I have made some interesting observations in recent months. Some of the Garden Rollers appear to have been made with broken, and possibly even crushed beads, but others have been made from what appear to be whole beads. They have not been melted sufficiently to break down the boundaries between the beads, so the individual beads and their holes are visible under close examination.

The Van Riet Lowe bead collection at Wits has 4 unusual beads which reportedly came from skeletons. They are about the same length as the Garden Rollers but have not been formed in a mould. They appear to have been wound onto a mandrel or wire and are crude cylinders. At first glance they look as if they have been made from Indian red beads mixed with a bit of blue glass. On closer examination it is apparent that the interior of each bead is made only of blue glass and the Indian red is a not-entirely-successful outer layer. The University of Pretoria material includes a similar bead but without the Indian red layer. In more recent times cheap-

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er glass may have been used to form the core of a bead which is finished with an outer layer of more expensive glass - giving the appearance of a bead made from the more expensive material. Could this have been an attempt by K2's bead makers to produce a large Indian red bead? (One might assume that Indian red beads were more valuable than the blue/green variety since they were more scarce.)

There are also several large imported beads that have been discovered at the two sites which deserve some special research. Two are from Fustat, being typical pre-13th c. Islamic beads, and were discussed and pictured by Van Riet Lowe (1955) (one of these is in the Van Riet Lowe collection, the second may be, but I have not yet located it). The others are two (or more?) multiple wound beads. Similar examples have been found at Fustat, Kilwa, Zanzibar, Pemba and Great Zimbabwe.

It might not be possible to find answers to all these questions but a thorough examination of the glass beads imported into the region associated with Mapungubwe between the 8th or 9th century and the end of the 13th century could help to determine trade links and relations between the inhabitants of the region and the Indian Ocean trade network.

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Van Riet Lowe, C. 1955. 'The Glass Beads of Mapungubwe'. *Archaeological Survey*, Series No. IX. Pretoria: Department of Education, Arts and Science, Union of South Africa.

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8.9 Radiocarbon dating of the Iron Age sites on Greefswald

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Over the years, a large number of radiocarbon dates have been produced for the Iron Age sites on the farm Greefswald (22s12'S,29s22'E). The three dates obtained by Gardner in the late 1950's, viz. Y-135-17: 900 s 65 BP, Y-135-14: 510 s 60 BP and Y-135-9: 530 s 60 BP, tended to confuse the issue because they were not corrected for isotope fractionation. Two of them (nos 14 and 9) were run on 'charred millet' (Deevey *et al.* 1959) and the tropical cereals are known to produce apparent ages up to 240 years too young if not corrected (Vogel 1969). A case in point is sample Pta-372:

Pta-372 Charred cereal from Mapungubwe Hill:

Apparent C^{14} age	650s45 BP
Relative C^{13} content	-10.8‰
Correction for isotope fractionation	230 yrs
Corrected age	880s45 BP

In addition to the three early dates from the Yale laboratory, thirty-three further analyses are now available for the different sites of Bambandyanalo (K2) and Mapungubwe. With a set of this size an attempt can be made to establish the duration of the various occupation phases of the settlement. In doing this, it must be realized that outliers at both ends are to be expected.

The available radiocarbon dates are summarized in Table 8.9.1. A brief scrutiny of the results shows that for the three main sites, K2, Southern Terrace and Mapungubwe Hill, the ages range from 1030 BP to 720 BP, with only two exceptions. The four recent samples from the terrain in the north and east of the hill (N/E Terrain) have not yet been positively associated with the Mapungubwe tradition and are therefore excluded from the discussion. This age range places the main occupation on Greefswald at the beginning of what is classified as the Later Iron Age in South Africa.

In order to estimate the duration of the different cultural phases, the radiocarbon ages need to be converted to historical dates. This is done by using the calibration curve of Stuiver and Pearson (1993) as adapted for the southern hemisphere (Vogel *et al.* 1993). The resulting historical dates obtained from the (upgraded) calibration programme of Talma and Vogel (1993) are given in the last columns of Table 8.9.2 and plotted in Diagram 8.9.2.

(Note that during this period, radiocarbon dates are some 100 years older than the calibrated historic dates). The older samples fall into a period where the calibration curve gives rather indistinct dates and it is not possible to decide clearly whether the beginning of the occupation on K2 was AD 1030 or AD 1160. A more precise estimate for the initial occupation can, however, be derived by considering the dates for the immediately preceding cultural phase. Some radiocarbon dates for the Zhizo tradition in the region are listed in Table 8.9.2; the youngest ones being 1070 BP (Mawala Hill) and 1060 BP (Nali Hill). This strongly suggests that the beginning of the K2 occupation should fall around 1030 BP or AD 1030, after calibration.

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With regard to the rest of the dates, the end of occupation on K2 and the end of the K2 phase (Greefswald Phase II - Phase I being a thin scattering of Early Iron Age potsherds underlying Phase II in places) must be placed around AD 1220 while Phase III on the Southern Terrace and the Hill must lie between AD 1220 and ca AD 1250. Finally, Phase IV would then have lasted from ca AD 1250 to AD 1280 or 1290, after which the site was abandoned.

Some dates for other sites in the Limpopo valley that are said to contain Mapungubwe-type ceramics are also listed in Table 8.9.2. In this list there is some suggestion that the pottery tradition lasted beyond AD 1290 in the region (Kromdraai 2, La 2; Kromdraai 3, La 4 and Samaria). These younger dates would, however, have to be substantiated by further research.

After the demise of Mapungubwe, the centre of activity moved to Great Zimbabwe (Huffman & Vogel 1991). It is interesting to note, however, that the period of expansion there, Period III, is dated to ca AD 1250 (Table 8.9.3, Diagram 8.9.1). No walls were constructed during this period. The construction of extensive stone walling only started during Period IVa, about AD 1300 (Class P walls) and lasted through Period IVb (P and Q walls) which came to an end when the Hill Ruin was abandoned in ca AD 1430. Unfortunately there is only one radiocarbon date for the final (IVc) Period of the Zimbabwe culture (sample no 20 in Table 8.9.3) and this suggests a late 15th or 16th century date, thus overlapping with the occupation at Khami.

Finally, some radiocarbon samples collected from different middens in the area to the north and east of Mapungubwe Hill (nos 34-37 in Table 8.9.1) give much younger dates than those for Mapungubwe itself, suggesting later occupation of the vicinity by as yet unidentified communities.

To summarise: The different Phases of occupation on Greefswald can now be given as follows:

Phase II (K2)	AD 1030 - AD 1220
Phase III (Mapungubwe)	AD 1220 - ca AD 1250
Phase IV (Mapungubwe)	ca AD 1250 - AD 1290

Diagram 8.9.1. Calibrated radiocarbon dates for the Great Zimbabwe ruins. The numbers on the abscissa refer to the sample numbering in Table 8.9.3. Samples pertaining to Periods III, IVa and IVb are indicated. The construction of stone walling commenced during Period IVa after ca AD 1300, the P and R style walls, while Q style walling only appeared during Period IVb at some undeterminable date in the 14th century.

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Table 8.9.1. - Radiocarbon dates for the Iron Age Sites on Greefswald

NO	POSITION	DEPTH (cm)	PHASE	MATERIAL	PTA	AGE BP	ERR	CALIBRATED DATE AD	1 SIGMA RANGES AD
K2 SITE									
1	Ts1,La2,SqA4		II	Bone	6064	880	50	1220	1173 - 1260
2	Ts1,La2	30	II	Charcoal	1214	980	40	1046 or 1103 or 1114	1029 - 1167
3	Ts2,LA2,SqD4	23	II	Bone	6576	1010	50	1033	1015 - 1063 or 1074 - 1157
4	Ts3,La24	460	II	Charcoal	1226	950	50	1163	1037 - 1205
5	Ts3,La15	280	II	Charcoal	1157	950	40	1163	1041 - 1192
6	Ts3,La15	280	II	Charcoal	1215	970	50	1052 or 1087 or 1150	1029 - 1180
7	Ts3,La6	150	II	Bone	2051	970	40	1052 or 1087 or 1150	1033 - 1173
8	Ts4,La4	45	II	Bone	6073	920	50	1180	1152 - 1226 or 1052 - 1087
9	Ts6,La7,SqA2	53	II	Bone	6080	940	50	1167	1041 - 1213
10	Tg68,LaII	160	II	Charcoal	0307	930	45	1173	1114 - 1213 or 1046 - 1100
11	Tg68,La8b	120	II	Charcoal	0306	850	50	1243	1205 - 1274
12	Tg68,La6	90	II	Charcoal	0305	890	50	1213	1167 - 1252
13	Tg68mLa3	50	II	Charcoal	0304	880	40	1220	1180 - 1252
14	Ts5,La3,SqA5	30-45		Bone	6570	760	50	1286	1269 - 1299
15	Ts5,Skltn UP24	30		HsBone	6680	1250	40	825 or 857	779 - 883
SOUTHERN TERRACE									
16	SqF4,La10	204	II	Charcoal	2024	1030	40	1026	1011 - 1041
17	SqK8,La16	292	II	Charcoal	0768	1030	50	1026	1007 - 1046
18	SqH5,la6iii	220	II	Charcoal	2023	930	40	1173	1152 - 1213 or 1052 - 1087
19	SqK8,La15	285	III	Charcoal	1156	860	40	1234	1205 - 1265
20	SqE2,La10	188	III	Charcoal	0439	840	50	1252	1213 - 1277
21	SqE2,La7iii	147	III	Charcoal	0438	820	60	1265	1220 - 1286
22	SqE2,La5	95	III	Charcoal	0437	810	45	1270	1234 - 1284
23	SqK8,La3	88	IV	Charcoal	0766	860	40	1234	1205 - 1265
24	SqK8,La2ii	64	IV	Charcoal	0752	790	50	1277	1252 - 1292
25	SqK8,La1iii	28	IV	Charcoal	1209	770	50	1284	1265 - 1297
26	SqH5,La2ii	30	IV	Charcoal	1138	590	50	1414	1396 - 1434
MAPUNGUBWE HILL									
27	Bloci6/4	150		Cereal	0372	880	45	1220	1173 - 1252
28	Mk1,La11	165	II	Charcoal	1158	850	50	1243	1205 - 1274
29	Mk1,La11	155	II	Charcoal	1159	840	40	1252	1220 - 1274
30	Mk3,La3,A4	35	IV	Charcoal	1145	880	40	1220	1180 - 1252
31	Mk4,	60-75		Charcoal	6692	720	40	1297	1286 - 1308 or 1363 - 1377
32	Skltn A621		IV	HsBone	3489	850	40	1243	1213 - 1270
33	Skltn A622		IV	HsBone	3480	770	40	1284	1270 - 1294
N/E TERRAIN									
34	Map10,TS1,La2	23		Bone	6562	360	20	1582 or 1547 or 1635	1519 - 1572 or 1628 - 1642
35	Map4,TS1,La3	38		Bone	6577	7520	30	1289	1280 - 1297
36	Map12,Ts2,La2	15-30		Bone	6573	640	50	1396	1305 - 1411
37	Map12,Ts1La2	15-30		Bone	6575	280	50	1660	1645 - 1674 or 1775 - 1798
38	Skltn A1701			HsBone	6097	120	60	1893 or 1911	1813 - 1939 or 1689 - 1733

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Table 8.9.2. - Radiocarbon dates relevant to the Greefswald Iron Age Sites

NO	SITE	POSITION	TRADI-TION	MATERIAL	PTA	AGE AD	ERR	CALIBRATED DATE AD	1 SIGMA RANGES AD
K2 SITE									
1	Norfolk Rd, Bul.	Test1,47 cm	Zhiso, a	Charcoal	3299	1180	50	895	875 - 980
2	Denver Farm	Jit F1.25 cm	Zhiso, a	Charcoal	3732	1130	40	980	953 - 1002 or 901 - 920
3	Mawala Hill	Test4.65 cm	Zhiso, b	Charcoal	3308	1070	45	1011	986 - 1026
4	Mawala Hill	Test 4.45 cm	Zhiso, b	Charcoal	3307	110	50	997	968 - 1019
5	Mawala Hill	Test 4,25 cm	Zhiso, b	Charcoal	3305	1080	50	1007	980 - 1026
6	Nali Hill	Test1,19 cm	Zhiso, b	Charcoal	3304	1060	50	1015	991 - 1033
SOUTHERN TERRACE									
7	Schroda	Tr5,SqC1,86 cm	Zhiso	Charcoal	1967	1160	50	961	883 - 991
8	Schroda	Tr5,SqF1,66 cm	Zhiso	Charcoal	1819	1110	50	991	961 - 1015
9	Pont Drift	Tr2,La14,175 cm	Zhiso	Charcoal	1959	1140	50	974	891 - 112
10	Pont Drift	Tr1,La5,45cm	Zhiso	Charcoal	1961	1110	50	991	961 - 1015
11	Glennel	SqC25,23 cm	Zh/K2	Charcoal	1817	1120	60	986	895 - 1-15
12	Glennel	SqH15,42 cm	K2/Zh	Charcoal	1957	1010	40	1033	1019 - 1052 or 1087 - 1152
13	Port Drift	Tr2,La4,40 cm	K2	Charcoal	1818	840	50	1252	1213 - 1277
14	Stayt Farm	LA4,40 cm	Mpgwe	Bone	4363	820	50	1264	1227 - 1283
15	Stayt Farm	La2,20 cm	Mpgwe	Charcoal	4328	910	45	1192	1157 - 1235 or 1063 - 1074
16	Skutwater	Spit 8,78 cm	Mpgwe	Charcoal	3715	820	40	1264	1227 - 1280
17	Skutwater	Spit 4,34 cm	Mpgwe	Seeds	3734	830	50	1273	1252 - 1286
18	Kromdraai 2	La 8,20 cm	Mpgwe	Bone	6763	810	50	1269	1235 - 1286
19	Kromdraai 2	La4,75 cm	Mpgwe	Bone	6760	690	20	1305	1291 - 1396
20	Kromdraai 2	la2,30 cm	Mpgwe	Bone	6755	625	40	1399	1393 - 1405 or 1323 - 1338
21	Ntanye, W Nichol	Sq2A1,20 cm	Mpgwe	Charcoal	0944	720	40	1302	1292 - 1315 or 1347 - 1389
22	Kromdraai 3	La4,Sq3,35 cm	Mpgwe	Bone	6578	580	50	1414	1402 - 1427
23	Samaria Farm	La7,SqJ,22 cm	Mpgwe	Bone	6579	510	50	1437	1421 - 1456

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Table 8.9.3. - Radiocarbon dates for Great Zimbabwe

NO	SITE	POSITION	PRIOD	MATERIAL	PTA	AGE AD	ERR	CALIBRATED DATE AD	1 SIGMA RANGES AD
1	Hill Ruin	TestV!,Le3	Ib	Charcoal	1983	1280	40	784	763 - 869 or 716 - 737
2	Cleft Rock Cave			Pole	0816	940	50	1167	1041- 1213
3	Hill Ruin	Test1,Le12	III	Charcoal	1984	850	40	1243	1213 - 1270
4	Gr Enclosure	Post A114	III	Post	0803	830	50	1260	1220 - 1280
5	Hill ruin	TestV	III	Charcoal	2705	760	50	1286	1270 - 1299
6	Gr Enclosure	Trench8,La6	III	Charcoal	2694	700	40	1302	1292 - 1315 or 1347 - 1386
7	Gr Enclosure	Trench5/6?,La9	IVa	Charcoal	2693	710	45	1299	1286 - 1311 or 1353 - 1385
8	Hill Ruin	Test1,Le11,F1 i	IVa	Charcoal	1985	690	45	1305	1292 - 1321 or 1340 - 1393
9	Hill Ruin	Test1,La11,F1h1	IVa	Seeds	2704	670	45	1311 or 1353 or 1385	1297 - 1399
10	Hill Ruin	TestV1	IVa	Charcoal	0745	670	30	1311 or 1353 or 1385	1302 - 1396
11	Gr Enclosure	Wall 6,Lintel 1	IVb	Post	0792	650	50	1321 or 1340 or 1393	1302 - 1408
12	Gr Enclosure	Wall 6,Lintel 2	IVb	Post	1594	640	40	1396	1379 - 1408 or 1308 - 1361
13	Hill Ruin	Pasage,Lintel	IVb	Post	1192	640	40	1396	1379 - 1408 or 1308 - 1361
14	Hill Ruin	Test1,Le9,F1 g	IVb	Charcoal	1986	640	45	1396	1305 - 1408
15	Peasant Area	AReaZ1,House 35	IVb	Charcoal	1208	600	50	1408	1393 - 1424 or 1321 - 1340
16	Hill Ruin	S.slope midden	IVb	Charcoal	5970	590	50	1411	1396 - 1427
17	Hill Ruin	Test1,La7	IVb	Post	2706	580	50	1414	1399 - 1430
18	Peasant Area	AreaZ4, Midden1	IVb	Charcoal	2423	550	50	1424	1408 - 1440
19	Nemanwa Ruin	Trench3,Le8	IVb	Charcoal	2429	540	40	1427	1414 - 1440
20	Peasant Area	AreaZ1,House 10	IVc	Charcoal	2711	370	50	1524 or 1559 or 1632	1484 - 1648
21	Nemanwa Ruin	Trench2,base	III	Iron hoe	2594	770	130	1284	1205 - 1396

Diagram 8.9.1 - Zimbabwe

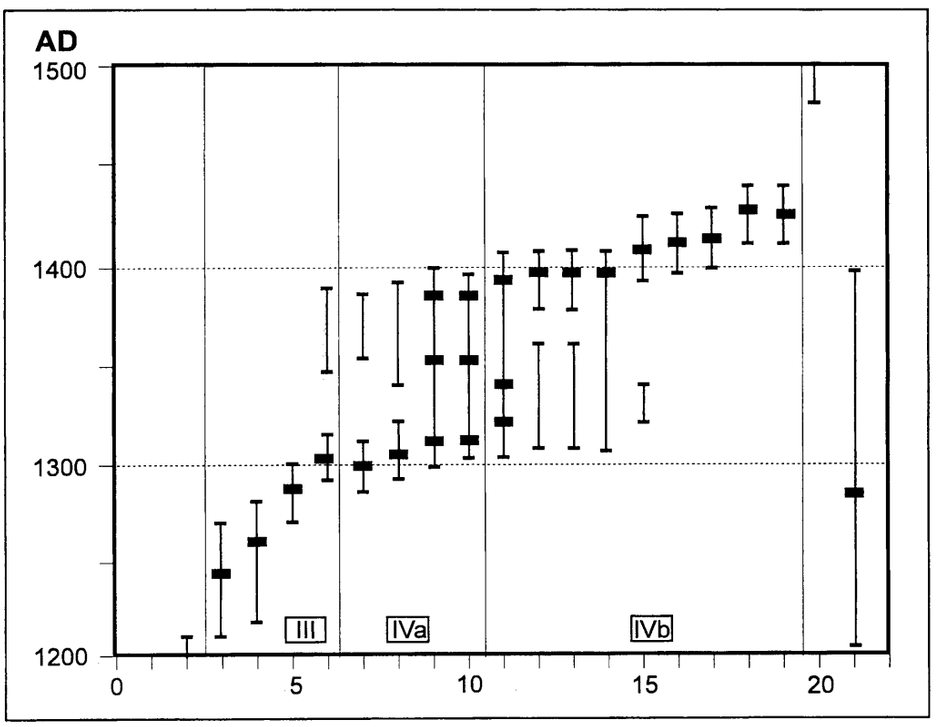

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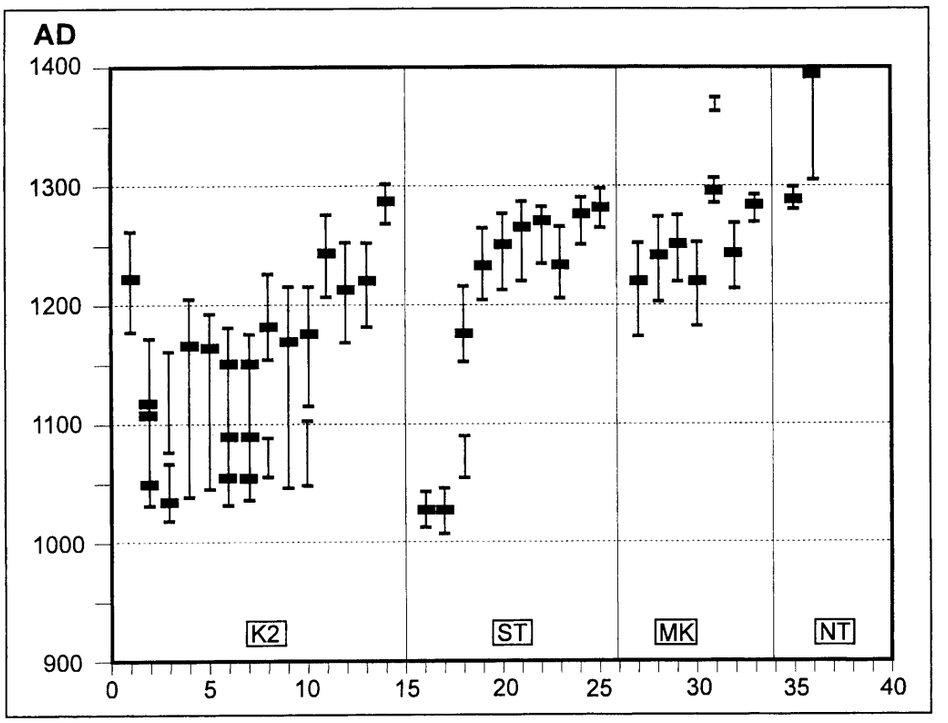
Diagram 8.9.2 - Greefswald



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8.10 A list of surveyor's reference points and co-ordinates

P.W. Labuschagne
Area Manager
Hartbeespoort Government Water Sceme
Private Bag X352
Hartbeespoort
0216

Reference Peg No	Reference Points Site No.	Co-ordinates Y	X	Z
GR 1	(Map 4)	-40194.309	56823.357	549.839
GR 2	(UP camp site)			
GR 3				
GR 4	(Map 5)	-40254.916	56628.588	550.650
GR 5	(Map 6)	-39513.876	56942.462	519.415
GR 6	(Map 1, M.S.T.)			
GR 7				
GR 8				
GR 9				
GR 10	(Map 1)	-40144.258	57033.399	579.501
GR 11	(Map 1)	-40098.082	57014.413	578.888
GR 12	(Map 1)			
GR 13	(Map 4)			
GR 14	(Map 10)	-40911.411	57254.663	272.854
GR 15	(Map 11)			
GR 16	(Map 12)	-40996.632	56920.512	560.513
GR 17	(Map 13)			
GR 18	(Map 13)	-41245.688	56925.180	584.902
GR 19	(Map 9)	-40085.320	57743.441	529.959
GR 20	(Map 7)	-41058.565	56853.381	579.936
GR 21	(Map 8)	-40320.135	56914.445	28.979
GR 22	(Map 1)	-39901.629	56657.133	16.702
GR 23	(Map 5)	-40404.930	56412.804	52.532
GR 24	(Map 1)			
SAM 1	(Map 20)			
SAM 2	(Map 21)			

Site K2 Peg No	Excavation No.	Co-ordinates Y	X	Z
	Test pit, 1934	-39295.039	57688.591	652
	Test pit, 1934	-39295.039	57688.591	6.652
	Test pit, 1934	-39292.081	57655.385	2.510
	Test pit, 1934	-39281.006	57654.118	2.779
	Test pit, 1934	-39280.306	57656.447	92.827
	Test pit, 1934	-39286.083	57657.074	92.888
	Test pit, 1934	-39292.280	57543.194	97.243
	Test pit, 1934	-39302.793	57536.651	100.148
	Test pit, 1934	-39334.528	57650.330	94.473
	Test pit, 1935	-39301.068	57701.088	97.482
	Test pit, 1935	-39300.702	57707.372	97.160
	Test pit, 1935	-39329.250	57718.105	96.713
	Test pit, 1935	-39327.613	57721.890	96.703
	Test pit, 1935	-39277.919	57615.754	90.741
	Test pit, 1935	-39311.614	57632.474	92.793
	Test pit, 1935	-39405.964	57653.849	93.101
	Test pit, 1935	-39408.585	57649.434	93.649
	Test pit, 1935	-39382.385	57656.113	92.843

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Site K2		Coordinates		
Peg No	**Excavation No**	**Y**	**X**	**Z**
B5	Rn 1, 1972	-39361.182	57567.420	103.741
C5	Rn 1, 1972	-39362.643	57568.824	103.706
D5	Rn 1, 1972	-39364.120	57570.164	03.627
C3	Rn 1, 1972	-39365.148	57565.713	104.992
D3	Rn 1, 1972	-39366.600	57567.121	104.914
-	Rn 1, 1972 (floor)	-39363.883	57566.456	104.442
A1	Rn 2, 1974	-39330.479	57666.262	94.521
A6	Rn 2, 1974	-39333.268	57681.007	95.108
B2	Rn 3, 1975			
B11	Rn 3, 1995			
	Ts 1	-39288.669	57649.698	92.429
A1	Ts 1, 1972	-39358.269	57581.592	100.348
A8	Ts 1, 1972	-39350.419	57593.183	97.248
B0	Ts 2, 1972	-39333.692	57569.588	99.322
B6	Ts 2, 1972	-39327.312	57578.532	96.848
B4	Ts 3, 1972	-39294.103	57707.764	97.815
B	Ts 3, 1972	-39293.970	57695.794	97.488
A1	Ts 4, 1972	-39307.487	57717.231	96.774
A5	Ts 4, 1972	-39306.327	57729.178	96.881
A1	Ts 5, 1972	-39217.966	57737.938	100.321
A6	Ts 5, 1972	-39216.251	57747.781	100.214
A1	Ts 6, 1972	-39273.580	57620.892	90.437
A5	Ts 6, 1972	-39283.618	57627.536	91.167
D4	Tr D4, 1993	-39330.614	57571.338	98.889

Site Mapungubwe Hill

	Grave	-39970.599	56967.897	566.088
C1	Mk 1, 1973	-39936.922	56923.805	563.012
C3	Mk 1, 1973	-39935.197	56929.543	562.171
C7	Mk 1, 1973	-39931.729	56941.069	560.442
A1	Mk 3, 1973	-40007.676	56984.080	570.360
A3	Mk 3, 1973	-40005.421	56989.655	569.683
4/1	Mk 4, 1994	-40032.052	56981.684	574.469
4/2	Mk 4, 1994	-40009.950	56971.178	570.853
4/3	Mk 4, 1994	-40012.801	56964.545	570.285

Site: Mapungubwe, Southern Terrace

Origin		**Y**	**X**	**Z**
B	Grid 1953	-39951.680	57121.926	520.933
C	Grid 1953	-39976.356	57068.929	523.225
D	Grid 1953	-39896.823	57031.793	522.226
IJ 78	Grid 1971			

Site: MAP 20 on Samaria

Peg No	**Excavation No**	**Coordinates**		
		Y	**X**	**Z**
A/86		1000.020	1020.035	998.322
A2/90		999.970	1009.961	999.079
B1/03		1039.993	1000.026	998.353
B1/06		1009.998	1000.000	999.677
B2/01		989.980	999.981	999.343
B2/02		979.992	999.991	999.101
B2/10		999.997	989.990	999.832
B2/30		1000.002	970.016	1000.633

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8.11 A list of satellite co-ordinates

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SITE NO		NAME/DESCRIPTION	LATITUDE	LONGITUDE
MAP	1	Mapungubwe (GR 10, 11, 12)	22° 12' 37,5" S	29° 23' 14,4" E
	2	K2 central midden	22° 13' 02,3" S	29° 22' 50,8" E
	3	Bambandyanalo 3.1 southern walls	22° 12' 55,0" S	29° 22' 54,7" E
		3.2 western walls	22° 12' 49,0" S	29° 22' 51,9" E
		3.3 northern walls	22° 12' 50,4" S	29° 23' 05,8" E
	4	North Eastern Terrace (GR 1,13)	22° 12' 32,9" S	29° 23' 23,1" E
	5	North Eastern Plateau (GR 4)	22° 16' 26,8" S	29° 23' 25,0" E
	6	Western valley kraal (GR 5)	22° 12' 37,2" S	29° 22' 58,0" E
	7	Stone walled hill (GR 20)	22° 12' 35,8" S	29° 23' 51,6" E
	8	Eastern Terrace (GR 21)	22° 12' 38,2" S	29° 23' 25,3" E
	9	Stone mound	22° 13' 03,6" S	29° 23' 19,8" E
	10	Kraal deposit on ridge (GR 14)	22° 12' 47,6" S	29° 23' 48,1" E
	11	Stone platform	22° 12' 48,7" S	29° 23' 52,2" E
	12	Kraal site (GR 16)	22° 12' 37,3" S	29° 23' 51,4" E
	13	Rock art site (GR 17,18)	22° 12' 37,0" S	29° 24' 01,0" E
	14	Site with mortar stones, east of Map 13	22° 12' 35,9" S	29° 24' 06,5" E
	15	Kraal site near Limpopo river	Unknown	
	16	Kraal site northwest of Hardekool Camp	22° 12' 26.5" S	29° 22' 01,1" E
	17	Skull burial east of K2 (1993)	22° 13' 05,3" S	29° 22' 58,1" E
	18	Site with Zhizo pottery	22° 12' 46,1" S	29° 22' 16,5" E
	19	Rock overhang with game board on floor	22° 12' 43,0" S	29° 22' 12,0" E
	20	Kraal site: Samaria (SAM 1)	22° 12' 33,5" S	29° 20' 34,2" E
	21	Stone wall site: Samaria (SAM 2)	22° 13' 02,9" S	29° 10' 31,9" E

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8.12 An interactionary plexus

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Dornan (1925:66) lists two arbitrary San groupings who occupied the Limpopo and Shashi areas. The first was known as the Mapani Masarwa who inhabited the *mopani* woodland area on the border between the Bechuanaland Protectorate (Botswana) and Southern Rhodesia (Zimbabwe) and included the Hietchware San. The second group was known as Baduruwane who inhabited the country on both sides of the Crocodile River. Early travellers and writers mention the *Vaalpens*, a name given to indigenous Bush peoples inhabiting the Waterberg and the area from the Soutpansberg to the Limpopo. These groups were categorised as either hunter-gatherers or as clients of the Tswana (Van Schalkwyk 1985).

The extant San in eastern Botswana are now categorised as the Eastern Khoe San. This includes the Hietchware or Tshwa San of eastern Botswana (Barnard 1992:117-119). The characteristic of these 'Eastern' groups is their association with herding peoples and their high degree of cultural and spatial hybridisation (Barnard 1992:117).

The most unusual feature of the Eastern Khoe San is the practice of circumcision and the existence of totemism which indicates some cultural flow. Totemism is widespread among San groups in the Okavango and Kalahari fringe areas suggesting an early origin and is considered to be aboriginal to both San and Bantu-speakers (Cashdan 1979, in Barnard 1992:126).

Dornan (1925:54,136-137), despite confusing custom and group in many instances, described an 'Eland Bull Dance' which, according to Barnard (1992:130), refers to an eastern Khoe medicine dance. This is the only evidence we can find of any reference to trance dancing, indicating the possibility that the eastern Khoe maintained some measure of independent ideology. More ethnographic research on the ritual practices of the Shashi San and related groups would be useful in determining the extent of cultural flow.

Very little is known of the ideology and cosmology of the Shashi San. However, Cashdan completed extensive research further to the north in the Botletli River area on territoriality (1983;1984), competition between San foragers and Bantu-speaking food producers (1986) and trade (1987). There is extensive evidence of interaction between the San and Bamangwato, Kalanga and Tswana in the region (Dornan 1925; Barnard 1992; Cashdan 1983, 1984, 1986, 1987; and others). Apart from trade, the Easten Khoe had contractual hunting arrangements with Bantu-speaking agro-pastoralists, and to avoid such problems as stock theft, the practice of *mafiso* was adopted, whereby the San herded stock in exchange for animals of their own. According to Venda and Sotho spokespeople, this practice was also evident in the western Soutpansberg between pre-Singo groups and the San.).

Apart from a brief mention by Dornan (1925:66), the Shashi San are not discussed in the literature. The Shashi San have been completely assimilated by the local Tswana and only a few of the older people still speak their ancestral Khwe.

Generally, the San of the Kalahari fringe have not been recently acculturated and possess a hybrid culture of some antiquity. Early contact is also suggested by *in situ* finds of LSA associated artefacts on Early Iron Age sites (see Mason 1986; Maggs 1980, 1984; Whitelaw 1993; Fish 1995). Further evidence for close interaction is the description of an Early Iron Age

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skeleton excavated at Happy Rest in the western Soutpansberg which shows both negroid and Khoisan characteristics. The manner of burial indicates a person of high social status (Steyn, Loots & Prinsloo 1994). A human burial excavated by Whitelaw (1993) at Nanda in KwaZulu-Natal exhibits Khoisan features in a predominantly negroid specimen.

The existence of the Khoe in the Limpopo valley has been postulated by Ehret (1982:163) using linguistic research. Their existence has been inferred from loan words in proto-South-east Bantu ancestral to the Sotho, Tsonga and Venda languages amongst others. Further evidence for a Khoe presence in the northern or central Transvaal (Northern Province) is derived from sets of loan words in proto-Shona. Shona contact is thought to have occurred in the Limpopo valley. Suggested approximate dating places the Khoe in the Limpopo area at about the beginning of the first millenium AD (Ehret 1982:166).

The linguistic theories of Ehret (1982) regarding the Khoe in the Limpopo valley are, however, not backed up by any archaeological evidence. Bambata pottery, for example, has been argued to indicate Khoe presence in the Matopos, but has also been argued to have originated in mixed farming contexts.

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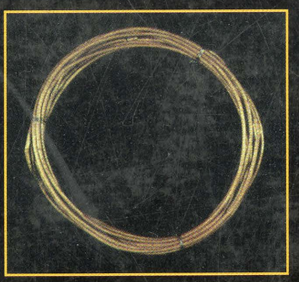

Mapungubwe (the hill, its southern slopes, and the nearby K2 site) and Great Zimbabwe are the two greatest African Iron Age complexes south of the equator. When it was first seen by European eyes, it had lain deserted for some seven centuries. Its discovery, and the finding of gold on the summit of the hill read like something from a Rider Haggard novel, but unlocking its secrets has proved difficult. The first excavations under the aegis of the University of Pretoria in 1933 and 1934 seemed to reveal a 'Bantu culture' made, inexplicably, by a non-Negroid people. A second programme of excavations (1935-1940) not only failed to resolve this enigma, but, if anything, created even greater confusion. The reasons were misguided excavation and poor recording carried out in an age when there was no theoretical framework within which to work. By the late 1960's things had changed to such an extent that Mapungubwe stood as an embarrassment in South African archaeology. In 1968, Professor Eloff, on behalf of the University of Pretoria, initiated a third programme of investigations, with the bulk of the fieldwork in the capable hands of Professor Meyer: the results of that co-operation are presented in this volume. The break with the past could not have been greater. The excavation and recording are impeccable, and for the first time on this huge and difficult site, ancestral to Great Zimbabwe, we have a clear picture of the sequence of events: stratigraphy, chronology, the character of the settlements, and the way in which the various sites within the complex are related. For the first time, Mapungubwe can be integrated into the wider story of early Bantu society in southern Africa. The volume is not the last word on Mapungubwe, but an exciting and eminently commendable introduction to a new age of discovery there; a sound foundation for all future work at the site. It is a volume not to be missed by any serious student of the southern African Iron Age, and one of South Africa's most atmospheric sites.

R.R. Inskeep



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