Early Gold Mining on the Zimbabwean Plateau

Lorraine Swan
Early Gold Mining on the Zimbabwean Plateau
Changing patterns of gold production in the first and second millennia AD
by
Lorraine Swan

Societas Archaeologica Upsaliensis 1994
This piece of work is dedicated to
Roger Summers
who laid the foundations for all
future archaeological studies of
mining in Zimbabwe.
Contents

Acknowledgements

1. Introduction: ‘Ancient’ Mining in Zimbabwe ........................................ 9

2. Physical Context ................................................................. 13
   2.1. Geographical context ......................................................... 13
       2.1.1. Topography ................................................................. 13
       2.1.2. Climate ................................................................. 13
       2.1.3. Soils ................................................................. 18
   2.2. Geological background .................................................... 19
       2.2.1. Geology of the Gold Belts ........................................ 19
       2.2.2. Scale of early mining ............................................... 20
       2.2.3. Loss of archaeological evidence .................................. 21
       2.2.4. Prehistoric use of other minerals in Zimbabwe .................. 23
       2.2.5. Evidence for early gold-mining in the wider region .............. 30

3. A Review of the Literature .................................................... 33
   3.1. 19th-century explorers, and notions of foreign exploitation .......... 33
   3.2. The first archaeological work ........................................... 34
   3.3. The archaeology of mining .............................................. 34
   3.4. Recent historical approaches .......................................... 38
   3.5. Previous spatial analyses of archaeological sites in Zimbabwe ....... 39

4. The Archaeological Context .................................................... 43
   4.1. Problem definition and approach to the problem ...................... 43
   4.2. A chronological framework for archaeology in Zimbabwe ............. 44

5. The Archaeological Context of Gold Production ............................. 55
   5.1. Gold mines .............................................................. 55
   5.2. Ore processing sites .................................................... 59
   5.3. Gold smelting sites ..................................................... 64
   5.4. Goldsmithing ........................................................... 67
   5.5. Gold artefacts from archaeological contexts .......................... 68
   5.6. Imported goods from archaeological sites ............................. 71
6. Spatial Analysis of the Quantitative Data .................................................. 79
   6.1. Distance buffering around gold mines ........................................... 79
      6.1.1. Two case studies ................................................................. 88
   6.2. Grid cell correlations ................................................................. 89
   6.3. Results ......................................................................................... 90
      6.3.1. Earlier first millennium ....................................................... 90
      6.3.2. Later first millennium ........................................................... 92
      6.3.3. Ninth to twelfth centuries ..................................................... 92
      6.3.4. Eleventh to fifteenth centuries ............................................. 94
      6.3.5. Sixteenth to nineteenth centuries ....................................... 96
      6.3.6. Results of the case studies .................................................. 98

7. Case Study: Excavation at Tebekwe Mine ............................................. 103
   7.1. Introduction ................................................................................ 103
   7.2. Situation and geology of the site .................................................. 105
   7.3. History of gold-mining at Tebekwe ............................................... 105
   7.4. Historical references to earlier working at Tebekwe Mine ............ 107
   7.5. The excavation ........................................................................... 109
      7.5.1. Stratigraphy .................................................................... 109
      7.5.2. Finds ............................................................................ 111
      7.5.3. The stope face ................................................................. 111
   7.6 Interpretaion of mining methods .................................................... 112
   7.7. Discussion .................................................................................. 116

8. The Changing Patterns of Gold Production .......................................... 117
   8.1. Earlier first millennium AD ......................................................... 117
   8.2. Later first millennium AD ............................................................ 118
   8.3. Ninth to twelfth centuries AD ....................................................... 120
   8.4. Eleventh-to-fifteenth-century, lower-status settlements ................ 120
   8.5. Eleventh-to-fifteenth-century, elite settlements ............................. 122
   8.6. Sixteenth to nineteenth centuries .............................................. 123
   8.7. Conclusion .................................................................................. 125

References .............................................................................................. 127

Appendix 1. List of archaeological sites included in the analysis .......... 137
Appendix 2. Early gold mines included in the spatial analysis ............. 164
Appendix 3. List of mineral reduction sites ........................................... 177
Acknowledgements

I would like to express my sincere gratitude to the following persons, who have given me a great deal of assistance to complete this project.

Firstly, Mr Bernard Beekes initiated the project by encouraging archaeological work at Tebekwe. He and his wife, Nono, kindly accommodated the excavation team at their home in Shurugwi. Mr Beekes also ran gold-assay tests on samples from the excavation and showed us several, potential, gold-production sites in the Shurugwi area. Mr M. Moyo, of the Chemistry and Soil Research Institute, Ministry of Lands, Agriculture and Rural Resettlement, ran tests for organic carbon and mechanical analytical tests on soil samples. Mr D. Mzengeza of the Institute of Mining and Metallurgy, University of Zimbabwe, ran the XRF tests and taught me how to interpret the printouts. Mr Joseph Mapiravana, of the Department of Metallurgy, Ministry of Mines, gave advice about crucible design and assistance in interpreting the XRF results. Mr Paul Stidolph was generous with information about the copper crosses which continue to turn up on farms in the Karoi area. Dr. Terry Childs, of the Conservation Analytical Laboratory, Smithsonian Institution, Washington D.C., read the section on the prehistoric use of other minerals in Zimbabwe and made some useful comments. I would also like to thank the Geological Survey of Zimbabwe for allowing me to reproduce drawings of Tebekwe Mine in their archive. My husband, Ian Swan, helped to construct the map of early workings and was endlessly supportive.

Messers Sam Mubuso, Punish Musendo and Gift Zata, on the technical staff of the Archaeology Department at Queen Victoria Museum, helped to collect information from the Zimbabwean Archaeological Survey. Mr Takesure Handiseni kindly drew Figure 7.7. The National Museums and Monuments of Zimbabwe kindly gave me study leave.

In Sweden, Dr Paul Sinclair and Professor Bo Gräslund offered much encouragement, as well as constructive criticism. Without their help, this project would have been an undertaking too ambitious for me to contemplate. Dr Gustav Trotzig also made many useful comments on the thesis. Elisabet Green helped a great deal with the administrative arrangements, and Christina Bendegard put a lot of work into laying out the final printed version. Alicja Grenberger reproduced the old drawings of Tebekwe Mine and tidied up several other illustrations. Michael Petén introduced me to the computer programs and helped me with problems throughout the analytical work. I thank Mr Neil Tomkinson for language corrections.
The Swedish Agency for Research Cooperation with Developing Countries (SAREC) provided me with the necessary funding and discussions with colleagues involved in the SAREC-funded project entitled ‘Urban Origins in Eastern Africa’ were extremely useful.

To all of these people I am deeply indebted.

*Lorraine Swan*
Chapter 1

Introduction: ‘ancient’ mining in Zimbabwe

The numerous, abandoned gold-mines which existed between the Limpopo and Zambezi Rivers at the end of the nineteenth century are an important and long-remarked part of the archaeology of the plateau. As early as the tenth century, Islamic writers made reference to the gold which was obtained from East Africa, and Portuguese records from the sixteenth and seventeenth centuries had much to say about the mines of the Zambezi region.

In the 1860s, Hartley, travelling in the area of modern Zimbabwe, became aware of old mines which then appeared to be no more than collapsed pits in the ground. He showed one of these to Baines, who later referred to the old mines as ‘old Mashona workings’. Baines described the gold-extraction process at a site approximately thirty miles north of modern Chegutu; quartz from the mine was carried about two miles to a place where it was roasted and then crushed. The miners’ village was another four or five miles away from the roasting-place. Baines’s companion, Wood, was able to purchase a little of the gold dust in a quill. Most of the gold dust was sold to Hwata (spelled Watah in Baines’s letter), a chief whose territory lay to the north-east and who probably traded with the Portuguese (Wallis 1946, pp. 788–9). The mention of quartz is a sign that the Shona were still engaged in reef mining. However, during his travels almost twenty years later, Selous did not encounter any gold-reef mining in progress, although he heard of evidence to show that workings near the Zweni (Umzweni) River had been abandoned not long before (Selous 1893, pp. 336–7). On several occasions Selous bought quills containing alluvial gold which had been panned from the Mazowe River, and it seems that Shona communities had ceased reef mining altogether by the 1880s but continued to wash gold from alluvial reserves.

It was believed that Nguni incursions had caused the cessation of reef mining by Shona communities. Selous recounted a story told to him by elderly Ndebele men who had participated in some of the first raids on Shona villages; they had come across people digging for gold in deep holes in the ground between the Zweni (Umzweni) and Umfuli (Mupfure) Rivers, the region of modern Chegutu and Kadoma (Selous 1893, p. 336). However, the Ndebele did not mention gold-mining in the Bulawayo area, where they had settled and made the centre of their empire from the 1830s, even though Bulawayo had been an area of intensive mining activities on some of the richest reefs in Zimbabwe.
It would seem that reef mining had already ceased in most parts of the country before the Zulu incursions (Phimister 1976). Mines were probably abandoned when the reef had been followed until it reached the water level or when the miners attained what they considered to be their economic limit in terms of the cost-effectiveness of the available technology.

By the time that the settler community arrived in the region in 1890, prospective gold-miners saw evidence that almost every gold-bearing quartz outcrop had already been worked (Fripp 1912, p. 172; Schofield 1925). Gold-mining had apparently been carried out on a large scale. Geologists and mining engineers writing reports in the 1890s and early 1900s made numerous references to ‘ancient workings’ or ‘old workings’. At this time, industrial equipment was introduced into gold-mining in Zambesia, thereby extending the capacity of the mines considerably. In a completely new economic and political setting, Shona men went to work at the mines as wage labourers voluntarily at first, but soon increasing in numbers under pressure from the settler government (Beach 1977). Attempts by some households to pay hut tax in alluvial or nugget gold were forbidden, and men had no option but to work for wages and join the monetary system (Chamber of Mines 1899).

This much about the more recent history of Zimbabwean gold-mining is familiar to many of us, but questions focusing on how or when it began are more complicated to answer. Chapter 2 explains the difficulty of relating mines to dates or cultural groups in Zimbabwe. Finds of gold on archaeological sites at Ingombe Ilede, Mapungubwe, Great Zimbabwe, Khami and related sites have shown that resident, elite communities were using gold in the early second millennium AD. A total time-span of several centuries, even a millennium, of gold-mining has not been ruled out. The individual mines varied greatly in size and it is difficult to discover how much time was spent on each. Summers calculated that little more than one ton of ore had been removed from most of the smaller mines, whilst the bigger ones had yielded 40,000 tons of ore, on the average (Summers 1969, p. 185). A mine on the scale of Tebekwe in Shurugwi, for instance, worked entirely with hand tools, must have taken many years to exhaust (Fig. 7.2).

The primary objective of this thesis is to provide a chronological framework for the history of gold production in Zimbabwe. Work on the project originated with the excavation at Tebekwe Mine, described in Chapter 7. The evidence at Tebekwe showed that in fact it was still possible to collect cultural and datable material from one of the country’s more important gold-mines. This offered some hope that more examples of this nature might come to light in the future. Meanwhile, there is a need to consolidate all the current information about gold production into one study.
Summers said a great deal about the technological aspects of gold- and copper-mining in the past. He expressed the hope that, in the future, the sequence which was established by his preliminary results would be refined by the addition of new data (Summers 1969, p. 132). Unfortunately, further reports of archaeological material found in the context of mine workings have been extremely rare. Although the topic of gold-mining should play an important role in Zimbabwean archaeology, researchers have probably felt that little could be done in view of the fact that most of the archaeological material had been destroyed by more recent mining.

A great deal more archaeological information has accumulated since Summers's work was published twenty-four years ago, and in this thesis I shall attempt to use the existing archaeological database to learn more about the changing patterns of gold production through time and space.

The history of gold-mining and gold production in Zimbabwe can be split into two principal phases:

1. An early period when mining was probably the part-time work of farming communities. Exchange contacts were made with the Islamic and later the Portuguese mercantile world on the coast, and raw materials from the interior would be traded for imported prestigious items. As exchange gained impetus, gold production was integrated into the economic structure of the Zimbabwe state. It has been suggested that gold extraction began at alluvial deposits. Hand tools and fire-setting were used for underground reef mining, and ventilation and water extraction were very limited. The end of this mining period was due to the exhaustion of the payable reef resources, but the seasonal use of alluvial deposits continued.

2. With the introduction of dynamite and industrial machinery, there was a period when abandoned mines were re-opened on a relatively small scale along commercial lines. As this proved successful, the gold-mining industry expanded and has on the whole been a successful commercial operation during the twentieth century. Farming communities have continued to exploit alluvial deposits and a few old reef mines.

This thesis is concerned with the first period and it is necessary to differentiate between these earliest gold mines and the later reworking on the same sites after the earlier mines had been abandoned. However, definitions have become problematical. Since writers in the late nineteenth century first commented on abandoned mines, the potential antiquity of these mines and their possible associations with the many, ruined, stone buildings have been imagined, and hence the word 'ancient' has been used. This was reinforced by the book entitled The Ancient Ruins of Rhodesia (Hall & Neal 1902). Summers later wondered whether 'ancient' was really an appropriate term for the mines but decided that to change it after so many years of use would
be purely argumentative (Summers 1969, p. ix). Even more recently, Herbert has stuck to the old term (1984).

However, the current academic world has become sensitive about terminology and about the full associations with which vocabulary is laden. The word ‘ancient’ has associations with racist ideas about foreign groups settling on the Zambesian plateau several thousand years ago, mining the gold resources and living within the safety of massive, stone-walled settlements. Obviously, a term connoting these false ideas is no longer acceptable, even though the mining which we now know took place from about 1000 years ago onwards could certainly be called ‘ancient’ in the true definition of the word.

It is very difficult to separate ancient from modern mining on the basis of definitions. There is not only a technological difference between the two, but there are also different economic and political contexts. The question of terminology is a complicated one, and the solution is beyond the scope of this project. Where it is necessary to differentiate, those mines which were worked within an archaeological context, i.e. in ‘prehistory’, will be referred to as ‘early’, and those in which the abandoned workings were re-opened in the 1890s and the twentieth century will be referred to as ‘modern’.
Chapter 2

Physical context

2.1. Geographical context

2.1.1. Topography

The high-veld plateau of Zimbabwe possesses a number of resources which have attracted human populations to settle there throughout history. It stretches across the country from north-east to south-west, dividing the watershed between the Zambezi River to the north-west and the Limpopo and Save Rivers to the south-east. A large proportion of the plateau is higher than 1000 metres, and some parts towards the north-east rise to more than 1500 metres in altitude. The high altitude has a considerable cooling effect on the climate, and temperatures are usually comfortable and attractive to human settlement.

The mountain ranges in the eastern highlands rise to between 1800 and 2400 metres and receive the heaviest rainfall in the country. In spite of the wet climate, the region has not attracted settlement throughout prehistory but has been occupied for limited periods by groups who have adapted their agricultural technology to suit the mountain slopes.

The area of modern Zimbabwe, with the densely populated plateau at the centre, is surrounded on all quarters by natural topographical boundaries, i.e. the Zambezi River to the north and the Limpopo River to the south, the mountains along the eastern border and the arid Kalahari sand veld to the west. Of course there were contacts across these boundaries in prehistory and communities in Zimbabwe have by no means been isolated. Nonetheless it is feasible to take the geographic unit of modern Zimbabwe as a spatial framework for research (Figs 2.1, 2.2 and 2.3).

2.1.2. Climate

Situated between 15° and 23° south, Zimbabwe lies within the tropical zone. The climate is suitable for agriculture, but the variability of the rainfall imposes a serious constraint. Zimbabwe enjoys rainfall during the summer months from November to March/April, the winter months from June to August being dry throughout the country (Torrance 1962). The north-eastern part of the plateau receives between 800 and 1200 millimetres of rain annually, on the average. The eastern highlands are much wetter, whilst the
Zambezi and Limpopo valleys are very dry (Department of Meteorological Services 1984).

The rains are renowned for their inconsistency and vary considerably from the average; drought years are an integral part of Zimbabwe’s climatic patterns (Makarau & Marume 1989; Marume & Unganai 1992). Without irrigation, crops are affected not only by low rainfall, but also by rains which come too early or too late in the season. This obviously affected agriculture in the past, and stored grain may not always have been sufficient to last through drought years. The problem could be overcome by keeping cattle and by utilizing local resources to participate in trade (Beach 1977).

In 1992, Zimbabwe experienced a devastating drought. The 1991–92 season saw an average of less than 400 millimetres of rain across the entire country, and this shortage was compounded by the fact that previous years had seen well below average rainfall, leaving the country’s water reserves...
Figure 2.2. Map of Zimbabwe, showing rivers mentioned in the text.

significantly depleted (Marume & Unganai 1992). By the 1992 winter season it became necessary to import maize and to transport it to rural populations whose crops had failed.

It was within this context that reports about illegal gold panning and fatal accidents began to appear regularly in the national newspaper, The Herald. Apparently there was sufficient water in river beds to continue with this activity. Washing gold from alluvial deposits in Zimbabwe's river beds causes environmental damage and siltation of the rivers, and it has been an illegal practice for some years. In spite of this, many people have continued to search for gold by panning sand from river beds, and the numbers of people participating in the activity certainly increased during 1991 and 1992 (The Herald, Friday, 25 October 1991, Wednesday, 1 January 1992, Wednesday, 22 April 1992, Thursday, 30 July 1992, and Friday, 21 August 1992). When crops failed, communities were forced to find an alternative
form of subsistence. Gold was fetching between ZW$35 and ZW$45 per gram on the black market in 1991–92, and it was reported that panners could collect this amount of gold in three or four days (The Herald, 26 June 1991). Thus, a successful gold panner could earn more than double the stipulated minimum monthly wage.

Although the law against gold-panning was relaxed towards the end of the year, many panners continued to practice without a licence (The Herald, Tuesday, 19 May 1992). In an attempt to escape the notice of the authorities, they worked in secluded and dangerous stretches of rivers, and some communities also extracted gold ore from disused mine-shafts, often without any form of safety device (Herald report). As a result, a number of people suffered fatal accidents (The Herald; Wednesday, 26 June 1991, Wednesday, 1 January 1992, Wednesday, 22 April 1992, Monday, 7 September 1992). Despite the dangers, people continued in their pursuit of gold, as it was their only apparent means of subsistence.

It is not unreasonable to suppose that the situation described here has frequently recurred in the past. Considering Zimbabwe’s susceptibility to drought, it seems likely that communities in prehistory sometimes found themselves in a position where they had to find alternative means of subsistence, particularly in the drier parts of the country.
Gold panning venture threatens Mazowe River

Gold mania hits Chivi area

Four gold panners killed in Filabusi

Move to curb gold panning

GOLD RUSH

Miners warned as eight more are trapped in Shamva

Figure 2.4. An assortment of newspaper headlines from 1991–92.
Such short-term changes would be extremely difficult to detect in the archaeological record, but a certain amount of attention has been given to assessing the climatic episodes of the past. Oxygen-isotope chronologies from Cango Cave in the southern Cape have shown that, between 3200 and 2500 years ago, southern Africa was affected by the worldwide, neoglacial cooling. During the next 1000 years, temperatures became much warmer. However, oxygen-isotope chronologies and tree-ring-growth responses both show that temperatures cooled again between AD 1000 and 1550, when the effects of the Little Ice Age are apparent in southern Africa. Tree-ring data from the fourteenth century in particular indicate a harsher climate (drier and colder). Subsequently, growth conditions altered to above average in a southward advance from the tropics, perhaps taking place in Zimbabwe in the early sixteenth century. The late eighteenth and the nineteenth centuries were wetter than the present time (Tyson 1986, pp. 55–61; 1991).

In spite of the hardships involved in mining and metal production, it would seem that Zimbabwe’s inherently unpredictable, rainfall patterns could have been an important factor affecting local, mineral-resource exploitation.

2.1.3. Soils

Pedology is an important factor which would affect the choice of settlement location among agrarian communities. Several soil regions would be expected to discourage archaeological settlement. The deep, sandy arenosols which cover a large portion of western Zimbabwe have low nutrient reserves and little water-holding capacity, whilst the shallow lithosols in parts of the Zambezi and Limpopo valleys cannot be cultivated. On the plateau, soils fall into two main categories: the sandy, granite-derived soils and the clay soils derived from basic rocks.

In the modern context, the highest agricultural productivity is on the red-clay soils, derived from the metamorphic rock formations of the northern Gold Belts (Nyamapfene 1991, p. 66). However, these soils may have been unpopular with early subsistence farmers, whose hand-held hoes and adzes would be far more effective on lighter, sandier soils (Sinclair 1987, p. 40). Similar theories have been put forward for early farming in Europe, when lighter, more workable, fertile soils were preferred to heavier soils, partly on account of the available technology (Champion et al. 1984, pp. 121-4).

Since the clay soils derive from the Gold Belts, farming communities in the past would be expected to avoid these areas, unless they were particularly interested in the mineral resources. The south-western, Gold Belt soils support sweet-veld grasses, so the farming communities which settled in this area were able to combine animal husbandry with gold-mining in a successful economic strategy.
Other environmental factors which appear to have affected population
distributions in the past are the vegetation (there appears to have been a
correlation between settled areas and miombo woodland) and areas affected
by tsetse, which may have been avoided (Summers 1967; Sinclair 1987, pp.
129–42; Beach 1990). When attempting to assess zones of agricultural suc-
cess for prehistoric farming communities, it is necessary to think in terms of
indigenous crop varieties, which are far more drought-resistant than maize,
which has become the staple diet in Zimbabwe. One should also think in
terms of the technology of the period and subsistence production levels.

2.2. Geological background

2.1.1. The geology of the Gold Belts

The geological context of Zimbabwe, as far as it is relevant to gold-mining,
has been described in several other contexts (Swift 1961; Summers 1969, pp.
11–17; Phimister 1976, p. 6; Stagman et al. 1978; Bartholomew 1990b, pp.
1–2). It will be briefly summarized here, in order to provide a background to
this project.

The Precambrian period is divided into two parts, the Archaean and the
Proterozoic. The Gold Belts of Zimbabwe are metamorphosed rocks usually
referred to as greenstones, which formed between 3500 and 2900 million
years ago during the Archaean period. They are surrounded by a matrix of
granitic and gneissic rocks, which were deposited after the greenstones.
Together, these rocks form the Basement Complex, which constitutes the
raised plateau across Zimbabwe from north-east to south-west.

The oldest of the Gold Belt rocks, the Sebakwean Group, are about 3500
million years old. They formed in central and southern Zimbabwe, where
only remnants now remain. Overlying this and to the west, the Bulawayan
Group rocks are about 3300 million years old, and the youngest greenstones,
the Shamvaian Group in northern Zimbabwe, are about 2900 million years
old. The surrounding granites were formed subsequently. The lower lands
surrounding this central plateau comprise younger rocks, which overlie the
Basement Complex and are for the most part sedimentary.

Mineralisation was a complex process, thought to have taken place in
association with the formation of the granite matrix around the greenstones.
Solutions carrying minerals, including quartz and a variety of metals, were
forced into cracks and cavities close to the earth’s surface. Some metals,
including gold, were deposited in their free states, whilst others often com-
bined to form sulphides, oxides and other compounds. Zimbabwe’s principal
gold deposits are in quartz veins in the greenstones and neighbouring granitic
rocks. Quartz veins or reefs formed in wide fissures during mineralisation,
and gold was deposited unevenly in them, with concentrations restricted to rich pockets. About 70% of the country’s gold-mines have been based on vein-type deposits (Foster 1982). Probably 95% of the known, early gold-workings exploited quartz vein deposits (Summers 1969, p. 14).

The second most common type of deposit is in shear zones which are similar in nature to vein deposits, but the fractures are much narrower and more numerous. There is less free gold available in mineralised shear zones than in vein-type deposits. Other gold deposits associated with banded ironformations are also found among Archaean rocks. Further gold deposits are found in two sedimentary basins which were formed during the Proterozoic. These comprise the Deweras, Lomagundi and Piriwiri Groups to the west of the Basement Complex and the Umkondo Group on the country’s eastern border.

Gold mineralisation is concentrated along the interface between granite and schist rocks and has often resulted in gold deposits in the granitic zones adjacent to the Gold Belt schists (Mann 1984). This is an important point for the distribution analysis undertaken in this project and described in Chapter 6, where the intention is to investigate which groups of archaeological sites are most closely associated geographically with the gold-mines. Gold-mines are not distributed evenly throughout schist zones but are concentrated in certain areas of mineralization, and a number are not in the schist belts at all but on nearby granites. Clearly, the locations of the mines themselves must be used as the database for this analysis, rather than the areas covered by schist belts.

2.2.2. Scale of early mining

The region where early gold-workings were located stretched the entire length of the Zimbabwe plateau from north-eas to south-west and extended south-westward into the Tati district of Botswana. Eastwards, the Makaha and Mutare Gold Belts extend into Mozambique (Mennell & Summers 1955). The richest ore deposits were towards the south-west in Matabeleland, with the result that workings were more concentrated in that part of the country.

The number of workings is not known with any certainty but has been a subject of speculation. Wherever auriferous quartz appeared at the surface, a working was started and the reef was followed for as long as it continued to yield rich enough ore. These old workings were the primary targets of the settlers who came from Britain in the late nineteenth century. By 1910, more than 100,000 mining claims had been staked by immigrant prospectors by far the majority of these were found by locating older workings and following the reef (Jollie 1924, p. 167; Summers 1969, p. 4). In fact, the mining
companies preferred claims which were staked on land 'with ancient workings'. However, the number of claims was deliberately inflated by companies who wished to attract more investment from the British public, and the genuine value of many of the claims was doubtful (Hone 1909, p. 245; Jollie 1924, p. 168).

In the 1950s, an estimate of the total number of 'ancient workings' was made by investigating records in the Mines Offices in the country's major urban centres. Attention was paid to early workings where mining operations had recommenced and a gold-production figure had been recorded after 1894. These totalled more than 7000 throughout the country (Mennell & Summers 1955, p. 770).

Subsequently collection of information about 'ancient workings' was carried out in much greater detail (Summers 1969). As a result, 1267 workings were listed, of which 88% were gold-workings and 11% had been mined for copper. Since it was not possible to find information about every single claim which had produced gold, it was estimated that the sites listed represented less than one-third of the total number of claims based on early workings and that the actual number of prehistoric gold-mines would have approached 4000 and copper mines 500 (Summers 1969, pp. 105–7).

The mines used in the analysis for this project are those whose positions have been located on maps in the Zimbabwean Geological Survey Bulletins (Fig. 6.1). It has not been possible to pinpoint the remainder of the mines on Summers’s list. However, it is felt that these 500 sites plotted give a good representation of the distribution of early gold-mines throughout the country and the addition of other sites, if it were possible, would probably only add quantitatively to the existing distribution. (Compare the distribution of mines in Fig. 2.5, after Summers’ 1969, with that on Fig. 6.1).

2.2.3. Loss of archaeological evidence

Once the early miners had tunneled out a reef of gold-bearing rock, they used to fill up the open stope again. Manuel Barreto, writing in 1667, as well as Diogo de Couto, alluded to the forbidding of mining by the king, and it has been suggested that the practice of back-filling may have been a deliberate attempt to hide the mines from the Portuguese (Summers 1969, p. 165; Theal 1899, pp. 490–1; 1900, p. 367). However a more recent interpretation of the passage written in Barreto’s book emphasises the aggressive nature of the quest for gold by the Portuguese during the mid 1660s, indicating that local people concealed gold resources in order to avoid the threat of raids and harsh exploitation by foreign merchants. The excavation at Tebekwe Mine, described in Chapter 7, shows that mines were not always filled right to the surface, and it is doubtful whether gaping mine stopes could be easily con-
sealed! Stopes were more likely to have been filled in for safety reasons or perhaps to clear dumps of waste rock from the ground surface (Summers 1969, p. 174).

Whatever the reason, some stopes were deliberately back-filled. This practice gave the mines the potential for ample archaeological reconstruction of mining history, since pottery, mining tools, beads and sometimes the skeletons of unfortunate miners were buried in the shafts and stopes (Summers 1969, pp. 6, 121 and 136). Had all these discoveries of pottery and other archaeological material been collected by European miners from the 1890s onwards, we would now have had a good picture of the history of earlier gold-working in the country from its beginning to its development and

Figure 2.5. 'Prehistoric gold and copper mines in Rhodesia and adjoining areas', after Summers (1969).
spread and its changing importance in the economy of the Zimbabwe state. Unfortunately, this is not the case. From 1890 to 1893, very many mining claims were pegged, mostly on earlier mines. The whereabouts of earlier workings could be obtained from local Shona people in exchange for trade goods. It was a successful method of prospecting and was encouraged by mining companies. Although many claims were pegged during this period, the Chartered Company would allow them to be worked only by companies in which it had a vested interest. In 1903, this provision fell away and, in 1904, small-scale operators began to rework the older mines extensively (Mennell & Summers 1955).

Tragically, these miners were unaware of or not concerned with the cultural importance of the relics in the mines and simply allowed them to be milled, in their zeal to extract gold (Mennell & Summers 1955). Hammer stones and iron gads would be separated, since they could cause a temporary breakdown of the mill, but bones and pottery would be crushed (Mennell & Summers 1955, p. 765; Burchett 1965b; Summers 1969, p. 121). Much archaeological material in the mines must have been destroyed in this way. The few exceptions will be described in Chapter 5. Summers placed the turning-point in this situation in 1929, when Gertrude Caton-Thompson's work drew the nation's attention to its archaeological heritage (Summers 1969, p. 121). Sadly, it was too late to salvage the history of mining, because much of the informative cultural remains in the fills of old mines had already been destroyed.

One situation in which a few relics were preserved is illustrated in Fig. 7.1. At Tshibwe Mine in Shurugwi, mining operations at the end of the nineteenth and in the early twentieth centuries apparently did not extract all of the back-fill from the earlier workings, but dumps of waste material eventually covered them over. Fortunately, as the dumps were later cleared, portions of early fill remained intact and a very limited, archaeological excavation ensued, as described in Chapter 7.

2.2.4. Prehistoric use of other minerals in Zimbabwe

Although the subject of gold has always been a fascinating one, this is not the reason for treating gold separately from other minerals in this thesis. There is some justification for treating gold differently from other minerals in the context of early mining in Zimbabwe. Auriferous deposits in Zimbabwe show evidence of vigorous prehistoric exploitation. Early copper-workings occur in adjacent countries as well as in Zimbabwe, but the country's large number of early gold-workings is unique. Furthermore, the patterns of production, trade and consumption of gold differ from those of copper and other metals.
Whilst the importance of iron and copper in the archaeology of Zimbabwe is recognised, a detailed analysis of the iron- and copper-processing industries would be a large undertaking in itself and is not directly relevant to the aims of the project. The discussion of these topics is restricted to this section.

Copper extraction. Copper and gold were both mined from underground or open stope, and in fact a few mineral deposits may have been mined for either or both of these metals (Summers 1969, p. 105). Although the same mining techniques were used, the evidence indicates that gold was extracted on a far wider scale than copper. Summers’s study of early mine-workings in Zimbabwe resulted in a list of 1267 ‘ancient workings’. Eighty-eight per cent of these had been gold-mines, 11% copper-mines, whilst the remainder comprised four mines which had possibly been worked for both gold and copper, and one tin mine (Summers 1969, p. 105).

It has been suggested that the emphasis on early gold extraction may have resulted from a bias in recording. The database of early gold workings is largely a result of European prospecting at the end of the nineteenth century. Since their concern was with gold-workings, copper-mines could have been overlooked (Roberts 1970).

However, it is difficult to imagine that copper-workings on the same scale as the list of known gold-workings could have gone unnoticed. Geologists and archaeologists have remarked, on the basis of their experience in the field, that, although early copper-workings did exist in Zimbabwe, they were very few, whilst virtually every single exposed reef of gold-bearing quartz had been mined (Fripp 1912; Schofield 1925; Mennell & Summers 1955). To this day, relatively few, early copper-workings are known. Furthermore, in Zambia, where copper rather than gold is the primary mineral extracted, early copper-mines were noted by European prospectors, indicating that there was certainly an interest in copper resources at that time and in locating earlier workings as a means of easy prospecting (Herbert 1984, pp. 24–5).

Since very few examples of early mine workings have been added to Summers’s list of 1969, the figures quoted by him, including the ratio of gold- to copper-workings, are likely to be a reasonably representative sample of early mine workings.

Copper production. Although there is less evidence for copper-mining in Zimbabwe than there is for gold-mining, copper-smelting and production sites are more numerous. The archaeological evidence for this industry ranges from copper slags, copper ore, ingot moulds, and a cast ‘button’ of solid copper to crucibles used for copper-smelting. (Examples of copper slag should be treated with caution, because, unless some bluish-green corrosion is present, it would be difficult to distinguish copper slag from iron slag (S. T. Childs, pers. comm.).
Copper trade. There is evidence for the internal exchange of copper, in the form of the cross-shaped ingots which are found primarily in the north-west of Zimbabwe. (Naturally, copper could have been exchanged in other forms, such as bangles or beads, but ingots are more directly indicative of exchange.) Cross-shaped, copper ingots have been found at 162, sites which cluster in the Urungwe area of north-western Zimbabwe (Garlake 1970). They are often associated with pottery similar to that from Ingombe Ilede, hence their use can probably be dated to between the mid-thirteenth and the late sixteenth centuries AD.

Local consumption of copper. There is a vast difference in the local use of gold and copper. The evidence indicates that copper was far more widely used locally than gold. Gold artefacts have been recovered in very limited quantities from a few archaeological sites; Chapter 5.3 describes each example in more detail. On the other hand, the numbers of copper artefacts from archaeological sites show that it was quite common for people to adorn themselves with copper bangles and beads, and occasionally to use domestic tools manufactured from copper. The Zimbabwean Archaeological Survey currently records 166 sites with copper ornaments or tools, including bangles, beads, wire, finger-rings, a pendant, an arrowhead, pins and a needle. The items of gold jewellery which have been found appear to mimic the styles and manufacturing techniques of copper ornaments.

Period of use. Evidence for copper-mining and production from certain sites can be broadly dated by associated cultural material. Close to an early working on a mining claim near the Rupisi Hot Springs, pottery sherds were found being eroded from the ground by a stream formed by the springs (Summers 1969, pp. 48, 122). The ceramics have much in common with assemblages from Mabveni, the Gakomere Tunnel site and the Malapati Dip, implying that copper was probably extracted at the site in the first millennium AD.

At the Three Mile Water site, settlement remains and dolly holes occurred close to a source of permanent water (Summers 1969, pp. 61, 178). An excavated midden produced a large collection of Coronation sherds, several pieces of copper ore, a probable crucible fragment and a cast ingot of blister copper. The Coronation sherds would date the settlement to between the seventh and the ninth centuries.

Besides the evidence for the earliest copper production in Zimbabwe at Rupisi Hot Springs and the Three Mile Water site, evidence exists for even earlier, local use of copper. Sites where copper ornaments have been found are spread across the country and range from the first metal-using communities through to the nineteenth century. The sites where copper artefacts have been recovered from very early contexts are Mabveni, the Chamakwang-
wadza Extension, the Gokomere Tunnel site, where they were found in association with Gokomere ceramics, the ‘Place of Offerings’, sections C, F and H, and the Inyanga Research Fund site XXIX, sections A and C, with Ziwa ceramics (Zimbabwean Archaeological Survey; Robinson 1961; 1963; Summers 1958, pp. 28–42). The associated ceramics can be used to date these early copper finds to between the fourth and the seventh centuries AD. At Malveni, ten copper beads were excavated from a midden deposit, the majority of them found in the lower level (Robinson 1961). Radiocarbon dates from the site were 180 ±120 (SR-43) and 570 ± 110 (SR-79), which have been calibrated to the late second/early third and the early seventh centuries respectively (Huffinan 1980b). Copper artefacts were found in association with Coronation pottery at the ‘Ziwa Acropolis’ site and were assigned a date in the later first millennium AD. It appears quite probable that a knowledge of copper-working was brought to south east Africa by the first iron-working communities.

Some evidence of relatively early copper-working has come from Zambia. Limited numbers of copper ornaments were found at Dambwa, which was occupied during the seventh and eighth centuries (Fagan, Phillipson & Daniels 1969, pp. 39–42). By the seventh century, copper bangles were deposited in burials at Kalomo, and copper finds from Sanga demonstrate sophisticated copper-working techniques dating from the eighth century (Fagan 1969). Furthermore, a copper-smelting site at Kansanshi on the Zambia/Zaire border, dated to the mid first millennium AD, was already producing an estimated 50 to 80 kg of copper annually (Bisson 1976, p. 423).

The archaeological record generates a different picture for the local use of gold. Gold first appears at archaeological sites during the earlier part of the second millennium AD, although we are informed by writers in the tenth century, al-Wardy and al-Mas’udi, that gold was already being exported from the coast at Sofala at that time (Bent 1892, p. 231; Kenyon 1931; Axelrad 1940, pp. 2–3). Gold appears to have had a much more limited period of use in the Zimbabwean interior than copper.

Iron. The treatment of iron in prehistory is very different from that of other metals. Ore was collected from or close to the ground surface, and usable deposits are found throughout Zimbabwe. Evidence of iron-smelting is so abundant that almost every settlement may have produced tools and weapons for its own use.

However, high-grade iron ore is found in a few restricted locations and these were worked on a large scale in prehistoric times (Mennell & Summers 1955). Furthermore, several groups were renowned for their skill as iron-workers, in particular, the Njanka who lived near Mount Wedza (Mackenzie 1975). Although Wedza ore is not of such a high grade as Buhwa ore, it has a
structure which reduces easily to a fairly pure metal. Ore from Wedza was traded in the wider region, but the intensive scale of working among the Njanga enabled them to become very successful manufacturers and traders of iron implements (Mackenzie 1975).

The tendency in southern African prehistory for iron to be made into utilitarian items and copper to be used for ornamental purposes has been remarked upon (Bisson 1976, pp. 2–3). However, iron was sometimes made into beads and bangles, so it did share with copper and gold some value as an attractive commodity. In fact, the earliest iron artefacts found tend to be bangles, and iron apparently acquired its utilitarian role later (S. T. Childs, pers. comm.).

Silver. There is little evidence for local extraction of metals other than gold, copper and iron. The Portuguese were given rights to ‘mines of gold, silver, copper, tin, iron and lead’ by Gatsi Rukere in a treaty in 1607, but their subsequent attempts to locate the silver mines were unsuccessful (Abraham 1962). They were believed to be located near to hills called Boquisa and at Chico in the Zambezi valley (Axelson 1973, pp. 161–4). At the end of the seventeenth century, silver was purchased and exported from the Zambezi valley, and the Mutapa eventually granted control over the silver mine to the Portuguese. However, the latter never actually succeeded in locating the mine (Axelson 1960, pp. 184–5).

There is no archaeological support for prehistoric silver-mining in Zimbabwe. Old workings for silver have not been recorded, and very few silver artefacts have been found in archaeological contexts. Isolated examples come from the Portuguese site of Dambare, where a silver aiguillette, a silver buckle and the silver casing of a pin were excavated from ‘Caucasoid’ male burials within the remains of the church building (Garlake 1969a). Consequently these silver items are very likely to have been imported by the Portuguese occupants of the site.

Two more silver relics have been found at Danangombo (Dhlo Dhlo): a fragment of silver plate bearing an embossed design, and a silver pin (White 1901; MacIver 1906, p. 49). The latter was believed to have been manufactured locally although it was thought that the metal itself was imported. Silver and copper utensils were said to have been found in 1894 at Zinjanga (Regina) Ruins near Fort Rixon, although they were not described (Cooke 1972). Danangombo and Zinjanga are both ruins of Khami type and any silver artefacts found at either could plausibly have been imported by Portuguese traders.

Tin. There are a number of possible sources of tin. It is produced from pegmatite deposits in various parts of northern and western Zimbabwe today, the most important source being at Kamativi, east of Hwange, but old workings have not been reported at any of these sources. At the turn of the century, it was reported that tin was ‘almost unknown as a product of Rhodesia’ (MacIver
1906, p. 49). Tin may have been brought in from the Transvaal, where there were extensive, early tin-workings in the Rooiberg area (Oxley Oxland & White 1974). There is also said to have been a significant source of alluvial tin in the Masvingo area (Caton-Thompson 1931, p. 64). Tin may have been extracted from workings on Cornucopia Farm near Rusepe in eastern Zimbabwe (Prendergast 1979). Some tin might have been brought to the plateau by the Portuguese, since it was included in a list of cargo items imported from Cambay to Sofala in 1519 (Caton-Thompson 1931, p. 64).

Table 2.1. Archaeological sites where tin has been found.

<table>
<thead>
<tr>
<th>Map-sheet</th>
<th>Site name</th>
<th>Finds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1829 b2</td>
<td>Maramuca</td>
<td>Tin fragment (ZAS).</td>
</tr>
<tr>
<td>2028 A2</td>
<td>Khami</td>
<td>Tin ingot, foil (ZAS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>slag, lump (MacIver 1906, pp. 58, 43).</td>
</tr>
<tr>
<td>2028 B1</td>
<td>Suburbs</td>
<td>Tin rod? (ZAS).</td>
</tr>
<tr>
<td>2030 D1</td>
<td>Pamuuyu</td>
<td>Tin fragment (ZAS).</td>
</tr>
<tr>
<td>2230 A2</td>
<td>Mwansawandu</td>
<td>Tin fragment (ZAS).</td>
</tr>
<tr>
<td>2030 B4</td>
<td>Great Zimbabwe</td>
<td>Tin bar fragment (Hall 1905, p. 116).</td>
</tr>
</tbody>
</table>

Table 2.2. Sites where bronze artefacts have been found.

<table>
<thead>
<tr>
<th>Site no.</th>
<th>Site name</th>
<th>Relevant bronze finds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1730 BD 2</td>
<td>Dambarare</td>
<td>Medallion, nail (ZAS).</td>
</tr>
<tr>
<td>1929 BD 24</td>
<td>Boggies Hill</td>
<td>Knife (ZAS).</td>
</tr>
<tr>
<td>1929 CD 1</td>
<td>Danangombe</td>
<td>Bangles, wire bangles, spearhead (Caton-Thompson 1931, pp. 225–8).</td>
</tr>
<tr>
<td>1931 BC 1</td>
<td>Chiwona</td>
<td>Wire (Caton-Thompson 1931, p. 219).</td>
</tr>
<tr>
<td>1931 DB 1</td>
<td>Matendere</td>
<td>Beads, bangle, wire (Caton-Thompson 1931, pp. 221–2).</td>
</tr>
<tr>
<td>1931 DD 1</td>
<td>Chibvumani</td>
<td>Wire (Caton-Thompson 1931, p. 253).</td>
</tr>
<tr>
<td>2028 AB 1</td>
<td>Khami</td>
<td>Wire (ZAS).</td>
</tr>
<tr>
<td>2028 BA 46</td>
<td>Suburbs</td>
<td>190 copper or bronze beads (ZAS).</td>
</tr>
<tr>
<td>2030 BD 1</td>
<td>Great Zimbabwe</td>
<td>Bangles, pellet, sheathing, wire, wire bangles, hoe, spearheads (Caton-Thompson 1931, pp. 203–17, 228; ZAS).</td>
</tr>
</tbody>
</table>
Two instances from Khami indicated that tin may at least have been smelted on site. One was a lump of tin found in a crucible, and the other was a heap of ashes containing tin slag which was interpreted as a tin-smelting site (MacIver 1906, pp. 43, 58). Old food tins are found on many historical sites in Zimbabwe. Disregarding these, fragments of tin have been found at very few archaeological sites. They are all found at sites associated with the Zimbabwe and Khami Traditions, where some imported goods have occurred, which argues in favour of the raw tin being imported.

Bronze and brass. A number of bronze artefacts have been recovered from archaeological contexts. In fact, a recent examination of some copper ornaments from Great Zimbabwe, Khami, Danangombe (Dhlo Dhlo) and Castle Kopje showed that some were actually tin bronzes with up to 12.8% of tin content (Childs 1993). This is not surprising, since pure copper is very difficult to process into useful objects. A closer examination of many ‘copper’ artefacts may show that some of the later examples are actually bronzes and may lead to a clearer understanding of the manufacture of alloys. The sites where bronze items have so far been recorded are listed in Table 2.2, and brass items in Table 2.3. The sources of the tin and zinc for these alloys have not been identified with any degree of certainty. Some may have come from old tin-workings at the Rooiberg in the Transvaal (Johnson 1912, p. 81). It has been suggested that bronze may have come from the Rooiberg, since tin and copper were so closely associated that they may have occurred in the same lode (Fripp 1912). Moreover, the tin ore contained a suitable flux which could have acted as a natural flux. Later, however, an examination of bronze objects from Great Zimbabwe led to the conclusion that they

Table 2.3. Sites where brass artefacts have been found.

<table>
<thead>
<tr>
<th>Site number</th>
<th>Site name</th>
<th>Relevant brass finds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1732 DC 5</td>
<td>I.R.F. xxxxi</td>
<td>Wire (ZAS).</td>
</tr>
<tr>
<td>1829 DD 9</td>
<td>Naseby Farm</td>
<td>Bangles, beads (ZAS).</td>
</tr>
<tr>
<td>1832 AC 7</td>
<td>Highfields Farm</td>
<td>Bangles (ZAS).</td>
</tr>
<tr>
<td>1929 CD 1</td>
<td>Danangombe</td>
<td>Probably Arab candlestick</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Caton-Thompson 1931, p. 226).</td>
</tr>
<tr>
<td>1931 BC 1</td>
<td>Chiwona</td>
<td>Rod (Caton-Thompson 1931, p. 219).</td>
</tr>
<tr>
<td>2028 DA 54</td>
<td>Madzrigwe Ledge</td>
<td>Brass or copper wire bangles (ZAS).</td>
</tr>
<tr>
<td>2030 BD 1</td>
<td>Great Zimbabwe</td>
<td>Bangles, wire (ZAS).</td>
</tr>
<tr>
<td>2030 BD 69</td>
<td>Siba</td>
<td>Bangles (ZAS).</td>
</tr>
</tbody>
</table>
were manufactured from copper and tin which had each been smelted to a relatively pure state before they had been combined (Stanley 1929). A tuyère nozzle submitted for examination by Gertrude Caton-Thompson bore a prill of low-tin bronze, suggesting that the bronze had been melted in a hearth (Stanley 1929).

Lead. The only other metal associated with Zimbabwean archaeological sites is lead. Portions of lead and lead slag have been found at two sites. A lead-column base, possibly of a candlestick, from the Portuguese site of Dambarare must be an imported piece (Garlake 1969a). A portion of lead slag was recovered from a Woolandale-related site on Insindi Ranch, but its source and significance have not been discussed.

2.2.5. Evidence for early gold-mining in the wider region

Early copper mines existed on a large scale in south-eastern Zaire (Katanga), and more are known from Zambia, Zimbabwe, the northern Transvaal, eastern Botswana, Namaqualand, Namibia and western Angola (Summers 1969, pp. 38–79; Bisson 1976, pp. 17–25; Herbert 1984, pp. 20–8).

The eastern and southern African region is well supplied with gold sources. Major modern mines have occurred on the Rand in South Africa and on smaller scales throughout Zimbabwe, in eastern Zaire, northern Tanzania, western Kenya, southern and western Ethiopia, eastern Sudan and Egypt (Pergamon World Atlas 1968, p. 268; Ministry of Geology, USSR, 1980). However, prehistoric mining at these gold sources is known to have occurred only on the Zimbabwean plateau and in Sudan and Egypt, and perhaps on a small scale in the Transvaal (Summers 1969, p. 116; Thain 1974). Mention has also been made of tenth-century gold production in Ethiopia (Abyssinia) by Ibn-Hawqal, who was probably writing in the 960s AD (Axelson 1940, p. 2). There is no evidence to suggest that the small deposits in Tanzania and western Kenya were mined before the twentieth century (Sutton 1973, p. 32). Gold-smelting crucibles have been reported from the Mozambican coastal site of Chibueni, and it was thought that the source of the gold was the Zimbabwe plateau (Sinclair 1987, p. 91). Gold is not known from Malawi.

Although the copper deposits in Zambia and south-eastern Zaire were mined on a large scale in prehistory, there is nothing to suggest that any of the gold deposits in the south east of Zambia were worked. Gold ornaments found with the Ingombe Ilede burials in southern Zambia were considered to have originated from the mines in Zimbabwe (Fagan et al. 1969, p. 136).

Rich deposits of gold-bearing ore in the northern Transvaal in areas of prehistoric copper-mining were untouched. These deposits were said to be clearly apparent at the surface and would certainly have been noticed by the copper-miners. In the eastern Transvaal, rich concentrations of alluvial gold

were not w nearby (Fri-taining gol copper and
were not worked by the early miners, although they mined tin and copper nearby (Fripp 1912). These communities apparently had no interest in obtaining gold, whilst they were prepared to invest time and labour to obtain copper and tin.

The overall picture is that many of the copper sources of eastern and southern Africa were utilised by farming communities in the past. In contrast, the prehistoric gold-mines are a unique and prominent feature of the Zimbabwe plateau. As a result, the importance of gold from Zimbabwe as an exchange commodity should be stressed.
Chapter 3

A review of the literature

This chapter outlines the changing trends in ideas about gold production in Zimbabwean history. It deals mainly with the identity of the miners and the aspects of archaeology which are the primary focus of this project. A brief critique is given of racially biased ideas dating from the late nineteenth century, when several writers were convinced that foreign immigrants who had been drawn to exploit the gold deposits were responsible for the Zimbabwe Tradition settlements.

3.1. Nineteenth-century explorers and notions of foreign exploitation

Baines was one of the first authors to comment on the very large number of obsolete, gold-mine workings between the Limpopo and Zambezi Rivers. He referred to these gold-mines as 'Mashona workings' or 'old native workings' (Wallis 1946a, pp. 164, 268; 1946b, p. 482; 1946c, p. 648). Gold-working had already ceased in most of the places that he saw, but reef mining had taken place within living memory and Baines's own questions led to a revival of gold-mining in some of the areas visited by him (Wallis 1946a, p. 164; 1946b, pp. 482–95, 560). At the same time, Mauch's romantic ideas connecting Great Zimbabwe and gold-mining on the plateau with the mines of King Solomon initiated some fantasy (Burke 1969). Two decades later, Bent imagined that the ruins had been built by a large intrusive population who lived in them as a 'garrison in a hostile country', in order to exploit the region's gold deposits (Bent 1892, p. 99). He put the period of mining back to several thousands of years ago, when the Sabaeanas of Arabia had a reputation as traders in gold, although this connection could not be demonstrated (Bent 1892, pp. 220–1). Between 1882 and 1893, Selous saw enough in the region between the Zambezi and Limpopo Rivers to convince him that the Shona people were responsible for gold-mining and had been for centuries, but Selous was influenced by the fantasies of Bent and he thought that mining techniques had been learned from 'ancient Arabians' (Selous 1893, p. 335).

As late as the 1970s racist opinions about the foreign origins of Great Zimbabwe were encouraged by the Rhodesian Front government. In this context, Gayre of Gayre published his own theories about successive waves
of immigration and occupation of Great Zimbabwe, including foreign exploitation of the gold-mines (Gayre of Gayre 1972). This resurrected turn-of-the-century ideas along these lines but disregarded the archaeological findings at Great Zimbabwe and other sites, resulting in a work of fiction rather than fact.

3.2. The first archaeological work

David Randall-Maclver was the first archaeologist to carry out sound excavations at a cross-section of sites in Zimbabwe. His work showed that the stone enclosures were probably not built earlier than the eleventh century AD (MacIver 1906, p. 86). MacIver would not commit himself to estimating a date for the mines, since he had no evidence upon which to base such an estimate. However, he noted that at least some of the mines must have been worked from the eleventh century onwards, because gold was one of the commodities which attracted Islamic and subsequently Portuguese traders (MacIver 1906, p. 102).

Gertrude Caton-Thompson was the second archaeologist whose work answered some of the prominent questions concerning the history of the country’s stone ruins and proved their Bantu origins. Like MacIver, she did not give attention to investigating the mines themselves and did not believe that an archaeological approach to the mines would provide any answers about their chronology (Caton-Thompson 1931, p. 8). She did not think that the gold trade could account for the origin of Great Zimbabwe but agreed that gold-mining could have followed the establishment of the stone-building tradition (Caton-Thompson 1931, pp. 8–9, 190–1). She pointed out that there was no evidence to prove the beginning of a gold trade any earlier than the first signs of external trade on the coast.

Commenting on the limited gold artefacts recovered by scientific excavations, Wieschhoff remarked that, since gold was hardly used locally, it must have been produced in response to the demands of an external trade link (Wieschhoff 1941, p. 83). He denied any close geographical connection between the mines and the ruins.

3.3. The archaeology of mining

Schofield made a number of observations concerning ‘ancient’ gold-mining. One point in his work which is relevant here is that Portuguese documents referred primarily to alluvial sources of gold. Schofield thought that it was natural enough for the Portuguese not to draw attention to the rich underground mines from which they themselves stood to gain. Consequently, he was convinced that the principal period of mining had been during the
sixteenth and seventeenth centuries and that gold from the richest and most easily worked sources had been exported in Portuguese hands.

By far the most thorough archaeological research into gold production to date has been carried out by Summers. By 1950, he had begun to search the Geological Survey Bulletins and other sources for information about ‘ancient’ mine workings (Summers 1950). In 1955, Summers and F. P. Mennell acknowledged that little could be learned from a conventional archaeological approach to the mines themselves, because any archaeological layers in the workings had been re-extracted and crushed for their gold content. They wondered whether mining methods had been introduced from outside the region and suggested India, Indonesia and Bantu immigrants as possible sources of the methods. The few examples of pottery salvaged from mines were sherds of Stamped Ware (now classified partly as Gokomere Tradition and partly as Kutama Tradition), indicating that the mines may have been worked during the earlier ‘Iron Age’. Since no evidence of gold-working or use of gold artefacts had ever been recovered from settlement remains with Stamped Ware, Mennell and Summers concluded that the users of this pottery exchanged gold for other goods. They decided that the ‘ancient workings’ should be treated completely separately from the ruin tradition, but they agreed that the occurrence of gold in graves at some ruins indicated that the inhabitants of these sites did derive profit from the gold-mining industry (Mennell & Summers 1955).

Summers commented on the lack of any ceramics of the Zimbabwe Ruin Tradition to be found in or near to mine workings. Nonetheless, by 1967, after a close examination of distribution patterns, he had agreed that ‘Each mass of ancient mines seems to have attracted a stone building of the Zimbabwe type’, and he went so far as to suggest that the stone buildings may have been inhabited by officers who were responsible for maintaining some control over mining production (Summers 1967). He produced a map to demonstrate that many of the ruins were situated at the edge of mining areas or on potential trade routes (Summers 1969, p. 140).

For the first time, Summers was able to give some secure dates to the mining industry. Two dates from Aboyne Mine, ad 1170 ± 110 (SR-53) and ad 1300 ± 110 (SR-58) and one from Geelong Mine, ad 1170 ± 95 (SR-143) established twelfth to fourteenth century dates for these workings. In addition to carbon-14 dates, Summers used several examples of pottery which had been found in or very close to mine workings to get an idea of the dates for mining. The earliest of these were Ziwa ceramics which had come from within and near to the Golden Shower workings and on the Three Skids Claim. Meanwhile, sherds of Woolandale pottery (Leopard’s Kopje III, northern facies) were found at Joy Claim, Family Claim and Aboyne Mine,
and from village sites close to Sunace Mine, Mamba Mine and Planet Mine. On the Macardon Claim was a village site with evidence of gold-working and Mapungubwe pottery (Leopard’s Kopje III, southern facies). Imported goods associated with mines which were described by Summers included early English coins, brass items from India, Chinese ceramics and a Portuguese ivory statuette.

In trying to solve the problem of how interest in the local gold resources had been initiated, Summers looked to the early miners of southern India. He suggested that, as the gold ores of the mines in Mysore became depleted, Indian prospectors looked for alternative sources of gold and in the sixth or seventh centuries AD located the Zimbabwean ores. It would need only a small number of Indian technicians to impart their mining knowledge and skills and to establish a trade link with the south-east-African interior (Summers 1969, p. 151).

Summers outlined the broad period of mining. In a brief synopsis of the events, he put the first extraction of gold (from alluvial deposits) at about AD 600. He supposed that alluvial sources were discovered first and their use eventually led prospectors to the reef sources. The date of AD 600 appears to be based on the earliest ceramics found in areas with mine workings (Summers 1969, p. 135). He put the first mining in the Chinhoyi district and the area west of Chegutu as early as AD 550 on the grounds of the Sinoia pottery in this area. When Summers began writing, Ingombe Illede, a possible centre for copper and gold exchange, was believed to date to between AD 650 and 950, and he proposed that gold was exported from the Munyat and Mupfure River areas for the first time between these two dates. In the mining areas close to Harare including Mazowe, Bindura, Shamva, Enterprise and Harare itself, Summers said that mining was practised from about AD 750 on the grounds of the Ziwa (ie Ziwa 2, Coronation) pottery. Prospectors may have begun by exploiting the Mazowe and Ruuya river sources. He thought that the copper-mines in the Save River valley had also been worked from about AD 750, or more likely AD 1000, because Ziwa 2 (Coronation) sherds were recovered on a copper claim at Rupisi Hot Springs. He postulated that the earliest prospecting up the Save and Runde Rivers had been in the eighth or ninth centuries. Meanwhile, the earliest mining in the south, from Fort Rixon southwards and westwards, could be fixed at about AD 1065 on the grounds of the radiocarbon dates from the Geelong and Aboynie mines and Leopard’s Kopje pottery.

Huffman debated whether the first gold-mining could have been as early as AD 600. To him, the only secure evidence for the first mining was the set of radiocarbon dates from the Geelong and Aboynie Mines, so it was impossible to support an argument for gold-mining before AD 1000 (Huffman...
1974a). Huffman doubted Summers's theory of Indian origins for gold-mining in Zimbabwe, saying that the technology in both areas was of a very fundamental nature and could not be used for cultural comparisons. The rise in prosperity of the 'Arab settlements' on the coast in the twelfth and thirteenth centuries marked the beginnings of intensive gold-mining in the Zimbabwean interior, said Huffman, so trade in gold between the two areas had probably not begun before AD 1000. It was Huffman's opinion that the developments at Great Zimbabwe were specifically a result of the gold trade with the east coast, which led to surplus wealth and hence social and economic changes. This began, he said, one or two centuries after gold-mining first started (Huffman 1974a). He postulated that the extension of stone-wall building from Great Zimbabwe into other parts of the region in the fourteenth century had been aimed at extending political authority rather than being directly related to the control of gold resources, since these structures seemed to have been positioned in relation to human populations rather than mining areas. The spatial analysis carried out by Sinclair has confirmed that Style 1, Zimbabwe Tradition enclosures were situated on the outskirts of population concentrations (Sinclair 1987, p. 126). However, Sinclair also pointed out that the northern division of the Zimbabwe state coincided with gold-mining areas and that this became the centre of Mutapa state power (Sinclair 1987, p. 129).

Phimister shortened the period of reef mining which Summers had suggested. Schofield had already pointed out that the term used for the earliest gold exported from Sofala seemed to imply alluvial gold, so Phimister agreed with Huffman that reef mining could not have taken place before AD 1000. It seemed to Phimister that the simple methods involved in alluvial working were suited to the beginnings of gold exploitation probably in the first millennium AD (Phimister 1974). Supporting the theory that the Shona were newcomers to this area around AD 1000, he hypothesised that increased economic activities among the Shona led to the commencement of underground reef mining. Phimister agreed with Huffman that the general economic growth and consequent wealth led to the development of the Zimbabwe state (Huffman 1972; Phimister 1976). The height of gold-mining activity, according to Phimister, was between the twelfth and the fifteenth centuries. This was reflected at the coast, where Muslim towns prospered increasingly in the twelfth and thirteenth centuries. However, a drop in world demand for gold and the extortionate amounts of gold demanded by the Portuguese for trade goods led to a decrease in the amount of gold produced under the Torwa and Mutapa polities in the sixteenth and seventeenth centuries. By the nineteenth century, alluvial sources were still being worked, and a few isolated examples of reef mining were still in operation. Phimister
pointed out that most gold-mining operations had probably already come to a halt by the time of the Nguni migrations into the area in the early nineteenth century and that the Nguni had probably not been the main cause of the cessation of Shona mining, as previously thought.

Phillipson agreed that gold-mining began on a small scale at the end of the first millennium AD and that the introduction of imported goods into the region in the same period was significant (Phillipson 1977, p. 149; 1988, p. 178). However, Sinclair accepted, on the basis of spatial analysis, the view that gold-mining may have started earlier in the first millennium (Sinclair 1987, p. 147).

3.4. Recent historical approaches

Having demonstrated that the mines, and the ruins, were certainly the responsibility of local residents and could not be attributed to foreign settlers, the next step for archaeologists and historians has been to understand the internal mechanisms which characterised these industries. Although Islamic traders have left scant literature about their relationship with the Zimbabwean interior from the late first millennium AD until the mid second millennium, quite a lot can be learned from Portuguese texts about their own presence in south-east Africa from the sixteenth to the nineteenth century.

Mudenge disagreed with the conventional ideas that the trade in exported and imported goods had been the prime stimulus to state formation and the economic base of the Mutapa state. In particular, the Mutapa’s prosperity could not have been founded on the region’s gold production, otherwise stricter measures would have been taken to control the trade. A treaty agreed upon in 1629 made the Mutapa (Mavura) subject to the King of Portugal and gave the Portuguese the right of access to all of the mines in the territory (Beach 1980, p. 129). Subsequently, the Portuguese adopted an aggressive stance and apparently attempted to enforce more intensive mining, disrupting the established, Shona, agricultural cycle. Monclaro wrote of the Mutapa’s occasional orders for mines to be hidden and sealed with magical spells, and this passage has sometimes been interpreted as proof of the Mutapa’s monopoly in the gold trade (Mudenge 1988, p. 171). However, it was under these conditions of potentially damaging exploitation of farming communities by foreign merchants that Shona rulers sometimes considered it prudent to conceal mines from the foreigners (Beach 1980, p. 130). Mudenge maintained that agriculture and pastoralism had formed the economic base of society, rather than centralized control of the gold industry and trade. He believed that free trade at the village level had been permitted (Mudenge 1988, pp. 171–2). Beach also noted that Shona miners were free to travel to the payable for export but and the region. By tradition, Isla and vill close the vol

3.5 in the

Vari arch The min
not mini Hall world dist play sout dem und…anc
A sev were mad setti
the coast to exchange their mineral produce, but first they were obliged to pay a high percentage to their rulers (Beach 1980, p. 110). The Mutapa was able to sustain his bureaucratic state structures by wealth derived not only from taxes on imports brought to the Portuguese feira of Massapa and a gift expected every third year from the new ‘Captain of the Gates’ at Massapa, but also from labour service, gifts from visitors, tribute from vassal rulers and judicial fees (Mudenge 1988, pp. 161–94).

The importance of external trade in the local economy probably varied regionally and chronologically, with some rulers placing more emphasis on their relationship with foreign merchants (for example, Beach 1980, p. 133). By the sixteenth century, inland markets had been established by Islamic traders, and the Portuguese developed these and other market-places. Although Shona people brought their goods to the fairs for exchange, the Islamic and Portuguese merchants stood to make more profit by going to the villagers (Beach 1980, p. 110). The economies of the communities located close to Portuguese trading settlements were perhaps more intricately involved in external trade than those situated further afield.

3.5. Previous spatial analysis of archaeological sites in Zimbabwe

Various authors have tried to demonstrate a spatial association between archaeological settlement and gold resources, by using distribution maps. The first of these was intended to show a close relationship between gold-mines and Zimbabwe Tradition sites, in an attempt to support misguided notions of an immigrant population who built in stone and supervised gold-mining operations. The earliest example of such a map, prepared by R. N. Hall and, entitled Ancient Ruins and Gold-workings, is of little use. Gold-workings are not highlighted in any way and it is impossible to assess any distribution patterns. In 1929, Wagner experimented in the question by displaying the major mines and a boundary of the ruin field on a map of southern Africa (Fouche 1937, opp. p. 4). His map is very general, but it demonstrates that the heart of the ‘pre-European’, gold-working area was undoubtedly concentrated in modern Zimbabwe and that the area covered by ‘ancient ruins’ had similar boundaries.

After initial scepticism, Summers constructed a map using a database of seventy, ‘Iron Age’, stone buildings, compared with areas where gold-mines were located. Consequently, he concluded that a case could certainly be made for a correlation between the mining areas and the Zimbabwe Tradition settlements (Summers 1969, pp. 139–41).
Other archaeological sites, besides those of the Zimbabwe Tradition, have since been included in this line of research. In the first case, a shift was recognised in the preferred locations for sites of the Leopard’s Kopje Tradition around Bulawayo. Phase II (Mambo) settlements were mainly situated on granitic sandy soils, whereas the location of Phase III (Woolandale) settlements showed a preference for sites in the Gold Belts, despite the heavy clay soils derived from the gold-bearing, metamorphic rocks (Robinson 1966, p. 5).

The potential in using the Zimbabwean Archaeological Survey records for spatial analysis was first recognised by Summers. Using records which had been collected since the beginning of the century, he compiled a set of maps of archaeological sites in successive time-frames. These illustrated a synthesis of changing, archaeological-site-distribution patterns (Summers 1957). Subsequently, he used the same data in an examination of probable changes in isetse-fly distributions through time, with some preliminary suggestions on long-term, climatic changes in Zimbabwe between 500 BC and AD 1900 (Summers 1967). Settlement patterns were later used by Garlake to suggest a pattern of cattle movement in the Zimbabwe state (Garlake 1978).

In the last decade, a much more sophisticated technique has been used for examining spatial distribution patterns among sites recorded in the Zimbabwean Archaeological Survey (Sinclair & Lundmark 1984). Using a point-pattern analysis to search for clusters among groups of contemporary archaeological sites, Sinclair and Lundmark discovered that sites generally tended to cluster at more than one level. They acknowledged that biases in archaeological surveys were inherent and could certainly have affected apparent site distributions. Nonetheless, several clear patterns emerged from the analysis. In the earlier stages, Gokomere, Ziwa, Zhizo, Coronation and Maxton sites tended to cluster within larger radii, possibly implying a closer overall affinity between groups during this period. Later, Harare, Musengezi, Ingombe Ilede, Mambo and Gumanye sites tended to cluster in more tightly defined groups, although a large void between the north and the south might have reflected discrepancies in survey work. Sites of the Zimbabwe and Khami Traditions appeared to be organised on a more national level and the results pertaining to these sites were clearer and more easily interpreted. Zimbabwe Tradition sites clustered at three distinct levels, representing a three-tier organisation typical of a state formation. The Khami sites seemed to lapse into a two-tier system.

Other observations of particular relevance to the present study are that a movement of Coronation sites onto the central plateau was recognised. Meanwhile, in the south-west, Zhizo sites moved northwards into mining areas, whereas Gokomere sites had generally been situated further south.
(Sinclair 1987, p.135). Later, during phases 2 and 4 of the Zimbabwe Tradition, a movement of sites into the central plateau, mining areas was clearly illustrated by the analysis. An extension of the analysis identified a division of the Zimbabwe state into three clusters, coinciding with known historical developments (Sinclair 1987, pp. 127–9). The northern and western clusters were associated closely with major gold reserves. This method of analysis looked at a wide view of site distribution and was able to expand on, for example, Robinson’s previous observation of movement of Woolandale sites towards auriferous zones.
Chapter 4

Archaeological context

4.1. Problem definition and approach to the problem

Clearly, it is necessary to reach a better understanding of the changing processes of gold production through time and space. One of the current problems is that the history of mining in Zimbabwe lacks a sound chronology. Although Summers suggested an outline in this regard, some authors have expressed doubts about the basis for some of his proposals (Huffman 1974a; Phimister 1976). The primary aim of this project is to re-examine the chronology of mining during the first and second millennia AD. This will be done by analysing the relationship between the existing records of archaeological sites from the first and second millennia and the limited amount of archaeological evidence which is available for gold production. Having established a chronological pattern, we may then ask whether Summers was justified in suggesting that the origins of mining could have been as early as AD 600, or whether we should agree with Huffman that there is insufficient evidence to suggest that any reef mining started before AD 1000.

In view of the enormous scale of early gold-working, gold production probably had a role to play in social stratification during the formation of the Zimbabwe state. The paucity of archaeological data for gold-mining and production has made it difficult for archaeologists to define this process. Identification of the cultural contexts of the specific tasks involved in gold production might lead to some progress in this respect. The question of whether there was any relationship between gold-mines and Zimbabwe Tradition sites must still exist in the minds of many modern researchers, especially in view of the fact that the evidence for gold-smelting and the use of gold ornaments comes almost exclusively from elite Zimbabwe and Khami Tradition sites. However, none of the ceramics associated with these architectural styles has ever been found in or even close to a gold-mine. Views about the geographical correlation between mines and stone buildings have been outlined in Chapter 3.

The first approach to this problem will be to examine gold-production sites in the order of the production process, which begins with extraction of ore from the ground, then moves to ore-crushing, then to smelting, and then to manufacture into finished products and ends with trade or local use. The comparison between archaeological sites and mines involves large databases
of sites, and their relative distributions will be tested, using spatial analysis. To date, mine workings have yielded extremely limited, archaeological material and the chance to establish a chronology for mining through direct archaeological association has long since passed. Yet, with the quantity of archaeological information currently available, spatial analysis is useful, because it will demonstrate which clusters of sites were most suitably placed to utilise not only the gold resources, but also the actual mines.

Whilst a fuller examination of the historical use of gold resources should include the alluvial sources, this will not be done, because only two sources of alluvial gold are recorded in the Zimbabwean Archaeological Survey. Although potential sources could be considered, it would be pointless to extend the spatial analysis to include these. Firstly, many rivers in the country might contain alluvial-gold deposits since the gold-bearing rocks lie along the plateau ridge on the main watershed. Secondly, a spatial analysis of archaeological sites in relation to potential, alluvial-gold sources will simply show that settlements are located close to water.

Ore was milled at any suitable rock outcrop but sometimes in the settlement context, so it will be possible to discuss some examples of milling sites associated with cultural material. Evidence for smelting is relatively scarce, but crucibles used for smelting gold have been found in settlement contexts and their archaeological provenance has sometimes been recorded.

Most of the evidence for the local use of gold was lost to treasure seekers at the turn of the century, but some literature from that time records a certain amount of information about the cultural context in which prestigious gold artefacts may have been used. It is possible to investigate the external trade aspect through examining the distribution of imported goods found in archaeological sites; but the relationship between these finds and the gold trade is not straightforward because gold was only one of several commodities being exported. Nonetheless distribution maps of imported goods will be examined in the hope of discovering a pattern which will contribute to the thesis.

4.2. A chronological framework for archaeology in Zimbabwe

In any project concerned with spatial analysis of archaeological sites, the biases in data collection must be considered. If one compares the distribution of archaeological sites in Zimbabwe with a map of modern cities and towns, the major biases are immediately apparent. The measure of archaeological reconnaissance across the country must be taken into account and the set of data which the analysis will employ must be well understood.
When the Archaeological Survey was first compiled, a high proportion of the information was from areas occupied by commercial farms, mines, missions, schools, police stations and Native Department administrative offices. A map of archaeological exploration at that time is reproduced here (Fig. 4.1, after Summers 1960). This shows large, unexplored areas in the Zambezi valley and in the south-east and the western parts of the country. Fig. 4.2, a map of the current situation with respect to archaeological reconnaissance, shows that the voids in these locations are still marked. Until archaeological survey work has concentrated on rectifying the imbalance by examining these areas thoroughly, it cannot be stated with any certainty that past communities avoided these areas on account of inhospitable conditions.

The existing chronological framework for archaeological sites in Zimbabwe is critical as a basis for this study of the distribution and chronology

Figure 4.1. 'Developed areas and archaeological exploration', after Summers (1960).
of gold-working. The fundamental structure has been developing since Caton-Thompson’s work in the late 1920s. The basis for the sequence, as we know it today, was set out by Cooke, Summers and Robinson when they grouped sites, according to ceramic typology, into ‘cultures’ and ‘complexes’ (Cooke et al. 1966). Huffman has used a ‘core concept’ method to test some of the relationships between sets of ceramics, consequently refining the sequence (Huffman 1974b; 1978; 1980a). This process itself has led to some discussion and the study has been criticised for being too subjective (Hall 1983; 1988; Huffman 1983).

One of the problems concerns the association of ethnographic and even linguistic groups with ceramic entities. To some extent, the underlying assumption that ethnic groups may be identified by certain cultural traits,
including language or artistic expression, cannot be avoided. This does not mean that different aspects of culture necessarily share common geographic limits. By using the concept of archaeological ‘cultures’, it is possible to draw some conclusions about groups of people without making too many assumptions about their identity, and the archaeological record does show that these ‘cultures’ cluster in temporally and spatially defined groups (Sinclair & Lundmark 1984). We can accept regularities in ceramic or architectural styles, which can be augmented by a knowledge of other aspects such as economic strategies. If this information can be set in a stratigraphic framework based on an adequate set of dates, archaeologists will have a usable, chronological framework upon which to base other studies, without making dangerous assumptions.
Another criticism has referred to the "stepped-continuum" model (Hall 1983). This groups ceramic styles into "traditions", which may be subdivided chronologically into "phases" and regionally into "facies". This model seems to argue for short periods of change between long stretches of stability in material cultural expression, rather than seeing constant change within societies. However, the record which we have from archaeological sites is not a complete one, so we are only picking out samples of what once existed. As our records expand, archaeologists should be able to trace the gradual changes in styles through time. In the meantime, we group material culture into phases for our own convenience, simply to facilitate an understanding of the past. The method of relative dating, using ceramic taxonomy, has provided the necessary chronological framework within which Zimbabwean
archaeologists may work. Consequently, it is acknowledged that the following structure may be subjective to some extent; nonetheless, it provides an extremely useful outline for the consideration of a variety of research questions.

The periods of time covered by the series of phases illustrated in Figs 4.3 to 4.8 overlap by a century in some cases. This is partly a function of the radiocarbon dates which are used to define time-spans for each archaeological group. It can also be partly explained by the fact that changes took place in various parts of the country at different times, and these maps attempt to summarise the situation throughout the country during successive phases.

The Gokomere Tradition. Most first-millennium sites across the country belong to the Gokomere Tradition. In the south, Gokomere sites have been
Figure 4.6. Archaeological sites of the eleventh to the fifteenth centuries, excluding stone buildings.

dated from the second to the early seventh centuries AD. Some scholars have attributed the earlier radiocarbon dates from Gokomere sites to the Bambata cluster (Hall & Vogel 1980; Huffman 1980b). However, a quantitative analysis of Bambata and Gokomere assemblages has indicated that the early sherds from Mabveni and Zimbabwe Hill should be classified as Gokomere rather than Bambata (Mupira 1988, pp. 20–1).

In the north-east of the country, phase 1 of the Gokomere Tradition is represented by Ziwa ceramics. Only one radiocarbon date exists for the Ziwa phase, but the spread of dates from Gokomere sites in the south is generally considered to apply to Ziwa sites too.

The second phase of the Gokomere Tradition is represented by Zhizo in the south and Coronation, earlier called Ziwa 2, in the north-east (Summers 1958, pp. 1). Facies are north-east, south-west centuries, v.

1958, pp. 134–8; Robinson 1966; Huffman 1974b, p. 108). Both of these facies are dated between the seventh and the ninth centuries AD. In the north-east, a third phase of Gokomere continues into the tenth and eleventh centuries, typified by the Maxton Farm site (Huffman 1971).

The Kutama Tradition. The introduction of a new ceramic tradition on the south-western plateau began with the Mambo facies in the ninth to twelfth centuries, contemporary with Bambandyanalolo in the Limpopo valley. It was followed by Woolandale, dating from the eleventh to the fourteenth centuries. Mapungubwe, the southern counterpart of the Woolandale facies, was a development of Bambandyanalolo (Huffman 1974b, p. 109; 1978; 1984).

Gumanye, on the south-eastern edge of the plateau (ninth to eleventh centuries), Harare (twelfth to fifteenth centuries) and Muséngesi (twelfth to
fourteenth centuries) in the north-east have been defined as facies of the Kutama Tradition (Huffman 1978). Ceramic and economic similarities between Mambo, Gumanye, Harare and Musengezi were demonstrated, but it is difficult to sustain an explanation in terms of migration from the south, in view of the wide geographical separation between the groups. The gap between the southern groups (Woolandale and Gumanye) and the northern group (Harare) could be explained by lack of archaeological survey work, but it may be a genuine lack of settlement on the central plateau caused by tsetse infestation of this region until the sixteenth century (Summers 1967; Sinclair & Lundmark 1984).

The Gumanye facies precedes the development of the state with its capital at Great Zimbabwe. As far as sites post-dating Gumanye are concerned,
archaeological survey has concentrated on elite, Zimbabwe Tradition sites in the south-east, and Montevideo is the only lower-status settlement from the earlier second millennium to have been recorded (Sinclair 1987, pp. 105–9). This explains the apparent gap in settlement in the south-east in Fig. 4.6.

North-western Zimbabwe. Sites in the north-west of the country seem to be more closely related to ceramics from Zambia and are not associated with either the Gokomere or the Kutama Traditions. The earliest Sinoia pottery at Sinoia Caves and NaBa was dated to the seventh century. However, similar pottery from later sites has suggested that the Sinoia group can be divided into several phases (Huffman 1971; 1980b). The existence of a ‘Chitope Tradition’ has been suggested by Garlake but disputed by Huffman, who preferred to classify the ceramics from Chitope and some sherds from Tafuna Hill as part of the Sinoia group (Huffman 1974c; Garlake 1969b; 1971).

Ingombe Ifede is another ceramic group which originated north of the Zambezi River. Sites were distributed in north-western Zimbabwe in the fourteenth and fifteenth centuries. They are associated with cross-shaped, copper ingots, and probably represent a community who were involved in inter-regional trade (Garlake 1970).

The Zimbabwe Tradition. Superimposed over the whole set of low-status-settlement sites dating between the eleventh and fifteenth centuries are the elite stone structures of the Zimbabwe Tradition. Although little is known about the farming communities which supported the Zimbabwe state, radiocarbon dates from Zimbabwe Tradition, stone structures throughout the country overlap with other, well-established, archaeological traditions. The Zimbabwe sites spread throughout the plateau and must to some extent be treated separately from other sites, as they are in Fig. 4.7, simply to avoid confusion.

The later second millennium. For the later second millennium, typological classifications have referred to isolated groups which are easily recognisable. These are the Khami Tradition ruins in the south-west, the Nyanga Ruin Tradition in the eastern highlands, the Portuguese settlements in the north-east, and the ‘loopholed forts’ of the Mount Darwin area. Other sites are simply classified as ‘late Iron Age’ or as ‘nineteenth century’ or ‘Refuge’. These have been omitted from Fig. 4.8 to show that the current classification leaves considerable gaps in the spatial and chronological framework from the sixteenth to the eighteenth centuries. The problem has now been overcome in the Mount Darwin area by Pikirayi’s work, and it is a point which Zimbabwean archaeologists need to bear in mind (Pikirayi 1993).

Portuguese documents written from the sixteenth century onwards record feiras at Luanze, Bocuto, Massapa, Dambarare, Ongoe (Angwa), Maramuca,
Quitamboroizi and Matafuna, and there is archaeological evidence to verify the locations of some of these market-places. The group of Portuguese settlements along the Angwa River point to the use of alluvial gold from the sixteenth century onwards. The remains of the Portuguese feira of Dambarare are situated in the Mazowe mining area (Garlake 1969a), and the crucible sherds and dolly holes found in this context, described in Chapter 5, are interesting. Luanze is well situated for access to gold from the Makaha Gold Belt (Garlake 1967c). If Massapa was located near to Mount Darwin/Fura, it would be associated with the rich, alluvial deposits of the Mkaradzi valley. The remains of Portuguese Maramuca are in a position which provides easy access to the gold deposits of Chegutu and Chakari (Abraham 1961).

Chapter 5

5.1. Gold mining

A few of the gold deposits for which dates for the very early mining dates for the various times the dates are shown in Table 149). The Three Sheds of gold-mining at Aladdin Claim (38). The site is over the interpretation will ever be a challenge to the museum surface after a thorough investigation. The sherds w feet (c. 5.5 m) It has since been found in an extensive settlement (H...
Chapter 5

The archaeological context of gold production

5.1. Gold mines

A few of the gold-workings listed in Appendix 2 have been found in association with the type of archaeological material which may be used to establish dates for the workings. The nature of these sites and the circumstances of their discovery and recording vary widely. Some early mines have produced other archaeological material, such as skeletal remains, artefacts carved from soapstone and mining tools, and the details have been discussed by Schofield (1925) and Summers (1969). Since none of these materials have yielded dates for the mines in which they were found, they are not included here.

The Three Skids Claim near Shamva and the Golden Shower Mine at Arcturus deserve special mention, because they have been cited as examples of gold-mining associated with first-millennium pottery (Phillipson 1977, p. 149). The Three Skids Claim site was reported by the Director of the Geological Survey, H. B. Maufe, in 1944. A collection of clay figurines was found in an anheap close to an 'ancient' working. Rows of bead impressions on some of the figurines indicated an association with Class R1 pottery, now classified as belonging to the Gokomere Tradition (Schofield 1948, p. 123).

The circumstances surrounding the finds at the Golden Shower Mine are both fascinating and frustrating. The Golden Shower Claims, earlier named Aladdin Claims, were on the site of extensive early workings (Maufe 1920, p. 38). The site may have produced the earliest evidence of underground gold-mining in the country. Yet archaeological investigators have disagreed over the interpretation of the remains, and there is little hope that the situation will ever be concluded satisfactorily. The first collection of pottery sent to the museum was found in a drive twenty feet (c. 6.0 metres) below the surface after an early working had been cleared. A few years later, Goodall investigated the working (Fig. 5.1) and excavated 140 decorated sherds, in addition to figurines, charcoal and iron slag from the fill of one of the stopes. More sherds were found as a result of later mining, some as deep as eighteen feet (c. 5.5 metres) below the ground surface.

It has since been argued that the pottery from Golden Shower was not found in an early mine at all, but in pits associated with an Early Iron Age settlement (Huffman 1974a). The ceramics, it was said, were too early to be associated with mining (Huffman 1974a). Mining tools were not found. The
Shower was found not in mine working reported came to be later on, sherds were unfortunately not from Golden Shower Queen Victoria Musions about three to vegetation. No potteries have been found by themselves. The collection large one and it features (Schofield 1977) authors have since on the basis of des Carlake concluded type, whilst Huffman (Whitt 1958, Garla 1961).

The other sites with the Rupisi Hot Springs than gold-mines, section is discussed briefly.

First-millennium workings at severel sites the Zimbabwecani Ai brought to the muses Mines were classified as Town and from its comparable with Cl classified as Chitopo is a Maxon village and a complete bow.

Pottery excavated early gold-working, McDonald remarked very close to ‘ancient’ Woolandale potte articulated with several era found about three, fit at the Family Claim back-fill of an earl.
Shower was found in storage pits typical of Early Iron Age village sites, and not in mine workings. However, this does not explain how the first pottery reported came to be twenty feet (c. 6.0 metres) deep inside the mine and why later on, sherds were found eighteen feet (c. 5.5 metres) below the surface. Unfortunately it no longer seems possible to verify the evidence which came from Golden Shower Mine. The site was visited in 1988 by Tagart, from the Queen Victoria Museum, and the most visible signs were two slight depressions about three to five metres in diameter and a noticeable change in the vegetation. No pottery was seen.

There has been further disagreement over the age of the sherds themselves. The collection of decorated ceramics from Golden Shower Mine is a large one and it has featured in early definitions of Gokomere and Ziwa wares (Schofield 1948, pp. 90–8; Summers 1958, p. 231). Although two authors have since redefined the cultural category of the Golden Shower site on the basis of descriptions of the pottery, they unfortunately disagreed. Garlake concluded that the ceramics were similar to the Coronation Park type, whilst Huffman assigned them to the first phase of Gokomere, i.e. Ziwa (Whitty 1958; Garlake 1967a, pp. 11–12; Huffman 1974a).

The other sites with early pottery, namely the Three Mile Watersite and the Rupisi Hot Springs, are associated with early copper-workings rather than gold-mines. They are described in Chapter 2.2, where copper production is discussed briefly.

First-millennium ceramics have been found in association with early gold-workings at several other sites near the mining town of Bindura, according to the Zimbabwean Archaeological Survey records. In each case, pottery was brought to the museum by members of the public. Sherds from R. A. N. Mines were classified as Ziwa, whilst sherds from a working in Bindura Town and from inside the closed adit of a working on Dillon Farm were comparable with Coronation. Pottery from the Kimberley Reef Mine was classified as Chitope, but it is probably Coronation (Crawford 1967b). There is a Maxton village site on the Bojum Claim near Jumbo Mine at Mazowe, and a complete bowl was found in an ‘ancient’ mine-shaft there.

Pottery excavated at the Lost Donkey Ruin, immediately adjacent to an early gold-working, was classified as Gumanye ware (McDonald n.d. b). McDonald remarked that sites with Gumanye wares were always situated very close to ‘ancient’ or modern gold mines (McDonald n.d. a).

Woolandale pottery, which occurs in the Bulawayo area, has been associated with several early workings. At the Joy Claim, Woolandale sherds were found about three feet (c. 0.90 metres) deep within the fill of a working, and at the Family Claim, Woolandale sherds were likewise recovered from the back-fill of an early gold-working (Summers 1969, p. 122). The Sunace
Mine, the Mamba Mine and the Planet Mine each had archaeological sites with sherds of Woolandale pottery on the surface very close to mines with early gold-workings (Summers 1969, p. 122). At Aboyno Mine, the burial of a man who had perished in a mining accident was found with blue glass beads and a sherd of Woolandale pottery. The skeletal remains of three more miners who had died in a rockfall in the mine were recovered from inside the mine-shaft. Associated charcoal was tested and yielded dates of AD 1170 ± 110 (SR-53) (1160 to 1290 when calibrated) and AD 1300 ± 110 (SR-58) (1260 to 1410 when calibrated), assigning a date in the twelfth, thirteenth or fourteenth centuries AD for the mine collapse (Summers 1969, p. 28; Huffman 1980b). This date fits well with the radiocarbon dates from Woolandale sites at Woolandale, Njenile, Nati Hill and Rennydene which, when calibrated, fall in the twelfth and thirteenth centuries (calibration according to Stuiver & Pearson 1986; Robinson 1988).

Ribbed pottery has been collected from three early workings, but this does not establish a chronology for the three mines. Although ribbed pottery has been found in the later levels at Great Zimbabwe and is also connected with the Nyanga Ruin Tradition, the description ‘ribbed pottery’ is too simple to be diagnostic (Caton-Thompson 1931, pp. 9, 49; Summers 1958, pp. 143–4). Moreover, the three mines where the ribbed pots were found are in separate corners of the country. The Eureka Mine is in the north near Guruve, the Indarama Claim was in the midlands near Kwe Kwe, and the Inyatii Mine is in the east near to Headlands. The ribbed pottery from the Inyatii Mine is likely to be associated with ribbed wares from the Nyanga Ruin Tradition.

Pottery has been recovered from within several more ‘ancient workings’, but the types are unfortunately all undiagnostic. However, the jar shapes and the lack of decoration suggest that most of these examples date to the later second millennium AD. At the Patsy Mine, a pot was found twenty-five feet (c. 7.5 metres) deep in an old working. Sherds were found in early workings on Fernhill Farm, New Eldorado Farm, Pangani Mine and Gaika Mine.

Imported items found within or close to early mines can also help to place the mines in a chronological and cultural context. A fourteenth- or fifteenth-century brass cup from India was found forty feet (c. 12.0 metres) down the D Troop Mine near the Angwa River, and a bead which would have been brought by Islamic traders was found near the R. O. M. Mine at Kwe Kwe (Summers 1969, p. 122). More Islamic trade beads came from the May Mine near Mutorashanga, within 200 metres of a village of unknown date (1730:B:BA:29). Workings at these two mines can probably be dated, therefore, to before the early sixteenth century, when the Portuguese established a trading contact with the region, taking over from the earlier Muslim traders.

5.2. Ore

Throughout known as have been (Buchett are quite of grinding been desc
The report of a copper coin of the Roman period, Antoninus Pius, AD 138–160, which was said to have been found seventy feet (c. 21.0 metres) down an old working at the Odzi Mine, may not have come from this country at all and should be treated with scepticism (Hall & Neal 1902, p. 143; Summers 1969, p. 129). Further reports of coins from early workings were a silver penny of King John of England, dating from about AD 1210, found near to the Deric Mine near Bulawayo, and a silver sixpence of Queen Elizabeth I of England dated 1572 from the fill of an early working at the Quagga Mine in the Odzi district (Summers 1969, p. 122). The coins could not be traced any further, but, after some consideration, Summers accepted these two imported coins as dating evidence.

Other mines with imported goods date from the period of the Portuguese settlement in this region, from the mid sixteenth to the late eighteenth centuries. Imported porcelain and glass dating from the seventeenth or eighteenth centuries were found inside the Duke of Cornwall working near Mount Darwin (Maupe & Hobson 1932). At Suri Suri, in the Chegutu area, was an early working situated 100 yards to the north of the remains of the Portuguese settlement called Maramuca. The Bay Horse Mine, where a Portuguese ivory statuette was found in a deep working, was also in this district (Summers 1969, p. 122).

Imported goods, which probably dated from the nineteenth century, were a brass tray from India found in the Sally Mine near Gwanda, and an Indian silver vase from an early working at Kwe Kwe (Summers 1969, pp. 122, 129–30).

To summarise, it has been shown that very few mine-workings have produced any archaeological material which would clarify their chronological positions. A number of dubious examples have registered an association between Ziya and Coronation pottery of the first millennium, a link between Gunami sites and gold-mining has been remarked upon, and several mines have had some association with Woolandale pottery of the early second millennium. Imported goods have been found inside several mines, showing the link between gold-mining and external trade contacts.

5.2. Ore processing sites

Throughout Zimbabwe, there are more than seventy sites with features known as ‘dolly holes’. These are conical or cup-shaped impressions which have been worn into rock outcrops or occasionally into portable boulders (Burchett 1965a; Summers 1969, p. 175; Garlake 1971, pp. 159–60). They are quite distinct from the shallow, oval-shaped hollows which are the result of grinding grain. The apertures of dolly holes are circular, those which have been described ranging in diameter between twelve and forty-two centime-
Plate 5.1. Crushing holes at Morven Mine.

Plate 5.2. A mineral crushing site near Tebekwe Mine.
Figure 5.2. Plan of a mineral-milling site at Morven Mine by A. Burchett, from the Archaeological Survey of Zimbabwe.

tres, and they are much deeper and more steep-sided than quern-stone hollows. Dolly holes are often found in association with deep, elongated grooves or troughs in the rock. These are also steep-sided and may have score marks gouged lengthwise along them (Cooke 1964; Guy 1965; Burchett 1965c; Fig. 5.2, Plates 5.1 and 5.2). Again, their contours are quite unlike the smooth and gently sloping contours of quern-stones.

One report on a set of sixty-five grinding grooves with three dolly holes in a tributary of the Tebekwe River, near Shurugwi, regards their use as mysterious (Guy 1965). The use of dolly holes and grinding grooves is not such a mystery. They are often found in gold-mining areas and seem to have been formed by the crushing of auriferous rocks. The ore, after extraction from the mine, would be crushed into sand in the dolly holes and was then probably ground down even further in the grooves (Burchett 1965c). The concentrate produced in the grooves could then be panned to separate most of the free gold. Some experiments have proved the use of dolly-hole mortars and grinding grooves for crushing gold ore. The mortars were scraped out with a metal chisel and the residue, when washed in a panning dish, usually indi-
eated a fair gold content, even though the rock outcrops themselves did not bear gold at all (Fripp 1912).

A more unusual form of dolly hole has been referred to as a 'cup and ball mortar' (Summers 1969, p. 175). These holes had a hemispherical shape and would have been ground down by spheres of stone. Stone spheres may be found on many archaeological sites and have obviously been used in a variety of ways. Evidence for their use in ore reduction is an example of a portable, hemispherical, dolly hole which was found together with a stone sphere of corresponding size and shape, in an early mine-working (Summers 1969, p. 177).

Dolly holes are usually found in outcrops of dolerite or some other fine-grained mineral, and sometimes in granite (Summers 1969, p. 175). In some instances, at Macardon Claims and Morven Mine, oblong stone pestles made of dolerite have been found resting in situ or lying near to dolly holes (Jones 1939; Burchett 1965a). It was determined that the circular holes in a surface outcrop of granite at Macardon Claims had probably been used for crushing gold-bearing rocks, since many of the holes contained chips of quartz. Furthermore, a small amount of fine gold was obtained from some of the dolly holes (Jones 1939). Fig. 5.2 is a scale drawing of the troughs and circular depressions in the granite slab near Morven Mine. A sample of dolerite pieces at Morven Mine was washed down and the solution was swilled in a pan. The result was a fine concentrate of gold and some iron (Burchett, n. d.). By examining the grinding grooves in the rock through a magnifying glass, it was possible to see traces of gold in them. A more recent experiment in 1989, observed and recorded by archaeologists of the National Museums and Monuments of Zimbabwe (C. Tagart and E. Matenga), adds further weight to previous evidence in support of the idea that dolly holes and grinding grooves are instruments in the gold-ore-reduction process. A mixture of quartz and humic soil was retrieved from one of a set of dolly holes near Tebekwe Mine. The material was assayed by panning it, and the result showed that the residue contained a far higher gold content than one would expect to find in soil containing alluvial gold had been washed into the holes. However, not all dolly-hole sites would have been used for milling gold ore. Some sites are located away from the Gold Belts, and they may have been used for copper or iron ore. Still another use has been suggested, to crush quartz for use as a flux in smelting iron or as a temper added to clay for pottery manufacture (Cooke 1964).

Care has been taken in selecting sites for inclusion in Fig. 5.3, since site reports which give inadequate descriptions of the sites may be referring to grain querns rather than to dolly holes or to grinding grooves, as described above. In addition to the cluster of dolly-hole sites marked in the Shurugwi
Figure 5.3. Distribution of mineral-ore-reduction sites.

area, a further ten are known to exist in the same area. These have been omitted simply because a map on this scale restricts the amount of detail that can be included. Moreover, the report of the milling site near Morven Mine admits that a great many similar but smaller sites, with troughs and dolly holes, were seen on nearby kopjes, although details were not given. This indicates that there are probably a great number of unrecorded, ore-reduction sites throughout the country.

This project aims to show, as far as possible, any associations between metal-processing sites and archaeological traditions. The problems in assuming a relationship between material culture and the dolly holes or grinding grooves which are found at the same site have already been discussed by some authors (Garlake 1971; Huffman 1974a). Any connection with material
culture can only be implied, because dolly holes are almost always on surface outcrops of rock, not in sealed, stratified deposits. However, Garlake does concede that, where a single occupation deposit exists and the occupation debris covers the same area as the dolly holes, it is fairly likely that the two are connected (Garlake 1971, pp. 160–2; 1973a, p. 159). The list of sites where dolly holes (milting sites) have been found is given in Appendix 3, and any cultural associations will be considered in the discussion in Chapter 8.

5.3. Gold smelting sites

After the gold dust had been separated from the ore by reduction at milling sites, most of the gold was probably transported in porcupine quills to the coast for export. In the nineteenth century, Baines and Selous wrote of gold dust being purchased in porcupine- or vulture-quill containers (Wallis 1946, pp. 788–9; Selous 1893, pp. 89, 353). Furthermore, during archaeological work at the Chibune site in Mozambique, an informant disclosed that traders coming to the coast from the interior carried gold dust in porcupine-quill containers attached to their belts (Sinclair, pers. comm.)

The gold dust was sometimes carried to the coastal markets by the producers themselves or by traders, and in other instances merchants from the coast journeyed inland to the plateau to obtain gold from the producers. A proportion of the gold dust would have been paid to local rulers as tribute, and some of this may have been used by the rulers as an exchange commodity (Beach 1980, p. 110; Mudenge 1988, pp. 161–94). Meanwhile, some of the separated gold was certainly smelted locally, perhaps for manufacture into items of personal adornment for local use. Few examples of gold-smelting sites have been recorded. Bent reported that he found crucibles which must have been used for smelting gold at Great Zimbabwe. The crucibles were made of clay and specks of gold were visible in their glazed surfaces. Smooth pebbles found together with these crucibles had been used for burnishing golden objects, since they still had particles of gold sticking to their surfaces (Bent 1892, p. 216). Hall and Neal claimed to have found crucible fragments, tuyère fragments or even furnace remains, each with gold adhering to them, in twenty-three separate ruins throughout Matabeleland (Hall & Neal 1902). Their long list of sites with rich finds of gold-smelting crucibles seems somewhat far-fetched, and it is impossible to know to what extent these early reports of gold-smelting tools are accurate. Hall’s work was notoriously unscientific and his reports cannot be relied upon (Garlake 1973a, p. 71).

Ceramic fragments with gold particles embedded in them have since been found during scientific archaeological investigations, but on a more modest scale than in the picture painted by late-nineteenth-century treasure hunters. During excavations in the Maund Ruin at Great Zimbabwe, a piece of a vitrified clay set to smelt gold (C. Mauch Ruin (C. bronze, but the Thompson 1931 adhering to them provided a core piece of a clay c excavations at a ard’s Kopje cee Huffman 1974b.

During earth-Farm near Maz these were pots of gold visible but also a block and a large quartz association with Dambarare. Sh vitrified sur Nhunguza. Dar Nhunguza is a v

Quite recent eral Zimbabwe.

surfaces were ru in the Ziml can be seen on pottery with sla as a result of ex a crucible with a site in the M market at Mass.

A number of on archaeological collections. In the minerals were coated onto all Metallurgy in that these c present in the s
vitrified clay scorifier was recovered, although this was not necessarily used to smelt gold (Caton-Thompson 1931, p. 26). Two more were found in the Mauch Ruin (Caton-Thompson 1931, p. 117). One contained particles of bronze, but the other had visible globules of gold attached to it (Caton-Thompson 1931, plate XXI, 2, number 5). Several more potsherds with gold adhering to them were found on a platform at Mbauuru Hill, where ceramics provided a connection with Mapungubwe (Summers 1952). Another small piece of a clay crucible bearing specks of gold was found in a test pit during excavations at Ntabazikamambo. The cultural layer is associated with Leopard’s Kopje ceramics, probably of the Woolandale phase (Robinson 1966; Huffman 1974b, p. 121).

During earth-moving operations on a dam-construction site on Doxford Farm near Mazowe, several archaeological relics were recovered. Among these were potsherds with partially vitrified surfaces, one with a tiny globule of gold visible on the vitrified surface. Other finds included Maxton pottery, but also a block of glass beads which had fused together (Izzett, pers. comm.) and a large quantity of broken and melted glass, which would indicate an association with the surrounding remains of the Portuguese settlement of Dambarare. Sherds fitting this description, with visible globules of gold on the vitrified surfaces, have also been found at Danangombe (Dhlo Dhlo) and Nhunguza. Danangombe is a stone building associated with Khami, and Nhunguza is a walled site of the Zimbabwe Tradition.

Quite recently, further evidence of gold-smelting has been found in northern Zimbabwe. Seven sherds of pottery bearing vitrified slag on their inner surfaces were recovered during excavations at Garaubikirwe, a stone-walled ruin in the Zimbabwe Tradition (Mahachi 1991, p. 236). Tiny specks of gold can be seen on some of them, if observed under a microscope. Sherds of pottery with slag and droplets of gold on their surfaces have also been found as a result of excavations at Zwongombe (Soper & Pwiti 1992). Furthermore, a crucible with gold particles adhering to it has been reported from Baranda, a site in the Mount Fura area which has been associated with the Portuguese market at Massapa (Pikirayi 1993, pp. 80,177–8).

A number of crucibles and crucible fragments which have been collected on archaeological sites are kept in the Zimbabwean Archaeological Survey collections. In most cases, there is no indication among the records of which minerals were smelted in each crucible. Vitrified slags of various colours are coated onto almost every crucible, but specialists from the Department of Metallurgy in the Ministry of Mines, when consulted, expressed the opinion that these colours could not be used to determine which minerals were present in the slags. It was decided to test some of the samples using X-ray fluorescence (XRF) to detect which elements were present. The aim of the
exercise was to find out the composition of any residue which might have been left over after the molten metal had been poured from the crucible. Consequently, it was possible in most cases to determine whether each crucible had been used for smelting copper or gold. None of the samples from complete crucibles showed any traces of gold. The results indicated that the thick-walled, cup-shaped crucibles with external slag vitrification all seemed to be intended for copper-smelting. Gold was only detected on broken sherds with thinner, flatter dimensions, so they must have come from larger pots with more open shapes than the small, cup-shaped crucibles. The inner surfaces of the broken sherds were vitrified, whilst the outer surfaces showed no sign of heating. The way in which these crucibles were used and the reasons for their differences in shape have not yet been investigated. Samples from crucibles of the broken-sherd type from Danangombe, Ntabazikamambo, Doxford and Garubikirwe were subjected to the XRF tests. All four contained copper and zinc, two also contained nickel and two included silver. All of these metals may be found in the same ore as gold (Mapiravana, Department of Metallurgy, pers. comm.). The results of the XRF tests on these four crucible sherds are shown in Table 5.1.

Table 5.1. Results of XRF tests on crucible sherds. Major (XX) and minor (x) elements present in sample.

<table>
<thead>
<tr>
<th>Site</th>
<th>Si</th>
<th>K</th>
<th>Ca</th>
<th>Ti</th>
<th>Fe</th>
<th>Ni</th>
<th>Cu</th>
<th>Zn</th>
<th>Au</th>
<th>Pb</th>
<th>Rb</th>
<th>Sr</th>
<th>Zr</th>
<th>Ag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garubikirwe</td>
<td>XX</td>
<td>x</td>
<td>x</td>
<td></td>
<td>XX</td>
<td>XX</td>
<td>XX</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Danangombe</td>
<td>XX</td>
<td>x</td>
<td>XX</td>
<td>x</td>
<td>XX</td>
<td>x</td>
<td>x</td>
<td>XX</td>
<td>XX</td>
<td>x</td>
<td>XX</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Doxford</td>
<td>x</td>
<td>x</td>
<td>XX</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>XX</td>
<td>XX</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Ntabazikamambo</td>
<td>XX</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>XX</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

Apart from crucible sherds, no other signs of gold-smelting have survived in the archaeological record, with the possible exception of the gold-bearing quartz crystal which was recovered during excavations at the Gumanye site of Chivowa Hill (Sinclair 1991a).

In summarising the cultural context in which crucibles were found, it is possible to argue that signs of gold smelting have come primarily from sites associated with the Zimbabwe and Khami Traditions. In addition, one example has been associated with the Gumanye phase at Chivowa Hill near Masvingo, one with the Woolandale phase at Bulawayo, one with the Mapungubwe phase at Mbauru, and one with the Portuguese presence near Mazowe.
5.4. Gold-smithing

If evidence of gold-smelting is scarce in the archaeological record, signs of gold-smithing techniques are even less common. Some indication of the types of tools which should be found can be gained from the gold ornaments themselves. These range from beads made in a mould or made from foil, bangles made from wire with a rectangular cross section wound in a tight spiral around an inner core and, gold foil used for plating to tiny, solid tacks or studs which were used for fastening the gold foil onto objects such as animal figurines or house decorations. Yet the instruments which were used to manufacture these articles do not seem to have survived in any quantity in the archaeological record. Consequently, it is very difficult to ascertain where and by whom gold was being manufactured into ornaments for local use.

Gold and copper wire would have been made by pulling a long strip of the hot metal through a series of holes with successively smaller diameters. Copper wire is a common occurrence on archaeological sites and these draw-plates would have been quite widely used. However, the few that are mentioned in the literature were made of iron, such as those recovered from Ingombe Ilfele, so they would probably have been smelted and reshaped into other useful tools once they were no longer useful for wire manufacture (Fagan, Phillipson & Daniels 1969, pp. 64–73, 97). Hall and Neal mentioned a drawplate for drawing wire found at Danangombe (Dhlo Dhlo) (Hall & Neal 1902, p. 93). Garlake also illustrated pincers and a draw-plate, both made of iron, recovered by Hall and Neal at Great Zimbabwe (Garlake 1973a, plate 62). Another drawplate was found at the Golden Hind Claim in the Gwanda area, but ‘unfortunately no cultural association was recorded’ (Summers 1969, p. 74).

Several examples of bead moulds may be cited. Two photographs of bead moulds have been published, one probably made of soapstone and coming from excavations at a Zimbabwe Tradition site and the other made of sandstone (Caton-Thompson 1931, plate XIX, 2, number 1; Burchett 1965d). A bead mould made of soapstone is on display at the Natural History Museum in Bulawayo. Another, made of clay, was found at Thaba’s Chau, a Zimbabwe Tradition, stone-walled building in the Gweru area. A pair of bead moulds made of small blocks of soapstone, one with three holes and one with only one, has been found in the Shurugwi area near Tebekwe Mine.

Signs of manufacture at the interesting site on Macardon Claims were beads which had not yet been used. Gold is inclined to wear very quickly with use, yet the gold beads found on the Macardon Claims showed no signs
of use wear at all. Bearing in mind all the evidence for gold-working on the site, these beads must have been manufactured here too (Jones 1939).

Ingot moulds have also been found in the Zimbabwean archaeological record. They are usually in the shape of long, straight bars or St Andrew’s crosses, cut in soapstone. Examples of both kinds have been found at Great Zimbabwe. A relatively small, soapstone mould for a bar ingot was found at Black Adder Ruin, a stone-walled, Zimbabwe site near Chegutu. Gold was reportedly scraped from a cross-shaped, ingot mould found at a small mine near to Chinsho, although the cross-shaped moulds have the shape of copper ingots found in northern Zimbabwe. Gold-ingot bars of this size and cross shape are not known, except perhaps in one unconfirmed instance – a bar of gold with fish-tailed ends weighing 32 ounces (995 grammes) was apparently found in an old, circular mine-shaft which was presumed to have been Portuguese (Tilley 1992).

These few signs of gold-smithing technology indicate that such activities were carried out in the context of Zimbabwe and Khami stone buildings, in addition to the evidence from the Mapungubwe site at Macardon Claims. There is little doubt that a number of moulds and other important artefacts must be in the hands of private collectors, and this situation can only hinder archaeological research.

5.5. Gold artefacts from archaeological contexts

Considering the large number of gold sources which were mined during the country’s early history, correspondingly large collections of gold artefacts from archaeological sites may be anticipated. However, very few gold relics have been recovered (Fig. 5.4). The most obvious reason is that gold is a valuable asset, so it is unlikely that more than a few stray fragments would be lost and find their way into the archaeological record. Exceptions to this would be deliberate offerings deposited with human burials. Another explanation for the imbalance is the export trade in gold. This point is particularly relevant to the Zimbabwean situation, where a changing emphasis on the local consumption of gold is manifest in the archaeological record, supported by historical manuscripts which have made reference to the export of gold from this region.

The primary difficulty with the collection of information about gold relics in Zimbabwe is that much gold was stolen from ruin sites at the end of the nineteenth century. Some references from the period in question specify the amount of gold taken from sites, so it is possible to gain some idea of the quantity of gold jewellery which at one time existed in the archaeological record. In 1894, Burnham was given rights over the Dhlo Dhlo ruin (Danan-gombe) by Cecil Rhodes and he proceeded to collect 641 ounces (19935
Figure 5.4. Sites where gold artefacts have been found.

grams) of gold ornaments from the site (Burnham 1927, pp. 210, 216). In 1895, Tom Peachey took an additional 100 ounces (3110 grams) from Dhlo Dhlo (Summers 1969, p. 210). In the same year, Neal, Johnson, Leech and Campbell found 230 ounces (7153 grams) of gold at the Mundie (Mupandashangu) ruin, whereupon Neal and Johnson formed the Rhodesia Ancient Ruins Company, which was granted by the British South Africa Company the ‘right to explore and work for treasure’ in the country’s ruins, with the exception of Great Zimbabwe (Hall & Neal 1902, p. 250; Garlake 1973a, p. 70). However, this monument had already been subjected to an unknown amount of treasure-seeking; for example, Burnham reported that he had a gold ring made ‘from the beads washed from the Zimbabwe ruins’ (Burnham 1927, p. 216). Later, Hall claimed to have found gold worth about 4000
pounds sterling, during his own 'excavations' at Zimbabwe (Masey 1911). It is not known whether Hall was estimating the gold at its bullion value or at its value in terms of archaeological relics, but it is thought probably the latter (Summers 1969, p. 190). Prime responsibility for the theft of gold relics from sites lay with the Rhodesia Ancient Ruins Company. It was estimated that, in the five years from 1895 to 1900, more than 2000 onces (62.200 grams) of golden ornaments were taken from ruin sites in Matabeleland (Hall & Neal 1902, pp. 91, 190–570). In addition to the Rhodesia Ancient Ruins Company, other prospectors dug around in ruin sites and collected gold ornaments 'varying from a few beads up to 60 ozs' (Hall & Neal 1902, p. 91).

Three hundred and fifty-seven ounces (11103 grams) of gold stolen from 'Ancient Ruins' until 1896 was even declared officially and published alongside outputs from mines and alluvial sources (Rhodesian Chamber of Mines 1896). It is impossible to know precisely how much gold was taken from monuments. Subsequent Chamber of Mines Annual Reports did not give gold outputs so they are not a useful source of information in this respect.

One of the problems in using Hall and Neal's report of gold relics is that none of the properly documented, archaeological excavations at Zimbabwe Tradition ruins have recovered anything approaching the quantity of gold claimed by Hall and Neal to have been found. The gold caches described by them may have been exceptional, since the Ancient Ruins Company recovered an average of less than ten ounces (311 grams) from the ruins, some producing no gold at all. None of their finds can now be traced (Garlake 1973a, p. 70). Most of the gold relics discovered at archaeological sites in Zimbabwe have been listed by Walker (1991). At scientifically excavated sites, a few beads at most are usually all that has come to light. However, the spectacular gold burials claimed to have been found by Neal and his accomplices are probably not fictitious. A photograph reproduced in Plate 5.3 shows a group of men displaying a selection of their stolen gold. The beads, wound-wire necklaces and gold foil shown in the photograph match known gold ornaments from Zimbabwean archaeological sites, and there is no reason to suppose that those displayed in the photograph were counterfeit. Some of the rich finds from Dhlo Dhlo, Mtelegwa and Mundie (Mupandashangu) were also photographed (Hall & Neal 1902, pp. 90, 94). Moreover, a number of gold ornaments are in the possession of the National Museums and Monuments of Zimbabwe. These include necklaces of beads or wound wire, gold foil and gold tacks. Their provenance in most cases is no longer known. Most were recovered from sites of the Zimbabwe and Khami Traditions, with additional finds at Inkombe Ilele, Mapungubwe, Macardon Claims and Mbauru.

5.6. Imp...
5.6. Imported goods from archaeological sites

It is important to try to establish when imported goods first appeared in Zimbabwe and when their importation escalated. The increase in imported goods at local sites marks an increase in participation in the wider trade network and means that more local goods were made available for export. Most of the imported goods which survive in the Zimbabwean archaeological record are glass beads. They are found only in small numbers in occupation deposits, even on more recent sites. The larger numbers found in grave deposits give a better indication of the number of beads which may have been in circulation.

Plate 5.3. Messrs Neal, Johnson, Campbell and Leech of the Ancient Ruins syndicate, displaying gold stolen from Great Zimbabwe.
Many imports are found at Zimbabwean archaeological sites (Figs 5.5, 5.6, 5.7), demonstrating that external trade was an important factor in the country's history, but it is not easy to assign dates to each occurrence. By far the majority of exotic goods have been found at the surface of multi-component sites, where it is impossible to define the period to which they belong. The only instances which are useful are those in which the goods themselves can be dated or in which imports were found within datable, stratified, archaeological deposits. On the basis of these examples, an outline of the growing importance of external trade in the local economy can be developed.

Earlier first millennium AD. In south-eastern Zimbabwe, imported goods are found in conjunction with the earliest farming and metal-working communities in the country. More than a dozen glass beads were recovered in association with stamped ware during the first excavations at the Gokomere Tunnel site (Gardner 1940). During subsequent excavations, twelve more glass beads were recovered from two layers, both containing stamped ware. Eight of these were from the lowest layer, which gave a radiocarbon date of 530 ± 120 (SR-26) (cal AD to 570-590, Huffman 1980b). In addition, a complete conus shell from the East African coast was found in this layer (Robinson 1963). A more recent examination of the pottery from these two excavations has discovered a Gumanje element among the pottery, which probably dates to between AD 1000 and 1200 (Huffman 1976). Although this has raised some doubt as to whether in fact the beads from the lowest levels of the site can certainly be associated with the Gokomere phase, it need not exclude the early date for imported beads, because they are found at several other sites with Gokomere pottery. Mabweri, a single-component site with Gokomere pottery, has also yielded some interesting finds. Two white glass beads and one red-on-green glass bead and two marine shells were recovered from a midden deposit (Robinson 1961). Radiocarbon samples from the midden gave dates of AD 180 ± 120 (SR-43) (cal AD 180-200 and 235) and 570 ± 110 (SR-79) (cal AD to 600 and 615, Huffman 1980b). Robinson commented that these three beads from Mabweri represented early trade between the coast and the Zimbabwean interior (Robinson 1967a). At Runyan Ruin, excavations produced two glass beads from the deepest level, which was identified culturally by R1 sherds, now known broadly as the Gokomere Tradition (Robinson 1949, section drawing, site 2031:AA.2, Archaeological Survey of Zimbabwe; Schofield 1948, pp. 87-95; Huffman 1971).

A few imported goods have also been recovered from some of the earliest farming settlements in southern Zambia. East-coast cowrie shells were found in the earliest deposits in two mounds on the Batoka plateau, the deposits...
Figure 5.5. Archaeological sites with imported goods in datable deposits: first and early second millennia.

dating to AD 455 ± 95 (SR-123) and AD 440 ± 85 (GX-1114) respectively. These dates have been calibrated to the mid sixth century AD (calibration according to Stuiver & Pearson 1986). The Zambezi valley is the only likely trade route for these few imports. Exports from this period were almost certainly restricted to local raw materials (Fagan 1969).

Later first millennium AD. Throughout most of the country, imported goods are found in increasing numbers during the later first millennium AD. In the north-east, excavations at Coronation Park yielded 181 pale-blue and pale-yellow glass beads from a burial (Whitty 1958). The site was dated to 710 ± 100 (N-978) (calibrated to 700–750, Huffman 1980b). A few more imports were correlated with later-first-millennium ceramics in the eastern highlands. At the Ziwa 'Acropolis', two glass beads were recovered from a
Figure 5.6. Archaeological sites with imported goods in datable deposits: eleventh to fifteenth centuries.

layer with Coronation sherds, and at site IRF XIII, a few, early, bluish-green, snapped cane glass beads and one blue-green, star-shaped bead were excavated from midden deposits dated by Coronation sherds (Summers 1958, pp. 45–6, 94).

In the south, later-first-millennium involvement in external trade is marked at several Zhizo sites. Two dark-blue glass beads were found during excavations at Ngezi, a site with Zhizo sherds. In fact, the presence of these early beads and a few sherds of Gokomere pottery suggested that there may be a village of the Gokomere period stratified below the Zhizo one (Huffman 1973a), suggesting an even earlier date for the imported beads. Zhizo pottery in association with imported goods is found at several sites close to the mining areas around Bulawayo. At Zhizo Hill itself, three dark-blue and six yellow, tran....
yellow, translucent, cylinder beads were found with Zhizo ceramics (Robinson 1966). At Makurup, two yellowish/green, one bluish/green and twelve blue glass beads were found at a site dated 690 ± 65 (N-1275) (calibrated to 690 and 695, Huffman 1973b; 1980b). The Zhizo phase at the multi-component, Leopard’s Kopje Main Kraal site yielded 188 glass beads (Huffman 1974b, p. 75). At Ntabazikamambo, a ‘garden roller’ bead and two cylindrical beads with snapped ends were found in the earliest levels with a stamp-decorated sherd (Robinson 1966). A date of AD 870 ± 100 (SR-68) from the site has shown that the earliest occupation at Ntabazikamambo was probably of the Zhizo phase (Huffman 1974b, p. 97).
Ninth to twelfth centuries AD. Tenth- and eleventh-century sites in the north-east have rarely been associated with imported trade goods. At Maxton Farm, only one bluish-green, snapped-cane, glass bead was excavated, and it is typical of the first-millennium beads found in Zimbabwe (Garlake 1967a). On Lowlands Farm, an excavation recovered one dark-blue and one yellow glass bead associated with Maxton Farm pottery on a single-component site (Izzett 1977). At Chitope, a single, greyish-blue, glass bead, characteristic of late-first-millennium beads was excavated, and a radiocarbon sample from the site produced a date of 1110 ± 95 (SR-163) (Garlake 1969b) (cal AD 1100–1140 and 1180, Huffman 1980b).

In the south-east, there seems to have been far more external-exchange activity during this period. Forty-one, dark blue, snapped-cane, glass beads were excavated from a Gumanye site at Boggie’s Hill (McDonald 1979). In addition, a large collection of glass beads and several marine shells were excavated from a Gumanye site at Chivowa Hill (Sinclair 1991a). More than 100 glass beads were recovered from deposits marking an initial phase of occupation, and more than 120 from a second phase. The beads were mainly blue and Indian red, but there were also a few green, yellow and some, reworked, ‘garden roller’ beads. Radiocarbon samples from Chivowa Hill dated these occupations to the early eleventh and twelfth centuries (Sinclair 1987, p. 168).

In the south-west, goods imported during the Mambo phase have been found at two sites. The Mambo phase at Leopard’s Kopje Main Knoll, dated between the tenth and thirteenth centuries, yielded twenty glass beads altogether (Huffman 1974b, p. 75). Meanwhile, two glass beads recovered from excavations on Mawala Hill were found in association with Mambo ware (Robinson 1968).

Contemporary sites further south are typified by Bambandyanalo (K2) in the northern Transvaal. Here, excavations recovered many glass beads (Gardner 1963, pp. 94–132). Some of them are known as ‘garden roller beads’, and there was evidence to show that these were actually manufactured at the Bambandyanalo site, although the glass must have been imported (Gardner 1963, pp. 7–8).

Early second millennium AD. Sites in the north-east with Harare pottery, dated between the late twelfth and early fifteenth centuries, are predominantly burial sites, so prestigious imported goods have been excavated in larger numbers. At Graniteside, green, wound, glass beads were found and in one of the burials 3000 small glass beads had been placed adjacent to a ceramic bowl (Goodall, n.d.). The Harare burial at Mount Hampden produced nine red glass beads (Garlake 1967b). Burials which were excavated at Marlborough produced more than 600 black and a few red glass beads.
Further north than Harare, an unusual, communal, burial site in a cave on Mbazwawa Hill belonged to the Musengezi phase. It was dated by two radiocarbon tests: (SR-100) AD 1270 ± 95 (calibrated to 1260–1290 and to 1330) and (SR-101) AD 1285 ± 95 (calibrated to 1240 and 1340, Huffman 1980b). Coloured glass beads numbered almost 2000 (Crawford 1967a). At Ruanga, excavations revealed a Musengezi deposit stratified below the Zimbabwe occupation phase (Garlake 1973b). Eight coloured glass beads were recovered from the Musengezi level, which gave a radiocarbon date of AD 1175 ± 100 (N-1147) (calibrated to 1210 and 1240, Huffman 1980b). Also in this region, a sherd of Chinese blue-and-white porcelain with a likely fifteenth-century date was found near the surface at Chitope (Garlake 1969b).

On the north-western border, burials at Ingombe Illede were well equipped with prestigious items, including a number of conus-shell discs and cowrie shells from the east coast, two Islamic amulets, and a number of glass beads (Fagan, Phillipson & Daniels 1969, pp. 137–8). Judging by the types found these glass beads were believed to have been imported to Ingombe Illede between the eighth and the eleventh centuries AD (du Toit 1969). However, revised radiocarbon dates attributing the central burials at Ingombe Illede to the fourteenth century may necessitate some adjustments to the site’s bead chronology. Chedzugwe, a single-component, village site with similar ceramics to Ingombe Illede, was dated to the fifteenth and sixteenth centuries (Garlake 1970). Surprisingly, the site yielded only one red glass bead. Similarly, excavations at Nyarinde, a nearby site with comparable pottery, yielded only one bluish-green glass bead.

At Woolandale, close to Bulawayo in the south-west of the country, a total of thirty-two glass beads of various colours were recovered from five layers in all (Robinson 1966). At Enyandeni, two small, black glass beads were excavated from a Woolandale village site (Robinson 1966). Most of the thirty-eight glass beads from Ntabazimambo probably belong to a Woolandale occupation, since the ceramic assemblage from the site is predominantly Woolandale (Huffman 1974b, pp. 7, 96). Meanwhile, at another Woolandale site in the Matapos National Park, excavations recovered no less than 300 glass beads (Archaeological Survey of Zimbabwe site number 2028:DA:30).

In southern Zimbabwe, several imported goods were recovered from the midden deposits on the Macardon Claims site. Four sherds of celadon porcelain appeared to date from the early Sung Period between the tenth and the thirteenth centuries. Five marine shells had been used as beads, and a string of imported glass beads could be compared with beads from a midden on the Hill Ruin at Great Zimbabwe (Jones 1939). Ceramics from Macardon Claims
have been compared to Mapungubwe wares. Another Mapungubwe site at Mtetengwe River yielded eighty-one glass beads with broad similarities to other Woolandale bead assemblages (Garlake 1968, pp. 12–3). During excavations at Mapela, a Mapungubwe-related site on the Shashi River, 338 glass beads were recovered. Meanwhile, at Mbauru, another site with ceramics similar to those from Mapungubwe, only one small, green bead was found. At Mapungubwe itself, a short distance south of the Limpopo River, glass beads were abundant, numbering in excess of 1000 (Fouche 1937, p. 26; Gardner 1963, pp. 133–64; Garlake 1968, p. 13). Sea shells were also found here, cowries and Polinices, together with two shreds of Chinese celadon porcelain dated to the Sung Period, the twelfth to the fourteenth centuries AD (Fouche 1937, pp. 26, 110).

Zimbabwe Tradition stone buildings. It would be a large undertaking to compile an inventory of the imported goods found at Great Zimbabwe itself. Suffice it to say that these included glass beads, Chinese celadon porcelain of the tenth to thirteenth centuries, Arabian glass, Persian faience and coral. Zimbabwe Tradition sites often produce many imported trade goods, especially glass beads, Chinese porcelain, east-coast sea shells and occasionally the marine shell ndoro. In addition to Great Zimbabwe, this has been demonstrated at Chiwona, Muchuchu, Matendere, Chivumani, Vuhwa, Chipadze’s, Ruanga, Nhunguza, Cornucopia, Chamabvefa and Tsindi (Caton-Thompson 1931, pp. 126, 141, 147, 155–61, 219–24; von Sicard 1957; Robins & Whitty 1966; Garlake 1973b; Prendergast 1979; Huffman 1979; Rudd 1984). According to the Zimbabwean Archaeological Survey records, imported glass beads have also been found within Zimbabwe Tradition structures at Erin Farm, Chironga, the Mutare Altar site, Musara, Pamuyu, Nyammugwa, Mphungura, Chamungwa, Little Umukwana, Chipukuswi, Black Adder and Chamavuva.

Later second millennium. Imported goods from Khami Tradition sites in the south-west, and from in and around Portuguese settlement remains in the north-east demonstrate that trade between the Zimbabwean interior and the coast was abundant during the late second millennium, and this is supported by Portuguese historical literature. With the exception of stone buildings in the Nyanga mountains and in the Mount Darwin area, other sites which probably date from between the sixteenth and the nineteenth centuries AD lack thorough investigation so it is difficult at present to reconstruct the pattern of the import and export trade.