The Anatomy of a Mesopotamian City



Survey and Soundings at Mashkan-shapir

Elizabeth C. Stone and Paul Zimansky

THE ANATOMY OF A MESOPOTAMIAN CITY: SURVEY AND SOUNDINGS AT MASHKAN-SHAPIR

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by Elizabeth C. Stone and Paul Zimansky

with Epigraphy by PIOTR STEINKELLER

and Contributions by VINCENT PIGOTT, LISA WELLS, AND TONY WILKINSON

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То

P. E. MACALLISTER

and

George F. Dales, Jr.†

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Preface

An undertaking of this kind is necessarily a collaborative process from start to finish. We have listed the members of our field teams in the body of the text but must stress here how grateful we are for their hard work and professionalism under conditions that were far from ideal. The institutions that provided generous financial support are also detailed in our discussion of the history of the work, and we cannot thank them enough. Many more individuals and institutions, however, played a crucial role in both the field and analytical end of the Mashkan-shapir project.

Archaeological field work in Iraq would not have been possible at all were it not for the consent and support of the Iraq Department of Antiquities and Heritage. Its Director, Dr. Mu'ayad Said Damerji, issued us a permit at a time when work was seriously constrained by wartime conditions and in the course of the project helped us over many other administrative hurdles. In Baghdad, we were aided enormously by the British Expedition to Iraq, which was directed by Dr. Jeremy Black when we began and by Dr. Roger Matthews when we finished. They provided us with a home away from home, frequently providing food and shelter to the directors when they were in Baghdad and occasionally accommodating the entire field team. They opened their wonderful library to us and were generous with their personal expertise. We could not have initiated work at Mashkanshapir itself without the help of Nicholas Postgate, who most kindly allowed us to use his dig house at Abu Salabikh in 1987 and made available all of his expedition's furniture when we moved our base to Shomeli in 1988. Nor would the project have made it to the starting gate had not James Bullock of the United States Foreign Service taken us under his wing in 1986 and 1987. Members of the U.S. Embassy welcomed us during the 1987 season, housing the entire team while we were in transit through Baghdad. We would also like to express our gratitude to the people of Shomeli for making us feel so welcome in their town from 1988 through 1990. We owe special thanks to our Egyptian cook, Mohammed Attiyeh, who single-handedly ran the house, planned the meals, did the shopping, fixed our wheelbarrows, and in the process kept us healthy, happy, and well fed.

We are in the debt of many others who helped us after the field stage of this project had come to an end. The National Endowment for the Humanities phoned soon after the Iraqi invasion of Kuwait to ask what they could do to assist us and readily agreed to our using the funds originally granted for the 1991 field season to purchase computer hardware and software needed to analyze the survey data. The patience of the technical support personnel of the Erdas Corporation and the Environmental Systems Research Institute was absolutely essential in teaching us the intricacies of image analysis and GIS from scratch, well before these became a common subject in archaeological instruction. This book was prepared in draft form in 1993 when Stone was on sabbatical at Harvard. The support of the Department of Near Eastern Languages and Civilizations and access to the Harvard Library system greatly facilitated our research. Prof. George F. Dales Jr. of the University of California, Berkeley, generously donated his Mesopotamian library to the project and thus facilitated bibliographic research in our home institutions, which lacked many of the library resources we needed. We must also acknowledge the Oxford library system, and especially the Griffith Institute, whose volumes have also been consulted in the course of this project. Greatest of all is our debt to P. E. MacAllister. He provided financial support throughout the whole enterprise, from the seed money to get the initial fieldwork underway to a subvention of publication costs for this volume. Beyond this, he helped to make our findings available to a wider audience and never failed to provide intellectual encouragement.

A final and somber note must be added as the final proofs of this manuscript reach us. Dr. John Russell, acting as the Deputy Minister for Culture of the Coalition Provisional Authority of Iraq, flew over Mashkan-shapir in a military helicopter in January, 2004, and photographed the site's nearly total devastation by looters' trenches. They are so numerous, regularly laid out, and closely spaced that almost nothing remains for legitimate excavation. All comments in our text about the potential of future research at the site must therefore be recognized as wishful thinking. Nergal, the god of human suffering, has brought the archaeology of his erstwhile city to an end.

Stony Brook, N.Y., and Boston, Mass. April 2004

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Chapter 1 Research Design

The Mashkan-shapir project developed from the premise that urban layout and the distribution of artifacts within a city reflect broader patterns of social and political organization. The study of an entire urban environment—in as narrow a time frame as possible, in which the location of major institutions, avenues of communication, patterns of residence, locations of specialized activities, and distributions of wealth were plotted on the basis of archaeological evidence—was seen as a means of revealing essential configurations of human relationships and providing a benchmark that could used in comparative study of early complex societies in general.

In many ways, the southern alluvium of Mesopotamia offers an ideal local to begin such a study. Not only is there a large body of excavated material from urban contexts that establishes basic chronology and defines the essential social, political and economic institutions, but the extensive written record provides a check on conclusions derived from interpretations of archaeological data alone. The primary material from which architecture is created, mud brick, preserves reasonably well so that private and public buildings can be identified with relative clarity. Patterns of circulation remain visible in traces of canals and streets.

Urban organization has nevertheless proven an elusive subject in previous research. The better known Mesopotamian cities were occupied and re-occupied over several millennia, and are now archaeological sites of such scale and complexity that they cannot be studied as whole entities in any specific epoch. We sought out the ruins that eventually proved to be those of Mashkan-shapir because they appeared to offer a way around this problem. The first survey evidence indicated that the site, though large and manifestly urban, for the most part belonged to a single period of occupation.

One thing that was not a planned objective of the project was the rediscovery of Mashkanshapir itself. Only after the first season's work did we begin to suspect the ancient identity of the Old Babylonian city on which we were working and it was not until the second season that this suspicion was confirmed by unambiguous epigraphic evidence. This discovery, however, was by no means unwelcome or incompatible with our research design. The recognition that we were dealing with ancient Mashkan-shapir provided us with historical context, a partial explanation for the rather unusual conditions that recommended the site to us in the first place, and a clearer perspective from which to assess the broader significance of our findings.

Theoretical Approaches in Mesopotamian Socio-Political Relations

Two contrasting views of Mesopotamian civilization can be found in scholarly literature. The first emphasizes social inequality, differential access to wealth (Pollock 1989), especially in grave goods (Wright 1984; Pollock 1991), and the dependent status of those involved in state enterprises (Diakanoff 1972; Gelb 1976; Zagarell 1986; Pollock 1999). The second does not deny the existence of social stratification in Mesopotamia, but places more stress on participation in decision-making

by a multiplicity of individuals (Jacobsen 1943, 1957; Postgate 1992: 73–83), separation of temple and palace as the two key institutions of collective action, (Steinkeller 1987a; Postgate 1992: 109– 54), the role played by kinship groups (Stone 1987) and limitations imposed on royal power (Postgate 1992: 301). From this perspective the absence of any clear hereditary aristocracy, the possibilities for social mobility (Steinkeller 1987b), the abiding role of the assembly, and the priority of symbolic over expedient aspects of kingship (Postgate 1992: 260–74) are noteworthy.

The resolution of this issue is not only of interest to those whose area of specialization is ancient Mesopotamia. Emphasis on structural uniformities among early states in earlier theoretical literature (Fried 1967; Service 1975; Adams 1966) has been increasingly eschewed by scholars more intrigued by the differences between them. This change is reflected by the emergence of the concept of the segmentary state (Southall 1956, 1988), and contrasts drawn between city states and territorial states (Trigger 1985, 1993: 8–14), congruent and non-congruent states (Eisenstadt, Abitbol, and Chazan 1988), and hierarchy vs. heterarchy (Ehrenreich, Crumley, and Levy 1995; Marquardt and Crumley 1987). A more refined understanding of the character of Mesopotamian sociopolitical organization is directly relevant to advances in general theories of the early state.

Although archaeologists on both sides of the Mesopotamian debate have entered into active discussion (Pollock 1989; Hole 1989), their arguments have been directed almost entirely to the limited data available for the earliest, pre- and proto-historic, stages of development. Some note the lack of differentiation in most graves and settlements immediately prior to the emergence of the state (Hole 1983, 1987, 1989; Oates 1977) as support for the less rigidly hierarchical position. On the other hand, marked status differences can hardly be denied in the Early Dynastic Royal Cemetery at Ur (Pollock 1991). Archaeologists working in later, historical periods, in which cuneiform documentation abounds, have generally not addressed the specific issues of the nature of inequality and the distribution of power.

The lack of interaction between these specialists is regrettable. In Mesopotamia, unlike other areas in which early states emerged, written documents are found within meaningful archaeological contexts and allow hypotheses based on archaeology to be tested against epigraphic evidence, and *vice versa*. Neither textual nor archaeological data provide anything like a complete view of ancient Mesopotamia, but in combining them some of their inherent shortcomings can be addressed. For example, only selected aspects of ancient society were treated by the written record, and the biases of the writers are indisputable, if not always transparent. While the process of selection that generates the archaeological record is less a product of human design than the one that governs the creation of tablets, post-depositional transformations and interpretive difficulties, complicate and sometimes obliterate its potential for socio-economic reconstruction (Schiffer 1972, 1983). Texts tend to focus more on the rich and powerful than on the poor and weak, whereas archaeological data shed their clouded light on all members of an ancient society equally, providing a somewhat more sensitive perspective on social differentiation and political organization. The two forms of evidence contribute differently to our understanding of the past, and nothing is gained by isolating them.

Extensive surface surveys have provided the archaeological data most often used to investigate the complex workings of the early state. These are crucial to understanding changing relationships between sites of different size and complexity (Adams 1965, 1972, 1981; Adams and Nissen 1972; Gibson 1972; Johnson 1973; Wright 1981) and even speak to the types of polity involved (Johnson 1981; Stone 1997a). However they shed no light on the interpersonal relations that lie at the heart of the issue considered here.

An alternative avenue of investigation is offered by urban sociologists (e.g., Flanagan 1993), geographers (e.g., Hall 1998), urban historians (e.g., Kostof 1991) and especially urban ecologists (Thomlinson 1969; Exline, Peters, and Larkin 1982) and anthropologists (Rotenberg and McDonough 1993) who have argued that the distribution of people and institutions within settlements is a reflection of their interrelationships. The concerns of these scholars, however, are quite different from those who study antiquity. They know from the outset what kind of society they are dealing with—usually modern, industrialized, North American and capitalistic—and seek to understand whether changes in land use might improve it. Their work suggests a new direction from which an understanding of the variability in organization of pre-capitalist, pre-industrial urban society might be approached, but not the specific models to apply.

The first step in developing them is to observe the relationship between urban organization and socio-political structure in a number of well-documented pre-industrial and pre-capitalist societies. We reexamined many of the societies that Sjoberg (1960) had studied in developing his model of an ideal "pre-industrial city" looking not for similarities as he did, but rather variability within this broad classification. Features of societies as different as medieval Florence, medieval Islam (especially in Syria), the Yoruba of West Africa, Moghul Vijayangara, Tokugawa Japan, Tibet, the Aztecs, and Incas suggest that the dichotomy identified by Trigger (1993) between territorial states (like the Inca) and city states (like the Yoruba) is mirrored in the organization of their cities. To a certain extent differences in centralization also correlate with the distinction between congruent and noncongruent states articulated by Eisenstadt, Abitbol and Chazan (1988), although the emphasis of these authors is different and not always clearly articulated.¹ Societies that fall into the city state category² are characterized by a high degree of social mobility and the consequent lack of any entrenched elite. Typically, partitive inheritance, large families, and obligations imposed on elites, mean that high status can rarely be sustained in a family for more than a few generations. As one family sinks, another rises to take its place, so although clear differences in wealth and status are always apparent, every group within society has the possibility of attaining the high status in the future.

Where status is in this kind of flux, the residential separation by class so often described as a key feature of state organization (Childe 1951; Service 1975; Sjoberg 1960, 97–98) is not possible. Instead, group formation tends to be based on kinship, occupation, ethnicity, or some other non-class basis, with the result that all residential districts contain both elites and commoners. This kind of co-residence serves a real political purpose. The elites in these tight-knit communities represent not only the interests of their own class, but also those of their neighbors as they participate in political life. The vehicle for this participation is generally a city council, which in some cases is the key decision-making body of the city and in others has more circumscribed powers. The council is not, of course, the only political player, and other major urban institutions, both secular and religious, are important.

In these societies, the isolation of the ruler from the rest of the population and his separation from the center of religion are noteworthy. The detachment of the king is deliberate, since one of his major roles is as an honest broker between the various factions in the city. For example, to

^{1.} For us, the degree of centralization seems to be tied to the capacity of the central authority to monopolize potential agricultural land. Where virtually all arable land is cultivated and creation of new fields is difficult, as with the Japanese and Incas, the ability of the state to concentrate wealth and power in the hands of a few is enormous. However, where productive land is essentially temporary and mutable, as in the case with the swidden agriculture of the Yoruba, the basis of the state's power is control over the labor force rather than land itself. As it is extremely difficult for any central authority to prevent people from creating new agricultural lands outside its aegis, a degree of power sharing and social mobility is therefore essential (Stone 1997a, 1999; Stone and Zimansky 1995: 93).

^{2.} The sources for the following generalizations on the Youruba include: Kochakova 1978; Krapf-Askari 1969; Lloyd 1954, 1971; Ojo 1966; and Smith 1988. Our discussion on Islamic cities is informed by Abdel-Nour 1982; Bouhdiba and Chevallier 1982; Hourani and Stern 1970; Lapidus 1969, 1984; Marcus 1989; and Serjeant 1980.

ensure his neutrality, the Yoruba chose their king from a royal lineage which otherwise had little political importance. The selection of the specific individual was made by the city council in consultation with oracles, themselves controlled by various non-royal kinship groups. Thus, in effect, the king was chosen (and could be unseated) by the population as a whole through the medium of their representatives on the city council.

The Yoruba king was by no means unimportant. He played a key role as the unifying symbol of the city in many cases—a position often reinforced by rigorous programs of rituals and taboos. He was the representative of the city in external relations and a titular leader in war. This did not give him overwhelming control of physical force, however, since he rarely left the palace and kin-ship groups mediated the allegiance of his soldiers.

Most striking is the distinction between the symbolic role played by the king—one of such importance that Yoruba rulers are included in the literature on African sacred kingship—and the realities of economic and political power imbedded in religious institutions. The ruler actually had little personal influence over these institutions, which were physically dispersed in the city and controlled by local elites who held the primary religious offices and positions in them.

In such decentralized societies, control over the principal centers of manufacturing and exchange by the ruler or by the religious elite was at best tenuous. These activities were practiced in residential neighborhoods and added to the wealth of the city as a whole. Among the Yoruba, the king had to open the market, but beyond that its affairs were regulated by the council in its role as representative of the people in general.

The varieties of urban—even imperial—societies without hereditary aristocracies were not recognized by the previous generation of general theorists on the evolution of ancient complex societies (e.g., Service 1975; Fried 1967), but a less hierarchical, more communal, model is not inconsistent with the the data on Mesopotamia. Certainly the ecological conditions are appropriate for this type of organization. In Mesopotamian agriculture, which depends upon irrigation water from unpredictable sources and is plagued by river shifts and salinization, productive land is almost as temporary as in swidden agriculture. Here too, those disaffected with the central authority have opportunities to create new resources beyond the reach of the state (Adams 1978, 334).

That decentralized complex societies exist and that compatible environmental conditions prevailed in the area does not, by itself, prove that Babylonian polities took this form. What is needed is a way to test whether the apparent similarities between ancient southern Mesopotamia and the more consensual types of state society described above are real. It is here that the urban ecologists' work comes into play. There is no theoretical barrier to applying the principle that the distribution of people and institutions within cities correlates with basic sociopolitical relations to ancient societies.

City plans from Yorubaland and late Medieval Syria do, in fact, reflect a lack of strong hierarchy. Elite residences are distributed throughout these cities and not concentrated near the center, as is the case in more hierarchical societies. Even after the advent of capitalism had begun to distort this pattern (Meriwether 1985), houses of the rich and powerful still tended to be more broadly distributed than concentrated in Aleppo (David 1975). If the distribution of elite residences in a Mesopotamian city could be determined archaeologically through plotting luxury objects or large houses, it would provide an archaeological test for this type of residence pattern. A second area where archaeologically identifiable spatial data reflect socio-political organization of these societies is in the locations of institutions of religion, administration, manufacturing, storage and exchange. In more hierarchical cases, these tend to be concentrated near the center of cities, like elite residences, but they tend to be dispersed in more consensual ones. A third measure pertains to the ecoAt the time the Mashkan-shapir project was initiated, it was not clear how these criteria were to be judged in Mesopotamia. Although several major cities in the southern alluvium had been extensively excavated, their longevity as erstwhile habitation sites made it very difficult to obtain an overall view of the distribution of population and institutions at any specific date. A review of the available data (Stone 1991, 1995), suggested that temples and palaces were often located near the periphery of settlement, not in the center, and frequently far from one another. Moreover, where residential districts had been excavated, they consistently included both large and small houses. At Ur, no significant wealth differences could be found between several contemporary Isin/Larsa house areas, although wealth differences existed within each excavation unit (Woolley and Mallowan 1976, Luby 1990). To the extent that evidence for it had been identified, manufacturing seemed to have been practiced within residential districts (Woolley and Mallowan 1976: 32–33; and in a more limited context, Postgate 1990: 103–4). These data, while more supportive of a consensual model of urban organization than a hierarchical one, came from a composite picture of many sites, rather than a detailed understanding of any single ancient city. The Mashkan-shapir project was designed to give an overview of urban organization in one place, at one time.

Site Selection and Project History

The choice of a site appropriate for this research was dictated by several practical considerations. First, it obviously had to be of urban proportions. The role of hierarchy is most apparent where the greatest degree of institutional and interpersonal complexity is found in a given society, i.e. in its large urban centers. We accepted Adams's (1981: 138) value of 40 ha. as the minimum size for a full scale city. We also recognized that the investigation would be greatly facilitated if the site enjoyed that status for as brief a time as possible, minimizing the complications of diachronic transformations so apparent in previously investigated sites, not to mention the effort involved in removing archaeological overburdens.

It was our intention to follow up the site survey with a long program of test excavations. Although the Gulf War and the impracticability of working in Iraq in its aftermath precluded this second phase of research, unearthing the broadest range of both archaeological and textual data relating to the social and political roles of all elements of the population was a priority at the time we selected the site. To this end, a site dating to the early second millennium B.C. seemed optimal because this is the earliest period in which significant numbers of private documents supplement the written record of the public sector. In the Isin-Larsa/Old Babylonian periods one can expect to find pertinent written documentation on the periphery of a site as well as the center, in private households as well as large institutions and in small sites as well as large–and yet be certain of studying a society whose institutions were in direct continuity with those established more than a millennium earlier.

One additional criterion figured importantly in our site selection: clear surface indications of architectural patterns. These are often present on tells located in the more desolate areas of the Mesopotamian plain where recent human disturbance is minimal and desert winds scour the surface to reveal the remains of ancient canals, architectural fragments, burials and the like.

With these four criteria in mind—site size, occupational duration, date and surface traces—we examined the site descriptions developed in the course of the major surface surveys of southern

Mesopotamia (Adams 1965, 1972, 1981; Adams and Nissen 1972; Gibson 1972; Wright 1981). We identified only two candidates, Eridu Survey 34 (Wright 1981: 339) and Nippur Survey 639 (Adams 1981: 256–57). Wright describes Site 34 as follows: "Ca. 1,300 ENE × 900 × 2. Bricks. . . ; ceramic slag; carnelian; flat cuprous fragments. Late Larsa: ca. 85 ha." (Wright 1981: 339) and:

On the ground, wind erosion has emphasized small canals within the settlement, drains lined with baked brick in former streets, building foundations of both baked and mud brick, and localized concentrations of basalt, copper, ceramic slag, and other items perhaps indicating workshops. (Wright 1981: 330)

The description of Site 639 offered by Adams in Heartland of Cities is equally appealing:

1,000 NE × 650 × 2.5. Many bricks . . . , numerous foundations or walls in place. Small underlying Uruk, Akkadian settlements. Overwhelmingly Ur III–Larsa. There is also a little later (Old Babylonian, Neo–Babylonian, Parthian, Sasanian) pottery, but it can be characterized as a city with dense continuous and prolonged occupation only during the Ur III–Larsa period. (Adams 1981: 256–57).

In the fall of 1986, Elizabeth Stone, then a Fulbright Research Fellow in Baghdad, attempted to visit both of these sites. Wright's Site 34 was inaccessible due to the winter flooding of the Euphrates, which did not bode well for conducting future research there. This, rather than any ancient characteristic of the two sites prompted us to focus on Adams's Site 639, although we have had no cause for regret.

The Department of Antiquities of Iraq and its Director-General, Dr. Mu^cayad Said Damerji, were most generous in granting an excavation permit in spite of the site's apparent obscurity and the difficulties of initiating new projects during the ongoing Iran–Iraq War. Our first campaign was conducted between May 18 and June 7, 1987.³ A year later, on May 28, 1988, Elizabeth Stone was able to pay a fleeting visit to the site following a conference in Baghdad. This was only two days before a SPOT satellite image of the site was taken at our request and her photographs from the surface illustrate local conditions and ground truth for the remote sensing. Our second field season was conducted between December 20, 1988 and January 19, 1989. Having been troubled by severe early summer dust storms in 1987, we wished to avoid similar weather conditions by working in the winter. At that time, we only had funds for another short, three-week season.⁴ By 1990 we were able to obtain more substantial funding to initiate what we hoped would be a program of sustained research. We established our research base in Shomeli, the nearest town of any substance to the site, and conducted a three and a half-month field season between February 2 and May 15, 1990.⁵ In all we were in the field for five months, three of which were devoted to the survey and

^{3.} The government representative in 1987 was Yasin Rashid, while team members included Catherine Alexander, Lucy Blue, Lauren Cook, Imogen Grendon, Jeanne Nijhowne, Charles Pennington, Nigel Sadler, Mark Shaw, Peter Shehan and John Suriano. The season's work was funded by the Fulbright program and by a grant from the American Schools of Oriental Research.

^{4.} Our government representative in 1988–89 was Kamil Alwan Shehab, and team members included Heather Baker, Jane Howell, Alan Lupton, Charles Pennington (Assistant Director), Laurie Roberts, Karen Westerlind and Marcus Woodburn. Our work was supported by grants from the National Geographic Society and the American Schools of Oriental Research.

^{5.} Our government representative in 1990 was Riad Abdul Rahman. Our team members included Catherine Alexander, Scott Beld, Michael Charles (archaeobotonist), Jeffrey Clark, John Cuozzo, Beth Grindell, Edward Luby (human osteologist), Axel Nielsen, Charles Pennington (Assistant Director), David Schofield, Thomas Tartaron, and Lisa Wells (geomorphologist). This season was funded by the National Science Foundation, the National Endowment for the Humanities, the National Geographic Society and private donations.

soundings reported on in this volume, with the other two months spent on the more extensive excavations carried out in 1990.

Of the 84 hectares surveyed, we completed work on 15 in 1987, 14.25 in 1988–89 and the rest in 1990. Four small soundings were made to augment the surface survey: one in 1987, two in 1988–89 and the fourth in 1990. The results of these are included in this monograph, but not those of a much larger area excavation that was opened in 1990, which merits separate publication. Where relevant to the survey, findings of this excavation will be noted.⁶ Two independent investigations of the environs of the site with attention to local geomorphology were carried out in 1990 by Lisa Wells and Tony Wilkinson, respectively, but these were also preparatory to more extensive work that could not be completed. The SPOT satellite image noted above provided a framework within which future studies of the area can be undertaken.

Chapter Outline

This volume describes and analyzes the survey work at the site of ancient Mashkan-shapir. Chapter 2 offers a general description of the site and its environs, including an analysis of the SPOT panchromatic and Corona imagery of the area, and a discussion of the geomorphological investigation conducted at and near the site by Lisa Wells. Chapter 3, by Piotr Steinkeller details the basis for identifying the site as Mashkan-shapir and reviews the textual evidence for its history.

The next section of the volume describes the different kinds data recovered from the site. Chapter 4 outlines the methodologies employed in the pedestrian and aerial surveys, with an evaluation of their strengths and weaknesses. Chapter 5 is a general discussion of the various kinds of surface features encountered and the ways in which these have been interpreted. Chapter 6 illustrates the small finds recovered, and Chapter 7, by Piotr Steinkeller, presents the cuneiform evidence found during the survey, including the lengthy dedicatory inscription of Sin-iddinam that clinched the identification of the site with Mashkan-shapir.

The last section of the book is more analytical. In Chapter 8 we provide a square by square description of what was found in each hectare of the site's surface, composed by combining the information from aerial photographs with observations and measurements made by the surveyors on foot. In Chapter 9 the distribution of features and objects from the site as a whole is analyzed, and the larger distributive patterns discussed. Finally, in Chapter 10 we draw together the various strands of this analysis to address the problem set out in this introduction.

The book concludes with a series of appendices. Appendix I presents the findings of the four small soundings excavated at Mashkan-shapir. Appendix II reports on the survey of Parthian field scatters conducted by Tony Wilkinson. Appendix III is a catalog of all the objects found in the course of the survey. Appendix IV is a list of objects organized by findspot, and Appendix V lays out the typologies which were used in the analysis of both features and objects.

^{6.} For a preliminary report, see Stone and Zimansky 1994.

Chapter 2 The Site and Its Environs

The modern name of Site 639 in Robert McC. Adams's Nippur survey (Adams 1981) is more in doubt than its ancient one, Mashkan-shapir. During the first field season in 1987, our government representative, Yasin Rashid, made inquiries and eventually found an aged bedouin who remembered the ruins as Tell Abu Duwari when they were described to him, although he was no longer able to visit the site. We used that name in some of our publications (Stone 1991, Stone and Zimansky 1994). In 1988 we met another, younger bedouin crossing the site who told us it was called Ishan Chebir—"Large Mound." In 1990 our workmen from the village of Shomeli declared it to be Tell Naim. Given the confusion, it seems best to retain the name the place was given in the third millennium, Mashkan-shapir, and leave it at that.



Fig. 1. Map of Babylonia showing the location of Mashkan-shapir.



Fig. 2. SPOT satellite image of the Mashkan-shapir area with second millennium sites and watercourses overlain.

The tell lies between 32° 24′ 19″ and 32° 24′ 48″ latitude and 45° 12′ 59″ and 45° 13′ 31″ longitude,¹ approximately 30 kilometers due north of Nippur (fig. 1). The surrounding area was only occasionally part of the settled, irrigated zone of southern Mesopotamia—most conspicuously in the Uruk, Isin-Larsa and Parthian-Early Islamic periods. No single factor can account for this history of intermittent settlement. In the Uruk period a large channel which Adams (1981:16–18) identifies as all or part of the ancient Tigris ran a little to the south and served as the nexus for a dense cluster of settlements. Mashkan-shapir, presumably bearing another name at the time, lay on the northern periphery of that cluster. By the end of the fourth millennium This watercourse seems to have either moved or been abandoned and third millennium settlement was concentrated on various branches of the Euphrates which passed farther south and west. This shift at the beginning of the third millennium coincides with a period of dune development in the area of Mashkan-shapir (see below).

^{1.} We did not have the benefit of a Global Positioning System at the time and these figures are derived from the SPOT image of the area. However, this image had to be rectified (tied to a standard coordinate system) with information provided by the SPOT image corporation rather than maps, simply because no recent large scale maps were available of the area. The SPOT image corporation provides projected corner points for each of its images, but does not guarantee their accuracy.



Fig. 3. Contour map of Mashkan-shapir.

At present there is no direct evidence to indicate the date of the large watercourse that is visible in SPOT satellite image (fig. 2), but it seems highly likely that this was contemporary with the floruit of Mashkan-shapir. We believe that it was this watercourse that made possible the resettlement of the area, albeit sparsely, in the Akkadian and Ur III periods (late third millennium B.C.). Textual sources suggest that Mashkan-shapir was relatively inconsequential in the Akkadian period, and that it served as a center for royal shepherds in the following Ur III period (see Chap. 3).

The growth of Mashkan-shapir to urban proportions took place in the early second millennium, specifically with the building of the city wall by Sin-iddinam. The city's collapse seems to have coincided with the general abandonment of southern Mesopotamian urban sites during the reign of Samsuiluna at around 1720 B.C., but unlike other centers, it was not reoccupied in the late Kassite period. Indeed, it remained uninhabited until the Parthians dug a number of large canals to bring water back to the area in the first millennium A.D. Like much of the rest of the central Euphrates flood plain, by the Middle Islamic (Samarran to Late Abassid) period it was again deserted, and remained so until the recent expansion of Iraq's irrigated area since the Gulf War.

It must be stressed that this part of southern Mesopotamia was always sparsely settled, except from the Parthian to Early Islamic periods, either because it was too close to the unpredictable Tigris, or because it was beyond the reach of irrigation systems originating from Euphrates branches.



Fig. 4. SPOT image: detail of Mashkan-shapir.

Even when Mashkan-shapir was a city of great importance in the early second millennium, it was not associated with an extensive rural network of villages (Adams 1981: 163).

The tell is a large, low mound whose remains merge with the surrounding desert and make an exact determination of its size difficult. The city wall encloses approximately 72 hectares, but some of this area was only occupied sparsely. On average, the surface of the site is little more than two meters above plain level, although in some places it rises to more than five (see fig. 3). An evaluation of the height of the mound is complicated by the large Parthian to Islamic canal system that cuts through the northern tip of the site. Presumably because of silts brought in by this system, the modern plain is nearly one meter higher north and west of the site than to the south and east—a significant difference when dealing with a tell only a few meters high. This slope apparently did not exist during the city's heydey, however. Auger tests indicate that plain level has not changed significantly since the early second millennium in the southeastern portion of the site, and the foundations of the city wall and a number of isolated buildings there are on the modern surface. In Squares 4H and 8G, auger tests found archaeological deposits continuing down to approximately the same absolute elevation as the plain level in the southeast. However, in Square 5H, an area in which we suspect there was an early Uruk occupation, augering detected archaeological deposits more than 2.5 meters below the lowest modern plain level.

Although they are not always prominent enough to appear on the contour map, numerous canal beds of different sizes and dates cut the site, many of which are visible in the satellite imagery (fig. 4). To simplify our description of the site, we have used Roman numerals to refer to sectors of the mound defined and separated by canals or other second millennium features and have designated all canals, whatever their date, by letters (Fig 5).

The city was made up of a central quadrilateral, Sector IV, with mounds to the northeast (Sectors I and II), northwest (Sector III), southwest (Sector VI) and southeast (Sector V). Only the northern portion of site was further sub-divided, with Canal B separating Sectors I from II. However, the data suggest that this canal may have been a later addition to the settlement (see below) and there is no evidence that Canal B served to separate a distinctive part of the city from another, as did the other major canals. One small, quarter-hectare mound, Sector VII, is some 70 meters



Fig. 5. Map of Mashkan-shapir showing the canals and sectors of the site.

removed from the rest of the site and probably stood outside the city wall. It appears that fourthmillennium settlement was confined to the southern portion of Sector IV, and Parthian settlement limited to a few hectares located in the northern portions of Sectors III and IV.

The high points of the site, seen in fig. 3, are a palimpsest of Uruk, Old Babylonian, and Parthian occupation. Some, like the peaks in Sector VI (fig. 6), are clearly Old Babylonian, but the three high points in the north of Sectors III and IV are the debris of Parthian occupation on top of the remains of the Old Babylonian city. Another high point, in Sector I, is certainly related to the presence of Canal A, which cuts through the Old Babylonian city and dates to the Parthian and early Islamic periods. Lack of other indications of late occupation here suggests that a single Parthian structure was built on top of an Old Babylonian eminence. Although the rest of the site is quite low, two somewhat higher zones can be identified, one in the southern portion of Sector IV and the other in Sectors I and II on either side of Canal B. The former was created, at least in part, by the remains of earlier occupation that underlies the Old Babylonian city, but the latter seems to be entirely second millennium in date.

Low points on the site generally mark the locations of the larger canals, both Old Babylonian and Parthian, and the areas we believe to have been the city's harbors. The area to the east of Sector V is also low and shows little evidence for dense occupation although it is inside the city wall.



Fig. 6. View of the mounds and platforms associated with Sector VI.

Like many other wind-eroded Mesopotamian sites, Mashkan-shapir is covered by a dense layer of sherds. Charles Pennington, who collected every sherd larger than a fingernail from several small areas, calculated through extrapolation that there were more than thirty million pieces of pottery on the surface of the site as a whole (fig. 7). These were left in place as the surrounding matrix of soil and mud-brick was carried off. What is not clear is how much of the original surface has been weathered away. On the one hand it seems likely that, at a certain density, the sherds effectively retard further erosion while, on the other, we have Parthian slipper coffins, which must once have been buried, now on the surface. In some instances differential patterns of sherd density reveal ghosts of architectural plans by their concentration in what were once rooms and absence where there were once walls. These patterns represent clear evidence that at least one building level, or a major portion of it, has blown away, and the issue arises as to whether there were others that would prejudice the thesis that various artifacts now scattered over the surface are indeed representative of a single period. We have indications, however, that if there were overlying building levels, they did not differ significantly in character from what survives in traces. In the soundings that we excavated, new walls tended to follow the pattern of old walls, and the surface artifacts themselves indicated a relatively short period of occupation. The artifacts that we excavated were also very similar to what appeared on the surface; for example, when we excavated an area in which large numbers of model chariots were found, we discovered model chariots. The key factor here is probably the sheer density of ceramics within the soil matrix. Sherd density in our more extensive excavations was around 800 sherds per cubic meter, with the implication that the erosion of only 25 cm. would have



Fig. 7. General view of Mashkan-shapir.

resulted in a dense 200-sherd-per-square-meter blanket over the site, effectively preventing further erosion.

Sherds are not the only materials that are found scattered over the surface of the site. Baked bricks appear in quantity, either in unstructured concentrations or as the remains of actual walls and pavements. Other types of surface scatters include the remains of pyrotechnic manufacturing activities: slags with copper prills, pieces of kilns, kiln wasters, and pieces of a less easily identifiable hard black basalt-like material that is now recognized as being of human manufacture (see Chap. 4). The remains of graves appeared at various locations. These included brick tombs and large pithoi of the early second millennium B.C., slipper coffins and bathtub burials characteristic of the Parthian period, and, rarely, small piles of reused baked bricks, which may represent still more recent interments. Artifacts of stone and metal appeared in considerable numbers.

The abundance of so much material on the surface, some of it valuable, is testimony to the isolation of Mashkan-shapir in modern times and the infrequency of visitors. This is not to say that evidence of recent disturbance is entirely absent, however. Bedouin camp in this vicinity in winter and traces of minor clandestine excavations can be seen on the tell. A group had just departed prior to our summer visit in 1988, and it was possible to observe the results of their activities before wind erosion smoothed over the remains. There were two hastily excavated pits, in both of which human bones and pots, but not large pithos jars, had been unearthed. There were also a number of shallow holes, the result of single shovel thrusts, apparently the bedouin search procedure. The southern portion of Sector IV, an area that has many early second millennium B.C. graves, was the focus of their activities. They made scattered shallow test pits, only digging deeper if they found something encouraging. In the few graves that they had found in this way, they left the associated pots in place, disturbed some but not all of the bones, and, presumably, removed portable antiquities like cylinder seals. In general, this pillaging was on a very small scale.

The site was also somewhat disturbed between the 1988–89 and 1990 seasons when the area was used for military maneuvers. A number of shallow foxholes were dug and the surface of the site was marked in places with the tracks of tanks and other vehicles. Again the damage was minimal.

Since the Gulf War, the desert north of Mashkan-shapir has been put under cultivation in order to alleviate food shortages in Iraq. New canals prevented us from revisiting the site on the brief occasions we have been in the country, but we are optimistic that Mashkan-shapir itself has been spared destruction. The elevated ground beside the large Parthian/Early Islamic canal immediately to its north would offer some protection and the littered fill of the tell would not favor crops.

In an area like southern Iraq, where watercourses shift with some regularity, understanding the layout of a site involves studying more than just the site itself. When the Gulf War forced an interruption in our research, we were just beginning to trace the local watercourses and explore their relationship to the ancient city. In addition to Adams's survey data (Adams 1981), we had three new sources of information: the SPOT image noted above, auger cores of the soils in and around Mashkan-shapir collected by Lisa Wells in 1990, and a survey of canals and field scatters of sherds—generally dating to the Parthian occupation—conducted by Tony Wilkinson in 1990. Since that time, we have also been able to view Corona imagery of this part of southern Iraq.

Given the very preliminary nature of our exploration, the SPOT image of the area was particularly valuable.² This was taken at our request, and the camera was aimed at Mashkan-shapir specifically. We opted for a higher resolution, monochrome panchromatic image rather than a lower resolution multi-spectral one. The latter would be most useful for revealing variability in vegetation types, but this is usually more reflective of modern land use than ancient features and therefore not worth the sacrifice of ten-meter for twenty-meter square pixels. The image was taken in May 1988, during a peculiarly wet spring at a time when the desert had bloomed and what was usually a largely empty waste was green with fresh camelthorn. A comparison with Corona satellite pictures, taken in the 1960s but only recently made available,³ suggests that these atyptical conditions were in some ways advantageous and in other ways not. Many of the ancient features in the landscape were made clearer by variable densities of vegetation that would otherwise have been absent. On the other hand, ancient features that were normally marked by the presence of camelthorn or other desert weeds were rendered less visible when all the surrounding areas were covered with vegetation. This was the case, for example, with Canal B, which could be seen clearly from the ground during the winter field seasons as a thin line of plants extending beyond the confines of the site into the desert. It should be stressed that much of our discussion of the satellite imagery must be considered tentative in the absence of a rigorous study of "ground truth."

We began work with the SPOT image in 1988 in order to test the hypothesis that Tell Abu Duwari was ancient Mashkan-shapir. Text fragments found in 1987 had suggested this, but we did not find the inscriptions that gave proof until January of 1989. Before that, a major stumbling block to this identification was strong historical evidence associating Mashkan-shapir with the Tigris river and a prevailing view that the second-millennium B.C. Tigris probably flowed in or near its modern bed,

^{2.} We would like to express our thanks to Robert McC. Adams who made possible the acquisition of this image.

^{3.} Corona Images D138, 41 and 42, and D170, 128 were used here.

some 25 km. to the east. In the SPOT (and in the Corona Imagery when it became available), traces of a very large watercourse—greater in scale than any of the major branches of the Euphrates could be clearly seen in the desert area 4 km. to the north of the site. It proved less easy to trace this ancient watercourse near Mashkan-shapir because it was disturbed by early first millennium A.D. canal systems, but enough traces were present, especially in the Corona imagery, to follow the general course of this ancient river for the entire length of the SPOT satellite image (see fig. 3). The channel is clearest in the north, where it is some 400 meters in width and shows up as a dark band, with a lighter edge on each side. Lisa Wells and Tony Wilkinson subsequently made a brief investigation of this area and concluded that these edge markings might be the result of concentrations of freshwater mollusks along the ancient levees, but no auger holes were drilled on that occasion. Further south, nearer the site, the ancient channel runs beneath what is now a shallow lake formed as part of the construction of the Third River Project in Iraq. Nevertheless, traces of meander scars can be made out, both on the eastern edge of the lake and in some cases beneath its waters.

The watercourse can also be traced further north, in a zone of modern cultivation north of the main road between Na^camaniyah and Shomeli. Two channels can be seen there, one larger than the other, as slight discolorations. In the highly developed Musayab irrigation district still farther north, these channels are left uncultivated because their elevation made them difficult to irrigate. The channel is again visible in a narrow desert strip upstream from where it divides, and this bed corresponds to a channel identified by Buringh (1960: 153, fig. 72) and connects with the ancient Tigris channels reconstructed for the second millennium in northern Babylonia by Cole and Gasche (1998).

The question arises as to whether this represents all or part of the ancient Tigris or another branch of the Euphrates. Certainly the traces indicate a channel significantly larger than any of the ancient branches of the Euphrates-and indeed somewhat wider than the Hilla and Hindiya branches of the modern Euphrates. It is not, however, as wide as the modern Tigris, which in places exceeds a kilometer in width, and its course is much straighter. Adams has noted that fourth millennium watercourses suggest there was some admixture of Tigris and Euphrates waters north of modern Baghdad (1981: 16–17), and more recent work using Corona imagery has enhanced this picture (Adams, personal communication). If so, in the second millennium Euphrates branches may have also have taken some of the flow of what now follows the Tigris bed, which explains why the channel near Mashkan-shapir is smaller than that of the modern river. In addition, Adams has long argued that a series of meander scars located somewhat to the north of Nippur and Adab represents the traces of the fourth millennium Tigris (Adams 1981: 61-63). Recent examination of SPOT and Corona imagery of the area by one of our students, Anna Stefanowicz, suggests that this large channel was also carrying water in the early second millennium, and it too links up with the Tigris channels identified by Cole and Gasche (1998: Map 8). This research is still tentative, but it suggests that there may have been several Tigris channels in the area in the early second millennium, with Mashkan-shapir and, further south, Wilaya, as the two large associated settlements.

On balance, we favor the idea that the large watercourse in the image is all or more probably part of the ancient Tigris. The textual evidence connecting Mashkan-shapir with the Tigris (Leemans 1960: 166–71) is quite compelling, and since the location of the site is now known it may be the strongest testimony for identifying the river.

The SPOT and Corona imagery also provide information on the smaller canals that divided Mashkan-shapir into its constituent parts and provided irrigation water for her fields. But the imagery is not at all clear. The SPOT image has only a 10 m. resolution, and the canals that we are trying to trace are barely that width. Moreover, it is impossible to tell the difference between these canals and modern car tracks. The addition of the Corona Imagery, with its 2-meter resolution, should improve the situation, but here, perhaps because it was not a wet year, neither the site nor the canals show up as clearly. Much of our difficulty is due to the heavy reworking of the area in the Parthian period, which both cut through and overlaid the earlier irrigation system. We did publish a reconstruction of these canals (Stone and Zimansky 1995: 95), but subsequent work with the Corona imagery has not confirmed this picture.

Canals G and O can be seen to divide from a single channel some two kilometers to the north of the site, which appears to have had its off-take on the downstream side of a large meander of what we assume to be the Tigris, exactly from the point where the flow would have been the strongest. South of the site, the two channels can also be traced for some distance. However, since Canal G was re-cut in the first millennium A.D., it seems likely that its traces are not those of the second millennium B.C. canal. Indeed, Wells' research (see below) suggests that the later canal may have departed from its second millennium predecessor, with its silts obscuring the remains of the earlier feature.

Canal B is an anomaly. It can be seen very clearly beyond the site in many places because its bed is marked by a line of camelthorn. It is not clear whether this vegetation is there because the canal was originally deeper than the others, filled in with differently compacted silts, or as a consequence of some other factor, but it is significantly different from other canals in this regard. East of the site, Canal B is less visible, perhaps in part because of the wet conditions that prevailed when the image taken but also because that area was heavily irrigated in post Old Babylonian times and a combination of later canals and alluviation obliterated its traces. It can be seen in the aerial photographs to cut across Canal G just beyond the site (figs. 119, 121) and in the satellite imagery also seems to cut Canal O. Although it is certainly possible that it derived its waters from Canals O and G, its strange orientation and different character point to an origin in the easternmost Euphrates branch of the early second millennium, running from Kish to Adab and on south to the Umma area, some twelve kilometers to the west.

If it is necessary to hazard a guess as to which watercourse was earlier, it would seem likely that Canal O came first, since this flows by the area with evidence for earlier occupations of the fourth and end of the third millennia B.C. Canal G was then presumably added to the system when Mashkan-shapir attained urban size and a larger agricultural base was needed. The orientation and character of Canal B suggests that it was dug under different circumstances, but that cannot be proven by the available data.

There is now considerable evidence to suggest that the collapse of settlement in southern Mesopotamia that took place during the reign of Samsuiluna was caused in part by a disruption in the flow of the Euphrates, with the old channels drying up and new channels closer to its modern bed to the east replacing them (Armstrong and Brandt 1994). But if this were the case and if the large channel we have identified north of Mashkan-shapir was the Tigris, it is not immediately clear why Mashkan-shapir would be involved in this abandonment.

Two possible explanations come to mind. One is that the Tigris channel may have dried up before the end of the city's occupation, and thereupon Canal B was dug to bring water from the nearest branch of the Euphrates. If so, Mashkan-shapir would have been as dependent on Euphrates water in its latest occupation as nearby Nippur and Adab, which collapsed in the latter years of Samsuiluna (Stone 1977). A second possibility is that Mashkan-shapir was never self-sufficient in food. It began as a center of pastoral production, was associated with the Emutbala tribe (see chap. 3) and had little in the way of a rural hinterland for support. It then grew into urban status as a major trade link to the areas to the north and east. It is possible that it continued as a wool producing center,
bringing in much of the food it needed from the Euphrates-fed cities to the south in exchange for both wool and imported stone, metals and timber. If this were the case, then this economic dependence on the cities to the south would have resulted in it sharing their fate.

Geoarchaeological Investigations at Mashkan-shapir

LISA WELLS

Introduction

During the spring of 1990 a geological investigation of subsurface stratigraphy at Mashkanshapir was initiated. The Gulf War prevented continuation of the field investigation, and it was not until December 1994 that a few of the sediment samples were brought back to the United States. The purpose of the geoarchaeological project was to investigate riverine impacts (aggradation, migration, avulsion) on the history of the occupation of the tell. Because the circumstances outlined above prevented any radiocarbon analyses of these sediments, the interpretation here is based wholly on lithostratigraphic correlations across the site.

The site of ancient Mashkan-shapir is located in the middle of the Tigris Euphrates floodplain about midway between the two rivers and about 90 miles southeast of Baghdad. The area is arid and modern agriculture is limited by both the distance from the rivers and poor drainage. Soil salinization is an important limiting factor in the productivity and longevity of field crops in the area. Although much of the surrounding floodplain is occupied by barley fields, the tell itself and its immediate area were open desert at the time of the study. High winds and dust storms are common. The tell surface shows signs of active ventifaction and excavations often backfilled with eolian accumulations overnight. The modern environment can thus be described as an arid desert floodplain dominated by eolian processes.

The geoarchaeological investigation focused on auger drilling across two of the tell's primary water courses and into an ancient harbor (fig. 8; Table 1). Calcium carbonate and gypsum cementation of the soils around the site made the hand augering an extremely difficult process and hole depth was limited by the physical strength and well being of the drilling team.

Canal G runs along a bearing of approximately 125° on the northeastern side of the site (fig. 8). The auger transect across this canal was done in the ancient agricultural areas southeast of the site outside the city wall. In addition, a shallow trench was excavated across what was a small distributary canal that would have provided water to the fields adjacent to the main canal. Fourteen auger holes were placed 2.5 to 7 m apart across Canal G and were excavated to depths of as much as 630 cm. Canal M runs along a bearing of about 35° within the central area of the Tell and terminates in confluences with Canals G and O. The Canal M auger transect is located within the site just slightly north and east of the main 1990 excavations. Seven auger holes were placed across this canal and a single hole was drilled adjacent to the canal into the deep central area of the site. Two additional auger holes were drilled into the "East Harbor."

Lithostratigraphy

Sterile Sediments. Fine grained sediments underlie the floodplain and the cultural deposits at Mashkan-shapir. Sediment ranges from clay to fine grained sands, and individual sediment layers are 10 to 50 cm thick. Coring logs are presented in figures 9 and 10. The dominant subsurface materials are poorly sorted silt and silty clay units that lack cultural remains or charcoal. Quartz, feldspar, bio-



Fig. 8. Plan showing the location of the geomorphological research and the line used for the section drawn in fig. 11.

tite and shell fragments make up the bulk of the sand to silt sized mineral fraction. The Canal G transect lies just outside of the main sherd scatter surrounding the site (see Appendix V) and the absence of cultural materials does not imply a pre-occupational age. The grain size of the material and inclusion of shell debris suggests that these materials are fluvial overbank sediments most likely deposited when a main river course was closer to the site than either the Tigris or Euphrates are today.

A distinct lithostratigraphic unit appears to underlie the entire site at depths ranging from 3 to 5 m. The core of this unit is a well sorted fine grained sand layer sandwiched between two layers of silty sand. Away from the site the unit includes neither shells nor cultural materials; underneath the western portion of the site the unit appears to include early cultural remains. Similar materials to these deposits are accumulating around the site today as dunes migrate across the extensive arid floodplain between the two rivers. The material is interpreted to be the deposit of a major period of dune migration across the region and implies that the rivers were probably some distance away during its deposition. The appearance of dune material that includes cultural deposits suggests that the site was occupied during at least part of the period of active dune formation. The artifactual remains collected in this part of the site suggest that this occupation is to be dated to the fourth millennium B.C.

Thin clean sand and silty sand layers are also interspersed within the fluvial deposits. Their small size suggests that they are not river channels deposits, but rather small dunes intercalated with the fluvial deposits. Similar sediment also fills the remnants of the canals and harbors.

Locality Number	Location	Depth	Notes
Canal M Transect			Transect trends NW–SE perpendicular to the canal. It begins in 4GSW and ends in H4NE.
A 40290	12.5 m (NE corner of 4G)	630 cm	
B40290	7.5 m	630 cm	Deflation lag cover over canal.
C40290	3.5 m	630 cm	
A40390	1 m	630 cm	At north levee crest.
B40390	19 m	600 cm	Architecture begins at 21.7 m.
A40490	9.5 m	320 cm	At south levee crest.
B40690	SE of PT in main site	630 cm	Surface sherd scatter.
C40690	In depression behind N levee	330 cm	Abundant surface sherd scatter.
Canal G Transect			Outside of the surface survey area in J12; perpendicular to canal beginning in NE and headed SW.
A32590	20 m	400 cm	Deflated irrigation surface.
B32590-1	2.5 m	100 cm	Coppice dunes.
B32590-2	7.5 m	30 cm	
B32590-3	10 m	30 cm	
B32590-4	30 m	400 cm	Coppice dunes.
C32690	17.5 m	75 cm	
D32690	22.5 m	450 cm	
E32890	25 m	600 cm	Road surface.
A 32990	27.5 m	630 cm	Coppice dune.
B32990	32.5 m	400 cm	
C32990	35 m	400 cm	
A40190	37.5 m		
B40190	40 m	400 cm	
C40190	45.5	400 cm	
East Harbor Cores			
B40490	2.5 m SE of G8, in G8SE	600 cm	Mud cracked playa surface.
B40490	33.6 m SE of B40490	400 cm	

Table 1. List of Auger Drill Sites at Tell Abu Duwari

Cultural Sediments. Sediments drilled within the boundaries of the site are similar to those encountered outside the site with the addition of abundant pottery sherds, charcoal, red and green clay fragments, brick fragments, and occasional burned bone. Lateral discontinuities in sediment grain size and sorting suggest that, as expected, the human alteration of the landscape had a profound impact on the distribution of surface sediments. Thin charcoal, bone and brick layers that were encountered in the coring may be the direct remains of hearths, floors and walls.

The harbor was excavated into sterile sediment and the base of the harbor is about 3 m below the adjacent surface of the site. A gleyed (blue to grey colors from iron in a reduced state) silt layer marks the base of the harbor and is overlain by a meter or so of sterile silty clay. The uppermost fill





Fig. 10. Auger profile across Canal M.

consists of silts and clays with abundant artifacts and shells. This transition to garbage accumulation in the harbor at a depth of about 2 m probably indicates the time when harbor and canal maintenance were neglected at the end of the Old Babylonian occupation.

A sterile and gleyed silty clay also marks the base of Canal M. The base of the canal sediments is located about 4 m below the modern surface of the site and is underlain by earlier occupational debris. As in the harbor, the basal sediment (50-200 cm) is sterile and probably accumulated during the primary Old Babylonian occupation. It was then overlain by midden material that backfilled the canal when maintenance ended.

Canal G and its adjacent feeder canal have a very different stratigraphy than either Canal M or the harbor. These canals have been filled with eolian accumulations and their bases are marked by the transition to calcium carbonate cemented soils. They lack the fine grained gleyed deposits that would indicate long periods of standing water. Both of these canals were quite shallow, with bases only 50–100 cm below the surface of the modern desert plain. The eolian fill within the canals and



Fig. 11. Interpretation of Mashkan-shapir stratigraphy..

the underlying sediments lack human artifacts but the adjacent fields are covered with a sherd scatter probably resulting from the addition of compost waste as fertilizer (Appendix II). The sherd scatter includes glazed artifacts indicating that the fields were used during Sasanian to early Islamic times.

Soils described adjacent to the canal transect on the desert surface are thin juvenile carbonate horizons. Oxidized A–B horizons that are stiff with high accumulations of carbonate and gypsum extend to depths of 10–30 cm. As the modern surface surrounding the site has indications of late agricultural usage, this soil may have resulted from salinization associated with the Sasanian to early Islamic period.

Stratigraphic and Environmental Interpretation

The following stratigraphic interpretation is based on correlating depositional units across a very broad area, combined with topographic considerations and the distribution of cultural materials on the surface of the site (fig. 11). Subsurface correlations must be considered tentative as the geo-chronologic control is extremely limited.

Pre-Uruk/Uruk Fluvial Deposits. The earliest occupation of Mashkan-shapir occurred during the Uruk period as determined by artifacts found as surface scatter across the southern and eastern portions of the site. While definitive age material was not found in any of the drill holes, the lower portions of the cultural remains encountered within the drill holes are interpreted as the remains of Uruk period occupation. Occasional pottery fragments with wheel marks found at depths of 3 to 5.8 m are consistent with this interpretation. Fine grained fluvial deposits underlie cultural remains in deep holes excavated within the limits of occupation.

Late Uruk Dune Sands. A thin layer of dune deposits appears to underlie the entire site at depths 3 to 5 m. The dune sands are interfingered with cultural deposits underneath canal M at depths that

would be reasonable for the end of the Uruk period occupation. The period of dune sand formation was probably one of aridity, when fresh water sources were distant from the site, and it may be that the abandonment of the site was a consequence of river migration away from this central floodplain location.

Post Uruk/Old Babylonian fluvial deposits. Contemporary with the main period of site occupation was the deposition of fluvial silts on the surrounding floodplain. These deposits most likely interfinger with cultural sediments along the boundaries of the habitation area. At the deep drilling location within the site proper, the sediment matrix is comprised dominantly of silts and silty sands that are probably derived from the adjacent fluvial aggradation. At least 3.5 m of fluvial aggradation occurred subsequent to the dune formation and during the main period of site occupation. This extensive aggradation is consistent with the interpretation that a major trace of one of the river beds was proximal to the site during the Old Babylonian occupation.

Canal and Harbor Water Levels and Post Old Babylonian Deflation. Canals and harbors transect the site and were clearly integral to the spatial layout of Mashkan-shapir. Canals were both part of the transportation network connecting the site with other Old Babylonian cities as well as sources of water for agriculture on the floodplain hinterland. The modern surface of the East Harbor is a relatively flat plain with low levels of artifact scatter compared with the adjacent occupational areas and is covered with a mud cracked surface with the appearance of a desert playa.

The surfaces of the East Harbor and Canal M stand 1 to 2 m above the height of coeval occupation around the city wall and another half meter or so above the canals observed in the surrounding floodplain. Canals on the flood plain must have provided the water to the canals within the site, and thus a clear enigma exists here. Either the surface of the surrounding floodplain and the occupation outside the city walls has deflated at least 2 m subsequent to occupation, or wiers existed to raise the level of the water within the bounds of the site. The tell itself is armored with a thick cover of pottery and brick that decreases the rate of eolian deflation and thus this most likely accounts for some of the elevational difference. The presence of coeval occupation at lower levels outside the city wall suggest that wiers must have played a part in increasing hydrologic head within the site.

Post Old Babylonian deflation of the landscape surrounding the site and immature carbonate soil horizons at the present surface further support the hypothesis that the surface deflated substantially subsequent to the Old Babylonian occupation. Surface deflation and the absence of sedimentation imply a significant period of aridity during this time. The period between the Old Babylonian and Parthian occupations was likely typified by arid conditions much like those that predominate in the region today.

The shallow depth of Canal G is inconsistent with its use as a major transportation artery during the occupation of Mashkan-shapir. Even if its surface has deflated, this canal was unlikely to have been deep enough to serve as a major transportation artery. The canal that was studied served as an agricultural distributary during the Parthian occupation and may have served the same purpose during the Old Babylonian occupation. Another one of the lineations observed in the aerial photography may have served as the transportation artery, or it is possible that the line of the Old Babylonian canal parted company from that of its Parthian descendent but is no longer visible due to the disturbance caused by later irrigation in the area.

Parthian Deposits. The Parthian occupation occurred some two thousand years after the main period of Old Babylonian occupation. Parthian architecture is concentrated in the center of the site, but evidence of extensive Parthian agriculture suggests that Canal G was recut and used during Parthian times. Parthian slipper coffins exposed on the modern desert surface indicate that surface deflation has occurred subsequent to the Parthian occupation. The shallow depth of Canal G (fig. 5) is compatible with its reexcavation for agricultural purposes during the Parthian period.

Summary and Interpretation of the Stratigraphy

The site of Abu Duwari was occupied during three distinct phases of prehistory, each separated by more than 1000 years of site abandonment. During each of the phases of occupation, the surrounding desert surface was the site of an agricultural hinterland. The subsurface sediments indicate that the Uruk and Old Babylonian occupations were contemporaneous with substantial fluvial aggradation suggesting the proximity of a major water course to the site. An extensive dune sheet about three meters below the modern plain may mark a period of aridity at the end of or subsequent to the Uruk occupation. Assuming that the dune sands demarcate the period between the Uruk and Old Babylonian occupations, there was at least 3 m of aggradation during the Old Babylonian occupation. Eolian surface deflation between the Old Babylonian and Parthian occupation was somewhere between 50 cm and 250 cm, thus the aggradation during Old Babylonian times must have been as great as 550 cm. Soils on the Parthian to early Islamic agricultural surfaces suggest salinization problems and perhaps a third period of aridification at the end of or subsequent to early Islamic occupation.

To summarize: the subsurface flood plain stratigraphy is consistent with the interpretation that Tell Abu Duwari was occupied during periods when one of the main rivers of the Tigris-Euphrates floodplain was proximal to the site. The movement of the rivers away from the site caused aridification and salinization of the surrounding desert and resulted in repeated abandonment of Tell Abu Duwari.

Chapter 3

A History of Mashkan-shapir and Its Role in the Kingdom of Larsa

PIOTR STEINKELLER

This chapter studies the history of the city of Mashkan-shapir and its place in the political life of Babylonia, as it can be reconstructed from the surviving cuneiform record.¹ We will begin with a brief outline of Mashkan-shapir's fortunes, which will be followed by a more detailed discussion of various specific issues, such as the circumstances of Kudur-mabuk's rise to power and his relationship to Mashkan-shapir, and the position of Mashkan-shapir vis-à-vis Larsa and the Emutbala tribe. We will also offer some tentative conclusions about the genesis of the Larsa kingdom and the role Mashkan-shapir and its region played in that development.

The History of Mashkan-shapir

The earliest known mention of Mashkan-shapir comes from a Sargonic letter of Nippur provenience,² which concerns a run-away slave who had found refuge in Mashkan-shapir. In view of the absence of any other mentions of Mashkan-shapir in Sargonic sources and the fact that the word *maškanu* invariably describes small villages or hamlets, it seems safe to conclude that in Sargonic times Mashkan-shapir was an insignificant rural settlement. The founding of that settlement quite likely belongs to the same period.

Slightly more information on Mashkan-shapir survives from the following period, the time of the Third Dynasty of Ur. We know that during that time Mashkan-shapir was home to a group of royal shepherds, managing extensive herds of sheep and cattle.³ Although Ur III times must have seen some monumental, government-sponsored building activity at Mashkan-shapir, as witnessed by the surviving bricks with a standard inscription of Amar-Sin (see p. 135 for the edition), the

^{1.} This chapter is a revised and much expanded version of an unpublished paper written by myself and E. C. Stone (1990). I offer my warm thanks to P.-A. Beaulieu, H. Gasche, P. Machinist, G. Magid, and M. Stol, who read the preliminary manuscript and offered corrections and valuable suggestions. Needless to say, they are in no way responsible for the views here expressed.

^{2. &}lt;sup>[I]</sup>Lugal-á-zi-da árad Lugal-ki-gal-la énsi-da in-da-zàh ki zàh-a-na géme Ur-nìgin ba-dug₄ in Maš-ga-ni-^rsabra¹ u-^rša¹-ab ^rli¹-[ru]-u-^rnim¹, "Lugal-azida, slave of Lugal-kigala, ran away from the governor; the slave woman of Ur-nigin disclosed his hiding place; he is (now) in Mashkan-shapir; he should be brought here!" (Pohl 1935a: text 50:1–10 = Kienast and Volk 1995: 126–27 Nip 1).

^{3.} There survive records of three such shepherds, Abi-tab, Ur-Alla, and Ur-lugal:

⁽a) A-bí-DÙG: sipad Maš-gán-sabra^{ki} (Owen 1982, text 210 ii 18 [Shulgi 42/xii]); sipad KA-sahar^{ki} (Sigrist 1988, text 235:6, 12 [Shulgi 43/iii]; Pohl 1935b, 278 iv 18 [. . .]); sipad (Sigrist 1988, text 303:6, 14 [Shulgi 45/xii]); (sipad) (de Genouillac 1911a, text 5498 i 28 [Shulgi 45/xii/30]).

absence of any other references to Mashkan-shapir in contemporaneous sources suggests that no significant change occurred in its status, compared with the preceding period.

The collapse of the Ur III dynasty, and the subsequent emergence of the rival power-centers of Isin and Larsa, marked the beginning of the rise of Mashkan-shapir to prominence. Throughout most of the Isin-Larsa period, Mashkan-shapir appears to have formed part of Larsa's possessions, playing the role of the northernmost outpost of Larsa.

Thanks to the discovery at Mashkan-shapir of an inscription of Zabaya (see p. 146 for the edition), the fourth ruler of the Larsa dynasty, it is now possible to establish that Larsa exercised control over Mashkan-shapir virtually since the beginning of the dynasty. However, sometime after the reign of Zabaya and before or during the reign of Nur-Adad, Larsa's eighth ruler, Mashkan-shapir was lost to Larsa, for one of Nur-Adad's year-names commemorates his capture of Mashkanshapir.⁴ The city remained firmly in the hands of Sin-iddinam,⁵ Nur-Adad's son and successor, who built (or, more likely, rebuilt and greatly extended) a city wall there. This deed, which gave name to Sin-iddinam's seventh regnal year,⁶ is described in considerable detail in his dedicatory inscription found at the site (see Chapter 7 for the edition).

Since the wall in question was dedicated to the netherworld god Nergal, and since in the same source Nergal is said to be the "lord" (en) of Mashkan-shapir, it is established conclusively that Nergal was the chief deity of Mashkan-shapir. According to the sources dating to the reigns of Hammurabi and Samsu-iluna, there existed in Mashkan-shapir a temple of Nergal named Meslam,⁷

(b) Ur-Al-la: sipad Maš-gán-sabra^{ki} (Owen 1982: text 210 ii 2 [Shulgi 42/xii]); sipad KA-sahar^{ki} (Sigrist 1988: text 235:9, 12 [Shulgi 43/iii)]); sipad (Sigrist 1988: text 303:3, 14 [Shulgi 45/xi]); (sipad) (de Genouillac 1911a, text 5498 i 31 [Shulgi 45/xii/30]); na-gada (Yildiz and Gomi 1988: text 802 vii 25 [Shulgi 47/v]).

(c) Ur-lugal: sipad Maš-gán-sabra^{ki} (Owen 1982: text 210 ii 5 [Shulgi 42/xii]); sipad KA-sahar^{ki} (Sigrist 1988: text 235:3, 12 [Shulgi 43/iii]); (sipad) (de Genouillac 1911a: text 5498 i 26 [Shulgi 45/xii/30]); na-gada (Yildiz and Gomi 1988: text 802 vi 27 [Shulgi 47/v]).

Note also the following mentions of unnamed shepherds: x sheep ki sipad Maš-gán-sabra-ta (Sigrist 1988: text 313:14 [-/-/27]); x sheep ki sipad Maš-gán(-sabra)^{ki}-ta x sheep ki sipad KA-sahar^{ki}-ta (Legrain 1912: text 159:1-5 [Shu-Sin 1/xi]).

As the above data show, in the twelfth month of Shulgi's 42d year, Abi-tab, Ur-Alla, and Ur-lugal were identified as the shepherds of Mashkan-shapir, though only three months later their designation was that of the shepherds of KAsahar. This variation, occurring within such a brief period of time, can only mean that Mashkan-shapir and KA-sahar were situated not far from one another. This point can be verified, since the approximate location of KA-sahar is otherwise known. As is made certain by the Ur III sources from Umma, KA-sahar was situated on the riverway flowing past Adab (the presumed eastern branch of the Euphrates), some thirty km northeast of Nippur (Jacobsen 1960: 177 and n. 9; Carroué 1991: 136–42).

The precise location of KA-sahar, which is known to have served as a relay point between Umma and Nippur, is of great importance for the reconstruction of the hydrological system of Babylonia, and, in particular, for understanding the role of the Tigris in that system. However, this problem (with which the issue of Mashkan-shapir's hydrological situation is closely connected) is too involved to be treated here. I hope to make it the subject of a separate study. See now in detail Steinkeller 2001.

Incidentally, it was this information about Mashkan-shapir's proximity to KA-sahar, plus the archaeological evidence adduced by E. C. Stone, that led Steinkeller in 1988 to consider that Abu Duwari might be the site of Mashkanshapir. At that time, Steinkeller and Stone discussed this idea with a number of colleagues, who, however, voiced general skepticism. But, even before this identification could be suggested in print, it was fully confirmed by the discovery, in January of 1989, of Abu Duwari's inscription of Sin-idinam, for which see below, p. 135).

4. mu Maš-gán-sabraki ba-an-dab₅ (Sigrist 1990a: 23 year name L = Huot 1983: 232 no. 5).

5. For the reign and sources of this ruler, see Hallo 1967; Hallo 1976; Hallo 1982; Michalowski 1988.

6. mu bàd gal Maš-gán-sabraki ba-dù (Sigrist 1990a: 25).

7. šu i-qí-šu na-ap-ša-tam a-na ^{uru}Maš-gán-sabra^{ki} mu-še-eš-qí nu-úh-ši-im a-na MES.LAM, "the one (Hammurabi) who granted life to Mashkan-shapir, the provider of (the waters) of abundance to Meslam" (Bergmann 1953: Hammurabi Code obv. iv 1–6).

which possessed an extensive personnel.⁸ The existence of a cult of Nergal at Mashkan-shapir is also borne out by the discovery there of model chariots in clay which are decorated with his symbols (Stone 1993: 90–93).

No references to Mashkan-shapir survive in the sources dating to the reigns of Sin-iddinam's three successors: Sin-eribam, Sin-iqisham, and Şilli-Adad. It is certain, however, that sometime between the end of Sin-iddinam's reign and the early years of Warad-Sin, Silli-Adad's successor at Larsa, Mashkan-shapir again slipped away from Larsa's control. This is indicated by the fact that either in the fourth or the fifth year of Warad-Sin, Mashkan-shapir was "restored" to Larsa (Frayne 1990: 214–16, 10:19–21). Although conclusive evidence is lacking, it is likely that that event occurred during the last year of Sin-iddinam. The evidence here is the so-called "Letter of Sin-iddinam to Utu,"⁹ which appears to describe the events of Sin-iddinam's last regnal year.¹⁰ There we read of the armies of Elam, Subartu, and Shimashki menacing Sin-iddinam's kingdom and threatening the city of Larsa itself. It cannot be excluded, therefore, that it was these foreign intrusions that led to the loss of Mashkan-shapir. In this connection, it should also be considered that the fortification of Mashkan-shapir in the very same year, and Sin-iddinam's military campaign in the Diyala region one year earlier,¹¹ were precautionary measures in anticipation of precisely such an eventuality.

As we shall argue later, a key player in that phase of Larsa's history was Kudur-mabuk, a sheikh of the Emutbala tribe, and father of Warad-Sin. It appears that Kudur-mabuk took hold of Mashkan-shapir, kept it for a while, and lost it in turn to a certain Silli-Eshtar (see below, pp. 33–34).

However this may have been, by the 5th year of Warad-Sin, Mashkan-shapir was recovered by Larsa. No additional information on its fortunes under Warad-Sin survives, except that in his twelfth year a temple of the goddess Nin(-gá)-BAD.ŠUDUN was erected there.¹²

It appears that Mashkan-shapir reached the apex of its importance during the reign of Rim-Sin, Warad-Sin's brother and successor. Although this is hardly reflected in the native Larsa documentation, which only notes the carrying out, in year Rim-Sin 7, of fortification and irrigation works at that city,¹³ the contemporaneous Mari letters make it clear that, at that time, Mashkan-shapir be-

^{8.} Note the mention of 5 ÉREN.HI.A GÌR.SÈ.GA ^dNergal ša Maš-gán-sabra^{ki}, "5 workers, the personnel of Nergal of Mashkan-shapir" (Dossin 1933–34: text 113:12–13), and the records of a lukur priestess and a sanga of Nergal, apparently that of Mashkan-shapir (Charpin 1994: 213–14).

^{9.} The most recent edition of this composition is by Borger (1991: 22–45). Since then, an additional fragment, stemming from Emar and written syllabically, has been identified by Civil (1996).

^{10.} See line 30: mu imin(var. iá)-kam-ma-ta uru-gá mè šen-šen(-na) la-ba(-an)-du₈ (nam-)úš(-a) á(wr. DA)-bi nugá-gá, "since (or: in) the seventh year (of my reign), in my city battle and strife offer no release, death does not stay its arm." Our understanding of the beginning of this line follows Hallo (1982: 101). Borger (1991: 80), following the bilingual Nineveh ms. (reading [i]- $[na se^{1}-ba-a šá-na-[a^{1}-ti]...$) translates "sieben Jahre lang..." But the conclusion that Sin-iddinam's problems began only in the seventh (and last) year of his reign is favored both by the grammar of the Sumerian version and by the fact that his reign appears to have been generally prosperous and untroubled.

^{11.} mu ma-da / á-dam Éš-nun-na^{ki} ba(-an)-hul (Sigrist 1990a: 24).

^{12.} Warad-Sin 12: mu é ^dNin(-gá)-BAD.ŠUDUN šag₄ Maš-gán-sabra^{ki} mu-un-dù-a / ba-dù (Sigrist 1990a: 36; Stol 1976: 17–18). The reading and interpretation of this divine name is problematic. The extant spellings of it are as follows: ^dNin-gá-BAD.ŠUDUN (Grice 1919: texts 127:9, 202:13, 207:6), ^dNin-BAD.ŠUDUN (Figulla and Martin 1953: texts 138:28, 139:23, 626:41), and ^dNin-EZEN(?).X (Jean 1926: text 12:24). The form of ŠUDUN in these writings is KWU-503 (actually ^{šú}ŠUDUN). A possible analysis of the name in question could be ^dNin(-gá)-^{úš}sudun (here note that ŠUDUN is given a pronunciation uš-ti-núm in the Ebla syllabary [Archi 1987: 96 line 73]). George (1993: 164 no. 1319) interprets it as ^dnin.gá.ug₅.ga, written variously ^dnin.gá.ug₇.x, ^dnin.ug₇.ug₅, and ^dnin.ug₅.ga. But the sign undoubtedly is ŠUDUN and not UG₅; this is especially clear in the Larsa attestations (see, e.g., Grice 1919: text 202:13).

The number and sequence of Warad-Sin's year names follows Sigrist (1985); cf. Frayne 1990: 202.

came a virtual co-capital of the Larsa kingdom. From this correspondence we learn that during the last years of Rim-Sin's reign Mashkan-shapir was ruled by his brother Sin-muballit (Charpin et al. 1988: 146–48), and that Hammurabi of Babylon kept a semi-permanent diplomatic mission there (Charpin et al. 1988: 146 with reference to text no. 362). This appears to have been Hammurabi's only such mission in the kingdom of Larsa (Charpin, personal communication).

The Mari correspondence also offers a detailed and vivid account of the final conflict between Rim-Sin and Hammurabi, in which Mashkan-shapir played a crucial role (Charpin et al. 1988: 147–49; Van de Mieroop 1993: 58–61). Responding to the incursions into Babylonian territories by Rim-Sin, and having secured the support of Mari, Hammurabi mounted an all-out offensive, selecting Mashkan-shapir as his first target (in 1764 B.C.). Following a brief siege, Mashkan-shapir fell, and Sin-muballit, his three generals, and several thousand men were taken prisoner. It was only after the region of Mashkan-shapir had been pacified that Hammurabi moved against the city of Larsa itself, capturing it and thereby annihilating the Larsa kingdom. This course of events dramatically underscores the strategic importance of Mashkan-shapir to Larsa.¹⁴

With the demise of the Larsa kingdom, Mashkan-shapir began the slow process of decline. Though it was deemed sufficiently important to be included by Hammurabi among the major cities named in his Code (see above, n. 7), the paucity of references to Mashkan-shapir in Hammurabi's administrative texts and the complete silence about it in the records of his successors make it certain that the days of its glory were over. Except for lexical texts (Reiner 1974: 14 1. 23; 59 1. 179; 60 1. 65; 104 1. 256; 141 iii 4) and the "Geography of Sargon,"¹⁵ Mashkan-shapir's name is absent from later cuneiform texts.

This picture of Mashkan-shapir's history agrees closely with the results of the surface survey carried out by E. C. Stone and P. Zimansky at the site (see chap. 2). As this survey has shown, Abu Duwari was first occupied in the Uruk period, but this occupation was limited both in extent and in time. Continuous occupation seems to have begun in the Akkadian period, as evidenced by rare sherds found at the site. The site's first stage of development came in Ur III times, with the extent of occupation reaching at least 3 ha. From this period there is also evidence of some royal building activity, as demonstrated by the recovery of stamped bricks naming Amar-Sin. The main urban growth at Abu Duwari took place in the late Isin-Larsa and early Old Babylonian periods, when the site reached its maximum size of 72 ha. The entire site was probably abandoned late in the reign of Samsu-iluna, a date based on the recovered cylinder seal and pottery styles of the uppermost preserved building level. With the exception of a limited Parthian settlement, the site has remained unoccupied to this day.

^{13.} mu abula 2-a-bi šag₄ Maš-gán-sabra^{ki} ba-dù ù ég a-šag₄ šag₄-túm-ma 4 danna mu(-un)-si(-ig)-ga, "the year when two city gates were built in Mashkan-shapir and a 40 km. long dike (supplying) fields (and) meadows was put in place (there)" (Sigrist 1990a: 40; Stol 1976: 19).

^{14.} A further illustration of this point is provided by the Larsa text published by Jean (1926: text 54:6–9), dating to the year Rim-Sin 22, which states that the "troops of Emutbala have gathered in Mashkan-shapir for an expedition to Eshnuna" (ÉREN.HI.A *Ia-mu-ut-ba-lum i-na Maš-gán-sabra^{ki} a-na* KASKAL *Èš-nun-na^{ki} ip-lu-ú-ru*). Although it cannot be determined whether the expedition in question "was an act of aggression or a gesture of help to the king of Eš-nunna" (Van de Mieroop 1993: 55), this datum attests to the great importance of Mashkan-shapir as a connecting point between Babylonia and the Diyala basin.

^{15.} TA É-^dEN.ZU.NA EN *Maš-gán-sabra^{ki}* KUR *Ma-al-gi-i^{ki}*, "from Bit-Sin to Mashkan-shapir: the land of Malgaeans" (Grayson 1974–77: 60 line 24).

The Role of Mashkan-shapir in Early Second Millennium Political History

The sudden emergence of Mashkan-shapir under the Larsa kings and its subsequent decline under Hammurabi and his successors constitutes an intriguing historical problem. Without doubt, the answer to this question lies in the geopolitical realities of the Isin-Larsa period. Being deprived, first by Isin, and later by Kish and Babylon, of access to northern Mesopotamia via the Euphrates, Larsa was forced to develop an alternate route for that purpose. One might hypothesize that this route bypassed the northern Babylonian heartland via the system of canals linking the southern reaches of the Euphrates with the middle course of the Tigris. The actual hook-up with the Tigris seems to have been situated some 40 km. to the northeast of Nippur, a location perilously distant from Larsa but within easy reach of Kish and Babylon. Obviously, a Larsa stronghold was indispensable near that critical juncture. And it was Mashkan-shapir, we have every reason to believe, that fulfilled the function of that stronghold.

However, while strategic factors explain the urban growth of Mashkan-shapir, the primary cause of its rise to prominence might have been quite different. The key issue to be considered in this connection is the relationship between Larsa and the tribe of Emutbala,¹⁶ whose homeland appears to have been situated in the region of Mashkan-shapir. A logical starting point to discuss this problem is the history of Kudur-mabuk's conquest of Larsa, for it is here that those three political entities— Larsa, Emutbala, and Mashkan-shapir—are most palpably brought together.

Kudur-Mabuk

The origins and the early career of Kudur-mabuk remain unclear. Because both he and his father Simti-shilhak bore unmistakable Elamite names, it was commonly believed by scholars that he was an Elamite, perhaps even a member of the Elamite royal family (e.g., Cameron 1936: 7–71; 75–78). This view was challenged by D. O. Edzard (1957: 168–69; 1980–83: 267), who argued that, because of his title *abu Amurrim/Emutbala*, "sheikh of Amorites / the Emutbala (tribe)," a more likely explanation is that Kudur-mabuk stemmed from an Amorite family that had lived for a long time in the trans-Tigridian territories, in the immediate vicinity of Elam. As Edzard envisioned it, either Kudur-mabuk's father or one of his more distant ancestors had entered Elamite service, which would account for their Elamite names.

Although such a possibility cannot be completely excluded,¹⁷ various new data add weight to the assumption that Kudur-mabuk and Simti-shilhak were indeed of genuine Elamite extraction. First of all, we now know that a daughter of Kudur-mabuk bore the Elamite name of Manzi-

^{16.} This tribal/geographical name is variously written E-mu-ut-ba-la, E-mu-ut-ba-lum^(ki), Ia-mu-ut-ba-al^(ki), and Ia-mu-ut-ba-lum^(ki) (Groneberg 1980: 123–24). In the following discussion we will use the form Emutbala throughout, primarily for reasons of convenience, but also because this particular form predominates in the Larsa royal inscriptions.

^{17.} It is clear that there must have been a great deal of interaction between the Amorite and Elamite populations in the border zone between Babylonia and Elam. This is well illustrated by the case of a certain *Ia-mu-ut-Li-im* (a perfect Amorite name) who is designated as an "Elamite" (LÚ.NIM.MA^{ki}) in a tablet from Lagash (Al-Hiba) dating to the reign of Nur-Adad (Biggs 1976: text 36case:14). [Contra Michalowski (1988: 265) the year name of the tablet in question is not Sin-iddinam's but Nur-Adad's. The formula reads: mu ^{giš} šu-nir nesag-g[á . . .], and thus is identical with year name Nur-Adad D variant *B* (Sigrist 1990a: 22). The same year name (mu šu-nir nesag(!)-gá ^ré¹ dNanna in-^rku₄¹-ra) is recorded in an archivally related tablet which has an oath by Nur-Adad lugal and Sin-iddinam (Biggs 1976: text 39). The remaining tablet from the same archive (Biggs 1976: text 38) is dated to Sin-iddinam 1 and also has an oath by Nur-Adad and Sin-iddinam. It would seem, accordingly, that the formula in question belongs to Nur-Adad's last regnal year. Addendum: For the identification of the year name published by Biggs (1976: text 36) as that of Nur-Adad's, see already Stol apud Bauer 1979: 46b.]

wartash,¹⁸ which shows that Elamite traditions ran strong in the family, even after they had firmly established themselves in Babylonia. Furthermore, Kudur-mabuk himself appears to be identified as an Elamite in an economic tablet from Larsa that probably belongs to Sin-iddinam's reign (Simmons 1978: text 333, for which see below, n. 21). And, finally, one notes the presence of Elamites among the entourage of Kudur-mabuk and his son Rim-Sin.¹⁹

However, even if it were fully demonstrated that Kudur-mabuk was an Elamite, this would contribute little to the understanding of the events that led to Warad-Sin's assumption of the throne of Larsa. The earliest possible references to Kudur-mabuk come from two economic tablets from Larsa (Grice 1919: texts 216 and 167), dating to Sin-iddinam 7 and Sin-iqisham 4, respectively.²⁰ A similar reference comes from an undated Larsa text (Simmons 1978: text 333) which can be dated roughly to the time of Sin-iddinam.²¹ These three sources name a Kudur-mabuk, in each case

(c) Ša-ši-in, DUMU Ni-ip-pi, ÁRAD Ri-im-dEN.ZU (Frayne 1990: 315 2020).

20. Grice 1919: text 216 (collated by P.-A. Beaulieu; the reading KAS SIG₅ in line 5 was suggested by M. Stol):

- (1) .1.1 ^rNAR¹.MEŠ
- (2) .1 ^rSAL¹.[N]AR.MEŠ
- (3) .5 ma-aq-qí-tum
- (4) [[].4(?)¹ *Ku-du-ur-ma-bu-uk*
- (5) .2.^r5(?)¹ KAŠ SIG₅
- (6) GI.NA
- (7) ITI.GAN.GAN.È UD 21.KAM
- (8) year name Sin-iddinam 7

Grice 1919: text 167:

- (1) 1. GUR KAŠ 2.TA
- (2) *na-ap-ta-nu-um*
- (3) .3.2 É.SAL.ŠÈ
- (4) .1 Si-li-dAdad
- (5) 2. Ku-du-ur-ma-bu-uk
- (6) 1. U-ba-ri-ia
- (7) 1. Ka-ab-hu-ma
- (8) 2. GUR KAŠ 2.TA
- (9) KI Si-lí-Eš₄-tár BA.ZI
- (10) ITI.GUD.SI.SÁ (UD) 9.KAM
- (11-14) year name Sin-iqīšam 4
- 21. Simmons 1978: text 333 (collated by P.-A. Beaulieu):
 - (1) 1. Ì.GIŠ
 - (2) *Li-la-wu-ú*
 - (3) 1. Ku-du-ur-ma-bu-uk
 - (4) 1. NAR NÍG Ku-du-ur-ma-bu-uk
 - (5) 1. Sa-PI-ra-tum
 - (6) 1. 5 SÌLA Zi-ki-ir-ì-lí-šu
 - (space) (7) .1. Ì.GIŠ ŠU.TI.A
 - (/) .1. I.GIS SULTIA
 - (8) LÚ.NIM.MA KU₄.RA

^{18.} Ma-an-zi-wa-ar-ta-aš, mentioned in a text from Uruk (W 20475) (cf. Falkenstein 1963: 50), to be published by C. Wilcke and K. Kessler (information courtesy of Wilcke). For Ma-an-zi-, see the DNs d.ma-an-za-at and d.ma-an-zi-ni-ri (Hinz and Koch 1987: 853, 874–75). For -wa-ar-ta-aš, see d.si-mu-ut-wa-ar-ta-aš and za-na-wa-ar-ta-aš (Hinz and Koch 1987: 1086, 1282). Is she identical with the daughter of Kudur-mabuk, an *ēntu* priestess of Nanna, whose cultic name was En-an-e-du₇ (Frayne 1990: 299–301 20; etc.)?

^{19. (}a) ^dLa-hu-ra-[til-. . .], DUMU A-bi-li-[. . .], ÁRAD Ku-du-ur-ma-bu-uk (Frayne 1990: 269 2001; Hinz and Koch 1987: 810 under d.la-hu-ra-til, 1045 under d.ru.hu.ra.te.ir).

⁽b) *Ig-mi-il-*^dEN.ZU, DUMU *Ku-uk-ši-ga-at*, ÁRAD ^d*Ri-im-*^dEN.ZU (Frayne 1990: 313–14 2017; Hinz and Koch 1987: 558 under ku-uk-ši-ga-at). The same(?) *Ku-uk-ši-ga-at* writes a letter addressed to his father *Al-la-ra-*P[I(?)] (Figulla and Martin 1953: text 28:1–4).

receiving small food allotments. However, the fact that this individual has no title makes it impossible to conclude that the father of Warad-Sin and Rim-Sin is meant there. It is clear, however, that, whoever he had been, he must have been a person of considerable importance, since, in Simmons 1978: text 333, he is accompanied by his own singer, and singers are mentioned in connection with him also in Grice 1919: text 216. In Simmons 1978: text 333, he, his singer, and two other individuals are jointly described as "Elamites who entered in" (LÚ.NIM.MA KU₄.RA). All in all, it would seem that an identification with the royal Kudur-mabuk is extremely likely, especially since this personal name is otherwise completely unique in Babylonian sources.

The above data seem to indicate, accordingly, that Kudur-mabuk had contacts with the kingdom of Larsa as early as the last year of Sin-iddinam. What was his status at that time, and where did he reside? It seems safe to assume that he already was in charge of the Emutbala tribes²² and that he resided in Mashkan-shapir, positioning himself to take over the throne of Larsa.

That Kudur-mabuk was based at Mashkan-shapir for at least a few years before he conquered Larsa is strongly indicated by the fact that his sons' and his own personal god was Nergal,²³ the chief deity of Mashkan-shapir (see above, pp. 27–28 and nn. 7 and 8). Although one could argue that Kudur-mabuk's connection to Nergal was established only after (and because of) the capture of Mashkan-shapir in the year Warad-Sin 4 or 5 (see below, pp. 33–34), this would seem to be precluded by the fact that Warad-Sin calls Nergal "his personal god" as early as his second regnal year,²⁴ at a time when Mashkan-shapir was under foreign occupation.

For the text type, cf. Goetze (1950: 111 YBC 10446, 10836). Attribution to Sin-iddinamís reign is suggested by a comparison with Goetze (1950: 111 YBC 10836 [Sin-iddinam 5]) and Grice (1919: text 216 [Sin-iddinam 7]), both of which mention SAL.NAR. Further, note that Zikir-ilišu of the present text could be identical with Zikir-ilišu appearing in Simmons (1978: text 288:3) which belongs to Sin-iddinam 7.

22. How he had accomplished this will remain a mystery until new evidence becomes available.

23. This is demonstrated by the following data:

(a) Kudur-mabuk: ^dNergal i-lum ba-ni qá-aq-qá-di-ia, "Nergal the god my creator (lit.: the creator of my head)" (Frayne 1990: 267–68 2:44–45).

(b) Warad-Sin: ^dNergal dingir-ra-na, "Nergal his personal god" (Frayne 1990: 205–7 3:35–37); ^dNergal dingirmu, "Nergal. my personal god" (Frayne 1990: 246–47 23:32).

(c) Rim-Sin: ^dNergal . . . dingir-ra-ni-ir, "for Nergal his personal god," ^dNergal dingir sag-du-ga-na (for sag-dug₄ga-na; sag . . . dug₄ = *banû*, see Gelb et al. 1965: 94a lexical section of *bānû*), "Nergal his creator" (Frayne 1990: 277– 78 5:1–6, 21–22); dumu ù-tu-ud-da en ^dNergal-ta šag₄-ta nam-gal-ta, "child fashioned/engendered in the womb by the lord Nergal with greatness" (Hallo 1991: 383 line 14). Further, note the existence at Nippur of a baked-brick structure (á-diri sig₄-al-ùr-ra) that had been dedicated to Nergal for the life of Rim-Sin by a certain Ninurta-gamil (Frayne 1990: 306–7 2005). Since the cult of Nergal was never prominent at Nippur, this particular dedication appears to reflect Rim-Sin's personal devotional tastes. [For Nergal being the personal god of Rim-Sin, see also the PN *Rīm-Sin-Nergal-lamassašu*, discussed by Stol (1985: 94).]

In this connection, note that the personal god of Sin-iddinam (and thus apparently also of his father Nur-Adad) was Ishkur: ^dIškur dingir-mu (Frayne 1990: 159–60 2:36); ^dIškur dingir-ra-ni (Frayne 1990: 177–79 15:44). Sin-iddinam is also called dumu-sag ^dIškur-ke₄ (Frayne 1990: 157–58 1:27; Van Dijk 1965: 5 line 27). The personal god of Sin-iribam and Sin-iqisham (father and son) is not known.

Here it should be mentioned that the cult of Nergal enjoyed great popularity in the Larsa kingdom in general, even before the arrival of Kudur-mabuk and his sons. This was probably due to the prominence of Nergal's cult in Mashkan-shapir, which was part of the Larsa kingdom since at least the reign of Zabaya. There was a temple of Nergal at Larsa (Leemans 1954: 92 no. 65:4; Goetze 1950: 86 YBC 10366:2, 103 UIOM 2022:5, YBC 8728:5, 104 UIOM 2021:5, UIOM 2031:5; etc), and he may have had temples at Ur and Uruk as well (Frayne 1990: 205–7 3; 246–47 23; 277–78 5). Cf. Leemans (1954: 93): "that he was commonly worshiped at Larsa is proved by the rather large number of seals whose owners call themselves his servant."

24. Frayne 1990: 205–7 3:35–36, which can be correlated with year name Warad-Sin 2.

^{(9) &}lt;sup>r</sup>x x (x)¹

⁽¹⁰⁾ Zi-ki-ir-ì-lí-šu

It would seem, accordingly, that during the reigns of Sin-eribam (two years), Sin-iqisham (five years), and Ṣilli-Adad (one year or less²⁵) Kudur-mabuk remained firmly in control of Mashkanshapir. His conquest of Larsa very likely began already during the reign of Ṣilli-Adad. In fact, one suspects that Ṣilli-Adad was a vassal (or perhaps even an appointee) of Kudur-mabuk,²⁶ and that his rulership was limited to the Larsa homeland proper. This is indicated by his modest title "governor (énsi) of Ur, Larsa, and Lagash, and of the territory (ma-da) of Kutalla."²⁷ Be that as it may, there is no doubt that Kudur-mabuk was responsible for his eventual removal. Given the fact that Warad-Sin uses Ṣilli-Adad's titulary²⁸ in the inscriptions dating to the beginning of his reign, Warad-Sin's initial appointment at Larsa apparently was as Kudur-mabuk's subordinate in charge of the southern provinces.

The reconstruction of these events is complicated by the puzzling fact that around this time, when Kudur-mabuk's territorial expansion seemingly had reached its height, Mashkan-shapir was temporarily lost to him. The evidence for this is the fact that Mashkan-shapir had to be retaken in the year Warad-Sin 4 or 5.²⁹ Furthermore, in an inscription of Kudur-mabuk one finds an enigmatic reference to Silli-Eshtar, "a man of Mashkan-shapir, an enemy of Larsa, evil-doer against Emutbala," who was captured by Kudur-mabuk and brought by him in shackles to Ninlil's sanctuary Gá-^{giš}šú-a in Nippur.³⁰ Unfortunately, the interpretation of this datum is highly uncertain, since the description "man (lú) of Mashkan-shapir" need not necessarily mean that Ṣilli-Eshtar³¹ was a "king" or "ruler" of Mashkan-shapir.³² It is equally plausible that Ṣilli-Eshtar simply stemmed from Mashkan-shapir; and, if so, the locus of his activities against Larsa and Emutbala may have been somewhere else. Nevertheless, when one considers this episode together with the retaking of Mashkan-shapir in Warad-Sin 4 or 5, it is tempting to think that the two events were in fact interrelated and that it was Şilli-Eshtar who had been behind the capture of Mashkan-shapir.

Furthermore, it is likely that that loss of Mashkan-shapir was directly connected with the invasion of the territories of Larsa and Emutbala by Kazallu and Mutiabal at the very beginning of

^{25.} mu *Şi-lí-d* Adad lugal / nu lugal / nam-lugal-ta (íb-ta-)bu-ra, "the year Ṣilli-Adad was king / was not king / was removed from kingship" (Sigrist 1990a: 30).

^{26.} It is interesting to note that a person named Silli-Adad is listed together with Kudur-mabuk in a Larsa tablet dating to the fourth year of Sin-iqisham (Grice 1919: text 167:4, cited above, n. 20). Is he the later king?

^{27.} énsi Úrim^{ki} Larsam^{ki} Lagaš^{ki} ù ma-da Ku-ta-al-la^{ki}-a-ke₄ (Frayne 1990: 199–20 1:5–10, 200–201 2:5–10).

^{28.} Frayne 1990: 203-4 1:7-10, 204-5 2:7-12. In this connection, note also that, in another of his early inscriptions, Warad-Sin calls himself simply a "governor of Utu" (énsi ^dUtu dumu Ku-du-ur-ma-bu-uk ad-da kur-Mar-tu [Frayne 1990: 255-56 30:4-7]).

^{29.} Maš-gán-sabra^{ki} Kar-ra-^dUtu^{ki}-ke₄ Larsam^{ki}-šè hé-em-mi-gi₄, "he (the god Nanna) restored Mashkan-shapir (and) Kar-Šamaš to Larsa" (Frayne 1990: 214–16 10:19–21). This inscription correlates year-name Warad-Sin 5 (Frayne 1990: 212, 214). For Kar-Šamaš, which seems to have been situated on the Tigris, see Groneberg (1980: 134).

^{30. &}lt;sup>r</sup>*Și*¹-*lí*-*Eš*₄-*tár* lú Maš-gán-sabra^{ki} lú érim Larsam^{ki}-ma hul-gál E-mu-ut-ba-lum^{ki}-šè (Frayne 1990: 266–67 1:1–4).

^{31.} The restoration of Silli-Eshtar's name in an inscription of Sin-iddinam, proposed by Van Dijk (1965: 2 line 125, 7, 13) is unlikely, as it is supported neither by the copy nor by chronological considerations.

^{32.} So Frayne (1990: 266).

Warad-Sin's reign, either in his second or first regnal year.³³ All these data combined suggest the following tentative reconstruction of the events:

As Kudur-mabuk was preoccupied with consolidating his power at Larsa during the succession strife that followed the reign of Sin-iqisham, Kazallu and Mutiabal took advantage of the opportunity, invading the territories of Larsa and Emutbala. Concurrently, Şilli-Eshtar established himself as ruler of Mashkan-shapir (or, alternatively, was installed there by the invaders).³⁴ Although Kudur-mabuk seems to have repelled that invasion, Şilli-Eshtar remained in control of Mashkan-shapir for another two or three years, after which the city was finally recaptured and Şilli-Eshtar himself taken prisoner.

Larsa, Emutbala, and Mashkan-shapir

The question of the circumstances of Kudur-mabuk's conquest of Larsa offers a convenient point of departure to examine more closely the issue of the political and geographic triangle Larsa—Mashkan-shapir—Emutbala. On the basis of the textual data available for the reigns of Warad-Sin and Rim-Sin, and thanks to the identification of the site of Abu Duwari as Mashkan-shapir, M. Van de Mieroop has recently argued that the kingdom of Kudur-mabuk and his two sons was "a union of two states: in the south the kingdom of Larsa with its capital city of Larsa, and in the north the state of Emutbalum, with its capital city of Mashkan-shapir" (1993: 51). According to Van de Mieroop, "the dual character of the kingdom explains the specific system of government that existed throughout the reign of Warad-Sin and survived in the early part of Rim-Sin's," in which "the father Kudur-Mabuk seems to have resided in the northern city of Mashkan-shapir, while the sons occupied the throne of Larsa" (1993: 50). This particular arrangement reminded him of the state of Samsi-Addu in northern Mesopotamia, where Samsi-Addu, himself based at Shubat-Enlil, put his sons Ishme-Dagan and Yasmah-Addu in charge of Ekallatum and Mari, respectively (1993: 51).

Similar conclusions about the make-up of the Larsa kingdom under Kudur-mabuk and his sons were reached earlier by D. Charpin (1988: 147–48; Charpin wrote without the benefit of the Mashkan-shapir = Abu Duwari identification).³⁵ As a matter of fact, a similar—though not as far-reaching—position was taken by the present author as well.³⁶

The assumption that the kingdom of Kudur-mabuk was a union of two separate states—Larsa and Emutbala—each with its own capital, would, because of its neatness and simplicity, be a convenient one. However, there are at least two important reasons to think that the situation was actually considerably more complicated.

(a) If the Larsa kingdom was a union of two states, it is strange that this fact finds no reflection in the Larsa royal titulary. This situation is particularly puzzling since, as we now know, the rulers

^{33.} ugnim Ka-zal-lu^{ki} ù Mu-ti-a-ba-al-la-ke₄ šag₄ Larsam^{ki} šag₄ E-mu-ut-ba-la-ke₄ sag giš bí-in-ra-a, "(Kudurmabuk) who smote the armies of Kazallu and Mutiabal [clearly a neighbor and a relative of the Emutbala] in Larsa (and) in Emutbala" (Frayne 1990: 205–7 3:12–15, 207 4:4′–8′); year name Warad-Sin 2: mu bàd Ka-zal-lu^{ki} ba(-a/an)-gul ù ugnim-bi Mu-ti-ba-al šag₄ Larsa^{ki} gištukul ba-a-tu₁₁(HÚB) / ba-sìg, "the year (when) the walls of Kazallu were destroyed and the army of Mutiabal was defeated in Larsa" (Sigrist 1990a: 31).

^{34.} Had he been earlier one of Kudur-mabuk's officials Mashkan-shapir?

^{35.} See, especially, the following statement: "L'image qui ressort du royaume de Larsa sous Rîm-Sîn est dés lors celle d'un Etat bicéphale: à côté de la capitale, Larsa, Maškan-šapir jouait un rôle très important, non seuelment sur le plan économique et juridique, mais aussi politique, puisque c'était la résidence du frère de Rîm-Sîn, Sîn-muballiț" (Charpin 1988: 148).

^{36.} See, especially: "... there are very strong reasons to believe that ... Mashkan-shapir served as the chief political and administrative center of the land of Emutbal" (Steinkeller and Stone 1990: 4).

of the Larsa dynasty had controlled Mashkan-shapir (and therefore Emutbala; but see below) at least since the reign of Zabaya. Mashkan-shapir is never mentioned in such contexts, while the only mention of Emutbala comes from the title *abu Emutbala*, "sheikh of the Emutbala (tribes),"³⁷ which is assigned to Kudur-mabuk in the Larsa royal inscriptions beginning with ca. the seventh regnal year of Warad-Sin (Frayne 1990: 202). However, this appellative cannot be considered a proper equivalent of the title "king of Larsa," since it is essentially an ethnicon, signifying control over a tribal group rather than a concrete territorial and political entity.³⁸

Kudur-mabuk's earlier title was that of ad-da kur-Mar-tu (*abu Amurrim*), a generic designation of "Amorite sheikh" (Frayne 1990: 205–22 3, 5, 6, 7, 9, 10, and 13), ³⁹ which is even more devoid of territorial connotation. There can be no doubt, however, that this appellative, too, signified (though only implicitly) an overlordship over the Emutbala groupings that was made explicit by the title *abu Emutbala*.⁴⁰ The same is apparently true of the title *rabiān* MAR.TU,⁴¹ which was borne, in the beginning of the Larsa period, by Zabaya⁴² and Abi-sare.⁴³ The implications of this persistent association of the Larsa dynasty with the Emutbala tribes will be discussed in detail later in this chapter.

38. In this connection, two other points may be made:

39. That ad-da kur-Mar-tu is the same as ad-da Mar-tu = $abu \ Amurrim$ is shown, on the one hand, by the documented examples of $abu \ Amurrim$ (note, especially, Figulla and Martin 1953: text 62:11–26 where the unnamed $abu \ Amurrim$ is almost certainly Kudur-mabuk), and, on the other hand, by the fact that the hypothetical * $abu \ mathat{at Amurrim}$ is not attested. For ad-da Mar-tu / $abu \ Amurrim$, see in detail Rowton 1969: 68–73. Rowton too tended to think that ad-da kur-Mar-tu and ad-da Mar-tu are identical titles: "If the two titles are not the same the royal title would be $abu \ mathat{at Amurrim}$, the lesser title $abu \ Amurrim$, literally 'father of the Amorite,' in the sense of 'Amorite chieftain.' But in the present writer's opinion this hardly constitutes a plausible solution; the titles would be too similar" (1969: 70).

40. Frayne (1990: 202) believes that "the second title was probably adopted concurrent with the recognition of his son, Warad-Sîn, by the Nippur authorities," but it is difficult to think of any logical connection between the two events.

41. For this title, see Stol 1976: 85–88; Michalowski 1983: 240–41. For the occurrence of this title describing Abda-El of Eshnuna, cited provisonally by Stol (1976: 87), see now Whiting 1987: 26, pl. 27 Supplement 2. For yet another attestation, describing Arim-Lim of Meturan, see Frayne 1990: 700 1:1–3. See also Frayne 1990: 702 1:1–3: $A^{-r}ia^{-1}bu^{-r}um^{-1}...rabi-ba^{-r}um^{-1}...rabi-ba^{-r}um^{-1}$

While *rabiān Amurrim* is a generic term for "sheikh," specific sheikhs are designated by the construction *rabiān* Tribal Name, examples of which are *rabiān Rababē* and *rabiān Amnān-Šadlaš* (Stol 1976, 86–87). Compare also LUGAL (= šar?) *Amnānum*, used by Sin-kashid and Ilum-gamil of Uruk. The sense of *abu Amurrim* appears to be virtually identical to that of *rabiān Amurrim*. The fomer is conceivably a more elevated title, perhaps signifying a sheikh of the highest ranking who controlled several *rabiānus*.

42. Za-ba-a-[a], NITA KALAG.G[A], ra-b[*i*-an MAR.TU], [DUMU Sa-mi-um] (the Abu Duwari text, see p. 146 = Frayne 1990: 112 2:1-4); Za-ba-a-a, ra-b*i*-an MAR.TU, DUMU Sa-mi-um, É.BABBAR.RA, *i-pu-uš* (Frayne 1990: 111–12 1:1–5—a stamped brick from Larsa).

43. ra-bí-a-nu-um Mar-tu-me-en (Frayne 1990: 121-24 1 i 27'); ra-bí-an Mar-tu (Frayne 1990: 127-28 2004: 4).

^{37.} This title is recorded in one of his own inscriptions (Frayne 1990: 267–68 2:2), those of Warad-Sin (passim), as well as those dating to the very beginning of Rim-Sin's reign (Frayne 1990: 273–74 2:7; 274–75 3:7). It is striking that after the death of Kudur-mabuk (which seems to have occurred around Rim-Sin's fifth year; see below, n. 75), the title was not assumed by his son. For the possibility that *abi Emutbala* may go back to Ur III times, see below, p. 40.

⁽a) It is characteristic that, as it is used in Larsa royal inscriptions, the term Emutbala appears without the semantic determinative ki. [The only exception here is Frayne 1990: 266–67 1:4 reading E-mu-ut-ba-lum^{ki}. However, since this inscription comes from Nippur and survives only in a scribal copy, the writing in question could be a later redaction.] This indicates that, at Larsa, this term denoted primarily the "Emutbala tribe" and only secondarily the "territories of the Emutbala tribe."

⁽b) In three instances only are Larsa and Emutbala mentioned in one breath: Kudur-mabuk's "negative confession" of committing no crimes against Larsa and Emutbala (Frayne 1990: 267–68 2:4–7); the accusation against Silli-Eshtar of having been an "enemy of Larsa" and "an evil-doer against Emutbala" (Frayne 1990: 266–67 1:3–4); and the passage describing the conflict with Kazallu and Mutiabal, whose armies were defeated "in Larsa (and) in Emutbala" (see above, n. 33) (but note that Emutbala is omitted in the corresponding year-name). But even these examples do not suggest that the two designations be understood as fully parallel.

(b) Another reason why the Larsa kingdom (specifically that of Kudur-mabuk) can hardly be considered a union of two sovereign states—Larsa and Emutbala—is that, as demonstrated more than twenty years ago by M. Stol (1976: 50–52, 63–72), during the second half of the Old Babylonian period, the term Emutbala described not only the region of Mashkan-shapir and the territories farther east but also the very Larsan homeland. This is particularly true of the inscriptions dating to the reigns of Hammurabi and Samsu-iluna (Stol 1976: 50–52, 65–68).⁴⁴

The explanation of this situation appears to be that, although the original homeland of the Emutbala tribes in southern Mesopotamia was situated in the trans-Tigridian region (Stol 1976: 64),⁴⁵ probably in the immediate vicinity of Mashkan-shapir, the subsequent migration of the Emutbalans to the south—as far south as and including the region of Larsa and Ur (which may have begun as early as the second half of the Ur III period; see below)—broadened the concept of Emutbala to include under it the territory of the Larsa kingdom proper. In this way, while the region to the north, with Mashkan-shapir as its focal point, apparently constituted the core (and thus sensu stricto) tribal territory of the Emutbala, the same designation aptly pertained to the areas to the south as well.⁴⁶

These facts suggest that the make-up of the Larsa kingdom was a peculiar one and quite unlike that of the empire of Samsi-Addu. It would seem that, rather than being a union of two separate sovereign states, the kingdom of Kudur-mabuk (and similarly that of his predecessors at Larsa, going probably as far back as the beginning of the dynasty) was a dimorphic one,⁴⁷ combining two different and quite separate entities: a tribal state of the Emutbala within which was embedded a sovereign state of Larsa.⁴⁸

Zabaya

To explore such a possibility further, we need to take a closer look at the early history of the relationship between Larsa and Emutbala. Thanks to the discovery of an inscription of Zabaya, the

^{44.} In this connection, one notes that in two of the royal inscriptions of Samsuiluna Emutbala is written with a curious logogram KI.EN.GI.SAG.6: Ri-im-^dEN.ZU mu-uš-ba-al-ki-it KI.EN.GI.SAG.6 ša a-na šar-ru-ut Larsam^{ki} in-na-ši-ù, "Rim-Sin (II) who caused Emutbala to rebel, (and) who was elevated to the kingship of Larsa" (Frayne 1990: 384–88 7:93–97); [Ri-im-^dEN].ZU [LUGAL(?) KI.EN].GI.[SAG].6 (Frayne 1990: 379 4 i 2'-3'). For other (all later) occurrences, see Stol 1976: 71–72. Since in this logogram KI.EN.GI cannot signify anything besides "Sumer" (note the sequence ma-da ki-in-gi^{ki} = MIN Šu-me-ri, ma-da ki-in-gi-uri^{ki} = MIN MIN u [Ak-k]a-di-i, ma-da ki-in-[g]i-sag. 6^{ki} = MIN Ia-mu-ut-ba-li (Reiner 1974: II. 26'-28' which joins Horowitz 1988: 72 n. 4), its meaning is probably "Sumer of 6 chief (cities)," with SAG standing for URU.SAG. As such, it could denote the eastern (Tigridian) section of Sumer, with the six cities in question conceivably being Larsa, Ur, Lagash, Umma, Adab, and Urusagrig, to name just the most likely candidates.

^{45.} This sense was preserved (or revived) in the later learned tradition. See Stol 1976: 71-72.

^{46.} In this light, Stol's conclusion (1976: 64) that "Larsa at this time [i.e., of the Kudur-mabuk dynasty] was located in Emutbala" is not completely unjustified.

^{47.} Because of this, a much more apt analogy for the organization of the Larsa state is provided by the dimorphically structured OB kingdom of Mari, which meshed a territorial state (the city of Mari and other settlements along the *ah Purattim*, "the bank of the Euphrates") with an amorphous tribal domain (*māt Hana*, "the land of the Bedouins") (Durand 1998: 417–20; Fleming 1999).

^{48.} Quite pertinent for this point seem to be the conclusions about the character of the Larsa kingship reached by Michalowski (1983: 241): "It appears that the best interpretation of these titles [i.e., the title *rabiān Amurrim* borne by Zabaya and Abī-sarē] is to assume that legitimacy in this period was not only a function of the traditional Mesopotamian trappings of power, as well as of power itself, but was also related to the status of a given ruler within the kinship structure of the Amorite tribes. In other words, I am suggesting that these titles provide a form of 'genealogical charter' for the legitimization of kingship; it was not enough to be king, one had to claim descent from the proper lineage within the Amorite tribes."

fourth ruler of the Larsa dynasty, at Abu Duwari, it is now clear that the region of Mashkan-shapir (and thus the core area of the Emutbala tribes) formed part of the kingdom of Larsa at least as early as his reign. As I suggested earlier, Zabaya's title *rabiān Amurrim*, which is found in the inscription from Mashkan-shapir, as well as in his other surviving inscription from Larsa, implies (as does the same title in the inscriptions of Abi-sare later) control over the Emutbala tribes. The fact that this is the *only* royal designation of Zabaya⁴⁹ in either source suggests that, even in the city of Larsa itself, the rank of an Emutbala sheikh took precedence over that of the king of Larsa.

No royal inscriptions of Zabaya's three predecessors—Naplanum, Emişum, and Samium⁵⁰ survive, but it is certain that Samium, his father, was firmly in charge of the region of Larsa, since an oath invoking his name appears in a tablet from Girsu.⁵¹ With Naplanum and Emişum—for whom the testimony of the Larsa King List is the only evidence—we are on considerably shakier ground, but a number hypothetical suppositions can be made nevertheless.

Emişum

Starting with Emişum, the only possible evidence that he was a historical figure is provided by two tablets from Isin dating to the reign of Ishbi-Erra (Crawford 1954: texts 217:3 [Ishbi-Erra "24"?], 316:34 [Ishbi-Erra "15"]), which name a certain E-mi/me-sum.⁵² Of special interest is the second text, in which Emisum appears as one of some forty Amorites receiving gifts (níg-šu-taka₄-a = Akk. $s\bar{u}bultu$).⁵³ While this could of course simply be a namesake of the royal Emisum, it is significant that the whole group of Amorites clearly had been individuals of high social standing. This is shown by the fact that they included Abda-El and his son Ushashum, members of a powerful sheikh family in the Diyala Region that is known to have formed a dynastic alliance with the royal house of Eshnuna (through Ushashum's marriage to a daughter of Nur-ahum; Whiting 1987: 26).⁵⁴ The reign of Ishbi-Erra would chronologically fit an identification with Emisum of the Larsa King List, but, in the absence of any other corroborative evidence, such an identification must remain tentative.

Naplanum

As for Naplanum, it had been proposed many years ago by B. Landsberger⁵⁵ that he might be identical with the Amorite Naplanum who is frequently mentioned in Ur III texts dating from the late years of Shulgi well into the reign of Shu-Sin.⁵⁶ This problem was studied most recently by

^{49.} Apart from the title NITA KALAG.GA in the Mashkan-shapir piece.

^{50.} According to the Larsa King List: 21 MU *Na-ap-la-nu-u*[*m*]; 28 MU *E-mi-sum*; 35 MU *Sa-mu-um* (Clay 1915: text 32:1–3).

^{51.} MU Sa-mi-um IN.PÀD (de Genouillac 1934–36: pl. LIII AO 130.15:8–9). Cf. Edzard 1957: 78. Note also the mention of a Sa-mi-um in an Eshnuna letter dating, in all probability, to the reign of Bilalama (Whiting 1987: 85 no. 30: 32, 39; 87).

^{52.} Cf. the spelling E-mi-sum in the Larsa Royal List (see above, n. 50).

^{53.} For this term, describing specifically *diplomatic* gifts, see Whiting 1987: 26; Brinkman et al. 1992: 188–90.

^{54.} Note that the same tablet (line 43) also mentions a certain Napshanum (attested also in Crawford 1954: text 408:22 [Išbi-Erra "13"]), who could conceivably be identical with the Ur III Napshanum, a messenger of Yamutum (see below, n. 69).

^{55.} Landsberger (1924: 237 n. 6) wrote: "Daß er mit dem N. der Tafeln von Drehem . . . , offenbar Häuptling eines martu-Stammes identisch ist, ist nicht ausgeschlossen." Cf. also Edzard (1957: 24 n. 102), who left this question open.

^{56.} To my knowledge, his earliest attestation is Shulgi 44/iii/21 (Sigrist, Owen, and Young 1984: text 704:11), while the latest, Shu-Sin 6/vii/4 (Yildiz and Gomi 1988: text 1172:5).

G. Buccellati (1966: 319–20), who, having weighed the pros and cons, tended to discount any connection between the two individuals.⁵⁷

In the meantime, however, extensive new data on the Ur III Naplanum have become available, which, I believe, force us to give Landsberger's hypothesis very serious consideration. To begin with, it is apparent that the Naplanum of Ur III sources was not only by far the most important Amorite chieftain known to have interacted with the Ur III state, but he also counted among the most prominent figures of the age. This is shown, above all, by the sheer number of textual attestations of him (Edzard and Farber 1974: 124; Owen 1981: 257; Sigrist 1984: texts 453:11, 940:3; Sigrist 1988: texts 108:4, 175:10, 358:11; Sigrist 1991: text 88:10; Sigrist 1990b: text 57:12; Yildiz and Gomi 1988: texts 812:3, 915:7, 1147:4, 1172:5; Owen 1991: text 201:11; Spar 1988: text 17: 60; etc.) and the fact that he invariably appears first (or last) in the multiple listings of Amorites, an indication of his superior rank (de Genouillac 1911a: text 5508; Owen 1975: text 423; Yildiz and Gomi 1988: text 915; etc.). Not only are his own activities amply documented but so are those of his family: his (unnamed) wife,⁵⁸ his brother Yanbuli,⁵⁹ his sons Shulgi-abi⁶⁰ and Ili-babum,⁶¹ and his nephews Abi-ishkil⁶² and Dannum.⁶³ Among the data bearing on Naplanum, of special importance is the information that in the years Amar-Sin 7–8 (if not earlier) he resided in the town of Kisig,⁶⁴ which

61. 10 sheep expended as sá-dug₄ Ì-lí-ba-bu-um dumu Na-ap-la-núm Mar-tu . . . šag₄ Úrim^{ki}-ma (Buccellati 1966: 87 Unpublished B rev. 29–32, 43 [IS 2/x/1–20]).

62. A-bí-iš-ki-in(sic!) dumu-ni (of Yanbuli) (de Genouillac 1911a: text 5508 i 9 [Amar-Sin 4/i/6]); A-bí-iš-ki-il . . . Mar-tu (Spar 1988: text 17:61 [Amar-Sin 4/vii/1]; Sigrist 1984: text 940:7 [Amar-Sin 9/vi/26]). The name is possibly to be analyzed as Abī-yiskil.

63. Dan-núm šeš-a-ni (of Abi-ishkil) (Spar 1988: text 17:62 [Amar-Sin 4/vii/1]).

^{57.} See, especially: "The data at our disposal do not unfortunately allow a clear answer to this problem, but they do not seem in favor of identifying the Nablānum of Drehem with the Nablānum of Larsa" (Buccellati 1966: 319).

^{58. 20} udu niga é-muhaldim ki Na-ap-la-núm Mar-tu-šè [x udu] niga dam Na-ap-la-núm Mar-tu (Sauren 1978: text 349:7–9 [Shulgi 48/xi/12]); [x]+15 gud n[iga] [N]a-ap-la-núm [Ma]r-tu(!) [x] máš [dam Na]-ap-la-núm Mar-tu (Sigrist 1984: text 453:10–13 [Shulgi 48/xii/12]).

^{59. &#}x27;À-a-bu-la Mar-tu šeš Na-ap-la-núm Mar!-tu (Grégoire 2000: text Ashm. 1971-363:11 [Shulgi 46/iii/7]); Ià-an-bu-li šeš-a-ni (de Genouillac 1911a: text 5508 i 7 [Amar-Sin 4/i/6]).

^{60. 1} gud niga ^dŠul-gi-a-bí ud Na-ap-la-núm ab-ba-ni-ir kaš in-na-ni-dé-a . . . šag₄ Úrim^{ki}-ma, "1 barley-fed ox (for) Shulgi-abi, when he 'libated beer' for his father Naplanum . . . at Ur'' (Watson 1986: text 85:1–3, 9 [Amar-Sin 8/x/22]). He is also attested in the Drehem sources (de Genouillac 1911a: text 5508 i 14 [Amar-Sin 4/i/6]; Spar 1988: text 17:63 [Amar-Sin 4/vii/1]; de Genouillac 1911b: text 27:10 [Amar-Sin 5/i/[x]]; Nies 1920: text 92:32 [Amar-Sin 8/xii/29]), as well as in two tablets from Lagash: 1. zíd gur má-a gar-ra ki Ur-Gar ugula-kinkin-[t]a ^dŠul-gi-a-bí Mar-tu, "1 gur of flour loaded on a boat; from Ur-GAR, the mill-manager, (received by) Shulgi-abi, the Amorite" (Hussey 1915: text 108:9–12 [Amar-Sin 3/ii]; 6. kaš ú-sa .3. 10 lá 1. kaš ú-sa .2. má-a gar-ra ki Ur-^dNanše ugula(!) dumu Ur-é-an-na-ta ^dŠul-gi-a-bí Mar-tu zi-ga (Owen 1982: text 124:4–9 [Amar-Sin 3/ii]). Almost certainly the same Shulgi-abi receives garments, in Ur, in the company of such important personages as the en priestess of Nanna, the crown-prince Shu-Sin, and the general Ilallum (Snell 1979: text 184—the date is not preserved, but the tablet assur-edly belongs to Amar-Sin's reign).

^{64.} This is demonstrated by an unpublished tablet from Lagash: 1 má 60. gur .1 6 sìla-ta bala-ta ud 20 lá 1-a zalla-ta dumu A-bí-a-lí má-lah₄-šè ì-íb-ši-hun ki Na-ap-la-núm Mar-tu-šè níg-šu-taka₄-a ba-a-gar Kisig(EZEN×SIG₇)^{ki}šè, "1 boat of (the capacity of) 60 gur, at the (rental rate) of 16 liters (of barley per day), from the bala period the 29th day having passed, was hired for the son of Abi-ali, the boatman; a gift for Naplanum, the Amorite, was loaded into it (to be transported) to Kisig" (HSM 1911.6.37:1–6). For níg-šu-taka₄-a = *šūbultu*, see above, p. 37 and n. 53. Although this document is not dated, it can be correlated with three other Lagash tablets, which record the dispatchments of identical boats to Naplanum in the years Amar-Sin 7 and 8: 1 má 60. níg-gún-na La-ap-la-núm Mar-tu (Owen 1982: text 97:11 [Amar-Sin 7 /xii/5]); 1 má 60. ki Na-ap-la-núm (Lafont and Yildiz 1989: text 922:10 [Amar-Sin 8/xi/29]); 1 má 60. ki Na-ap-la-núm (Lafont and Yildiz 1996: text 2785:8 [-/xi/12]). That Naplanum was in Kisig at that time is proved by a Drehem tablet dated to Amar-Sin 8/x/-: 25 udu ba-úš sá-dug₄ Na-ap-la-núm Mar-tu Kisig(!)("BÀD")^{ki}ta (Jones and Snyder 1961: text 104:6–7). Note, further, that during the year Amar-Sin 8 Naplanum was a frequent visitor to Ur (Yildiz and Gomi 1988: text 1147:4 [Amar-Sin 8/x/13]; Watson 1986: text 1 85:1–3 [Amar-Sin 8/x/22];

in all probability is to be sought near Ur (Beaulieu 1992: 416–21).⁶⁵ Although we lack confirmation that he continued to live there in the following years, the fact that his son Ili-babum was active at Ur in the second year of Ibbi-Sin's reign (see above, n. 61) supports this proposition.⁶⁶

The fact that Naplanum resided in Kisig is of course highly significant, since this is precisely the area where the Larsa kingdom was later situated. However, we know that Kisig was not the only place where Naplanum was active, since in the second month of year Amar-Sin 1, and again in the first month of year Amar-Sin 7, we read of shipments of animals that were sent by boat to him in the "land of Martu" (kur Mar-tu).⁶⁷ Thus it may be that the "land of Martu" was Naplanum's original home, and that he continued to visit and perhaps even kept a residence there.

Although the precise location of the "land of Martu" in Ur III times remains unknown, one may strongly conjecture that it was situated in the trans-Tigridian region, possibly in the area of Jebel Hamrin (Michalowski 1976: 103–11).⁶⁸ If so, in moving from the "land of Martu" to the

65. Kisig is probably identical with the site of Tell el-Lahm = EP-172 (Wright 1981: 330, 345; cf. Jacobsen 1960: 183).

66. In this connection, note also the mention of the "Amorites who came from Kisig" (Mar-tu Kisig^{ki}-ta gin-name-éš) in a tablet from Ur (Legrain 1937–47: text 1136:9'). Although the date-formula of this tablet is not preserved, it must date after Shu-Sin 4, when the ending -éš was introduced in the writing of the plural copula.

67. 1 gud niga 2 udu niga-3-kam-ús ki Na-ap-la-núm Mar-tu-šè kur Mar-tu-šè má-a ba-a-gub, "1 barley-fed ox (and) 2 barley-fed sheep, third grade, were loaded on a boat (to be shipped) to Naplanum, the Amorite, to the 'Land of Martu'" (Young 1992: text Wabash 1:1-4 [Amar-Sin 1/ii/26]); 5 udu niga ki Na-ap-la-núm Mar-tu-šè kur Mar-tu-šè mà-a ba-a-gub gìr Ad-da-šag₅-ga àga-ús, "5 barley-fed sheep were loaded on a boat (to be shipped) to Naplanum, the Amorite, to the 'Land of Martu'; conveyed by Adda-shaga, the gendarme" (Buccellati 1966: pl. 1 no. 2:1-3 [Amar-Sin 7/i/4]). The date of the second tablet is certainly Amar-Sin 7 (rather than Shulgi 43) since: (a) the disbursing official is Shu-Mama, who was active at Drehem in the years Amar-Sin 7–8 (Sigrist 1992, 331); (b) the gendarm Adda-shaga is known to have conveyed animals to Naplanum in the second half of Amar-Sin's reign: 5 udu niga 2 máš gal niga ki Na-ap-la-núm Mar-tu-šè gìr Ad-da-šag₅-ga àga-ús (Keiser 1971: text 382:11–13 [Amar-Sin 9/xi/17]); 3 udu niga ki Na-ap-la-núm Mar-tu-šè gìr Ad-da-šag₅-ga àga-ús (Owen 1982: text 144:11'–13'—date not preserved, but the tablet mentions Lipan-ashkupi, the envoy of Lipan-ukshapash of Marhashi, who is otherwise documented in the years Amar-Sin 5–6 [Steinkeller 1982: 260 n. 95]).

68. The strongest argument here is the fact that the surviving mentions of deliveries of nam-ra-ak kur Mar-tu, "booty of the 'Land of Martu,'" date to the years Shulgi 40—Amar-Sin 4 (Lieberman 1969: 55–56; Sigrist 1995: texts 50, 53), which argues for a connection with Shulgi's and Amar-Sin's campaigns in the trans-Tigridian territories during that period. While the region of Jebel Hamrin may have been a particular focus of Amorite presence in Ur III times, chances are that kur Mar-tu does not describe any specific geographic point, but is rather a general designation of the entire piedmont zone, extending from the middle course of the Tigris to the region of Susiana, within which the Amorite groups moved back and forth, pasturing their flocks.

For a possible connection between the Ur III "Land of Martu" and the original homeland of the Emutbala tribe, note that both these places were associated with the "Bitter Waters": a šeš gaba kur Mar-tu-ta, "from the 'Bitter Waters' on the border of the 'Land of Martu'" (Michalowski 1976: 168 no. 4:5); [T]A LUGAL-GI.NA^{ki} EN *me-e mar-ru-tú* KUR *E-mut-ba-lum^{ki}*, "from Sargon to the 'Bitter Waters': the land Emutbala" (Grayson 1974–77: 60 line 25).

Although it has recently been alleged that there exists "Ur III evidence for the location of KUR MAR.TU in Syria" (Young 1992), I am unaware of any such data. In any case, such evidence certainly is not provided by the tablet Wabash 1 (cited above in n. 66), since the fact that, in that document, the same official conveyed (gir) the animals of Naplanum and those of Ishme-Dagan of Mari, Budur of Urshu, and Ili-Dagan of Ebla, does not mean that all those disbursements "had Syrian destinations" (as claimed by Young 1992). The only disbursement that had a foreign destination was that of Naplanum, while the others were made locally. Here note that the same Syrian trio—Ishme-Dagan,

Nies 1920: text 92:14 [Amar-Sin 8/xii/29]), which strengthens the assumption that Kisig was a neighbor of Ur (see below). It is possible that Naplanum lived in Kisig as early as Amar-Sin 3/ii, as is suggested by the Lagash tablets Hussey 1915: text 108 and Owen 1982: text 124 (see above, n. 60), where his son Shulgi-abi loads on a boat large shipment of flour and beer, which very likely was to be transported to Kisig. The sizes of these shipments indicate that Naplanum had a large retenue there. Here, cf. Grégoire 1996: text Ashm. 924–547 (Shu-Sin 1/vi/x), which records an expenditure of 5 sheep, "the food-provisions of Naplanum, among (the group of) 20 Amorites" (níg-kú-a Na-ap-la-núm šag₄ 20 Mar-tu).

vicinity of Ur, Naplanum would have followed roughly the same route that may be posited for the migration of the Emutbala tribes: from the general trans-Tigirdian region, to the area of Mashkan-shapir, to Larsa and Ur.

An unavoidable question arises: is there any evidence to connect Naplanum with the Emutbala? Although such a connection cannot be positively made, there are some suggestive data:

(a) In a Drehem tablet listing Naplanum and various members of his immediate family, his entourage also includes a certain Napshanum, the messenger (lú-kin-gi₄-a) of Ià-a-mu-tum.⁶⁹ Assuming that Ià-a-mu-tum is to be analyzed as Yamutum,⁷⁰ one very likely finds here a shortened form of Yamut-bala (= Emutbala), used either as a personal name⁷¹ or perhaps even as a tribal designation.

(b) A tablet from Drehem names a Shat-Shulgi, wife of A-bí-a-mu-ti.⁷² One recognizes in A-bí-a-mu-ti the tribal title *abu Yamūti*, "sheikh of the Yamutu."⁷³ In his discussion of this title, G. Buccellati (1966: 127, 335, 338 n. 95) concluded that in this particular instance it is used as a personal name, though he left open the possibility that it could be a title proper, perhaps referring to Naplanum himself. He based this hypothesis on the tablet published by Sauren (1978: text 349:9), in which he reconstructed [dŠa-at-dŠul-g]i dam Na-ap-la-núm. Unfortunately, this restoration cannot be maintained (see n. 58), but the possibility that the wife of Naplanum (whose name is still unknown) was in fact Shat-Shulgi cannot be discounted.⁷⁴ Obviously, were Naplanum an *abu Yamūti*, his connection with the Emutbala would be confirmed.⁷⁵

But, even if such a connection proved to be a phantom, it would still be reasonable that Naplanum became the eponymous founder of the Larsa dynasty. The memory of the greatest Amorite of Ur III times, who established himself in the vicinity of the capital and hobnobbed with the royal family, was undoubtedly still alive when, some decades later, the Emutbala tribes (led by Emişum?) migrated into the same region. Naplanum would have been fittingly embraced by them as a founding figure.⁷⁶

70. Following Edzard 1957: 41 n. 180, and contra Buccellati 1966: 16–17, 149, who analyzes the name as Yahmutum. Buccellati's position that the spelling NI-a- must express the syllabic sequence ià-a is not very convincing; cf. the variations Ià-a-nu-zu-um / E-nu-zum/zu-um (Buccellati 1966: 150; Van de Mieroop 1987: text 146:2) and Ià-aab-ra-at/Ià-a-ba-ra-at/Ià-ab-ra-at/E-ba-ra-at (Steinkeller 1989: 275; de Genouillac 1911a: text 5559: 9; Waetzoldt and Yildiz 1994: text 707:10), which indicate that NI-a represents Ià^a-, with -a- being a gloss.

71. An explicit attestation of Emutbala as a personal name is now provided by Ià-a-mu-ut-bi-ìl, who is listed along with seven other Amorites in a Drehem tablet from Amar-Sin 5/iii/25 (Grégoire 2000: text Ashm. 1971-395:10).

72. 8 donkeys for A-bí-a-mu-ti Mar-tu; 2 donkeys for Ša-at-^dŠul-gi dam A-bí-a-mu-ti Mar-tu; 1 donkey for Lú-é-a Mar-tu; 1 donkey for Ù-ga Mar-tu; 1 donkey for é-gi₄-a Mu-ra-nu-um Mar-tu (Legrain 1912: text 267:8–18 [Shulgi 46/viii/5]).

73. This title (or personal name) is identical with the *A-bi-Ia-mu-ta* listed in the so-called "Genealogy of the Hammurabi Dynasty" (Finkelstein 1966: 96 BM 80328:15).

74. N.B. this woman could conceivably be identical with the princess Shat-Shulgi (Buccellati 1966: 339).

75. Cf. Buccellati (1966: 320 n. 163): ". . . if *A-bi-a-mu-ti* is indeed a title meaning 'sheikh of Yamūtum' and if it refers to Nablānum . . . , one could see here a link between Nablānum and Larsa, since the title 'sheikh of Yamūt-bal' was linked, as is well known, with the history of Larsa in the Old Babylonian period."

76. Another high-ranking Ur III Amorite to become an eponymous ancestor of the later Amorite dynasts of Babylonia was conceivably Abi-Ditanu. See the occurrence of A-bí-Ti-ta-nu Mar-tu in an Ur III tablet dating to Amar-Sin 9/vi/26 (Sigrist 1984: text 940: 9–10—listed together with Naplanum and Ibi-ishkil, Naplanum's nephew), as compared with *A-bi-Di-ta-an* of the "Genealogy of the Hammurabi Dynasty" (Finkelstein 1966: 96 BM 80328: 16). See also the case of Abi-Yamuti (see above and n. 73).

Budur, and Ili-Dagan—was still present in Babylonia eight days later, as shown by Çiğ, Kizilyay, and Salonen (1956: text 594; Amar-Sin 1/iii/4), according to which 3 sheep were conveyed (by the same official as in Wabash 1) to their houses (é-a-ne-ne-šè) in Nippur!

^{69.} Na-ap-ša-nu-um lú-kin-gi₄-a Ià-a-mu-tum (de Genouillac 1911a: text 5508 i 12 [Amar-Sin 4/i/6]). He also appears in Çiğ, Kizilyay, and Salonen 1954: text 335:9 (Shu-Sin 1/xii/14—spelled Na-ap-sa-nu-um). For possible attestations of this person in Isin texts, see above, n. 54.

The question of Naplanum aside, however, the fact remains that throughout the entire Larsa period there existed close and enduring links between the Larsa dynasty and the Emutbala tribes. As we have argued earlier, this is demonstrated not only by the evidence dating to the reigns of Kudurmabuk and his two sons, but equally, by the fact that Mashkan-shapir belonged to the Larsa kingdom at least since the reign of Zabaya, as well as by the occurrence of the title *rabān Amurrim*, borne by Zabaya and Abi-sare. All these facts point to the conclusion that the Larsa kingdom had been founded by the Emutbala tribes.

If the Larsa kingdom was a creation of the Emutbalans, this fact could throw additional light on the circumstances of Kudur-mabuk's rise to power. We noted above that his only title was that of *abu Amurri/Emutbala*. What is striking about this title is the prominence it receives in the Larsa inscriptions of Kudur-mabuk and those of Warad-Sin and Rim-Sin: it is as if these three rulers *insisted* on their connection with the Emutbala tribes. This title must have had special significance at Larsa. Otherwise, we might expect Kudur-mabuk and his sons to do just the opposite: to conceal their foreign and tribal background.

If, however, the founders of the Larsa dynasty were Emutbalan by birth, the prominent use of that title by Kudur-mabuk and his sons would make perfect sense. It would be precisely Kudur-mabuk's mastery over the Emutbala that legitimized their claims to the throne of Larsa.⁷⁷

The City of Mashkan-shapir

This political history is relevant to the issue of whether Mashkan-shapir typifies a southern Mesopotamian city, and thus whether conclusions about its organization can legitimately be applied to Babylonia as a whole. Despite its relatively short history, Mashkan-shapir may be seen to conform to patterns seen at Nippur, Ur, and even Larsa itself in key aspects of religion, exchange, and political control. It boasted an important temple to one of the major gods of the Mesopotamian pantheon, Nergal. It actively engaged in both local and long distance exchange—indeed, its role in long-distance exchange may have been greater than many of its counterparts to the south and west. Like Ur in earlier times and contemporary Larsa, Mashkan-shapir was a political capital, albeit as part of the unusual relationship with Larsa outlined above.

^{77.} There is one more datum that may be of relevance for this issue. It is interesting to note that, in his sixth regnal year, Rim-Sin fashioned a gold statue of Sin-iddinam. This undertaking had been preceded by a number of similiar projects: in his second year, Rim-Sin installed a copper statue of Warad-Sin in É-gal-bar-ra; in year 3, he installed four copper statues of Kudur-mabuk in the temple of Nanna; and in year 5, he installed two copper statues of Kudurmabuk in É-gal-bar-ra (Sigrist 1990a: 37-40). Since the latest mentions of Kudur-mabuk come from the inscriptions belonging to the very beginning of Rim-Sin's reign (Frayne 1990: 271-78 1-5), it seems certain that his death occurred not later than the year Warad-Sin 5. Accordingly, É-gal-bar-ra, "Outer Palace," where his and Warad-Sin's statues were displayed, was probably a royal funerary chapel (cf. George 1993: 87 no. 311). It is difficult to understand why Rim-Sin would be interested in honoring Sin-iddinam, perhaps even venerating him in his family's funeral chapel (if, as it seems likely, the destination of Sin-iddinam's statue was E-gal-bar-ra, too), unless one speculates that he was related to Sin-iddinam by blood. It is tempting to hypothesize that Kudur-mabuk had married a daughter of Sin-iddinam, and, therefore, that both Warad-Sin and Rim-Sin were Sin-iddinam's grandsons. [Cf. the case of Apil-kin, a ruler of Mari and apparently Amar-Sin's grandfather, who was venerated by Amar-Sin in Ur III times (see Boese and Sallaberger 1996: 25-38).] This would not only account for Kudur-mabuk's presence in Larsa in the year Sin-iddinam 7, but it would also explain why he was in a position to intervene in the succession strife following the death of Sin-iqisham, and why he never claimed the throne of Larsa for himself.

There is one area where Mashkan-shapir is profoundly atypical, however, and that is in its role as the seat of power in a tribal rather than a territorially defined state. In chapter 2 we saw how this is reflected in the dearth of permanent settlements around the city. The degree to which this difference affected the city itself is more difficult to establish; the chapters below will demonstrate that there is little to distinguish its material inventory from that of any other Old Babylonian urban site.

Chapter 4 Survey Methods and Analytic Procedures

Because of its unusual isolation and the relatively short span of its existence as a living city, Mashkan-shapir presents opportunities for survey that go well beyond elucidating the chronology of settlement at various parts of the site. The surface artifacts are overwhelmingly of the Isin/Larsa and Old Babylonian periods and reveal little ceramic variation—in essence, they appear to be from single floruit that did not last much more than a century. This is not to deny that other periods are represented at the site. Parthian activities were clearly indicated by the presence of glazed ceramics and glass in circumscribed areas, as well as such typically Parthian artifacts as slipper coffins. In places, clay sickles attested an occupation prior to the second millennium, and there were also areas in which earlier Isin-Larsa period phases were evidenced by increased amounts of combed decoration. These chronological indicators were conspicuous enough that places where multiple phases of occupation need to be taken into consideration could be identified by those conducting the survey without recourse to detailed ceramic analysis.

Since chronology was not an overriding issue outside of these restricted areas, our survey methods were designed to maximize the amount of locational data we could generate on artifacts of a functional character such as tools, weapons, terracottas, and seals to reveal the types of activities that characterized various parts of the erstwhile urban environment. The distributions of these objects could only be accomplished through an intensive pedestrian survey. A second strategy was facilitated by an aspect of the site that had led to its selection for investigation in the first place—the virtual absence of relief and the exposure of architecture brought about through wind erosion. Remains of walls, sometimes clear enough to reveal whole building plans, were visible along with traces of canals and roadways. We sought to identify and map as many of these fixed, and often extensive, surface traces as possible. To a certain extent this was done through observation and triangulation in the course of walking the site. However, it was recognized from the outset that some sort of aerial coverage would enhance the effectiveness of the procedure.

Thus the Mashkan-shapir survey was made up of two parts: an aerial survey designed to reveal meaningful patterns in the larger features and surface scatters of the site, and a ground survey in which artifacts other than sherds were pinpointed and the characteristics of non-portable features, including sherd concentrations, were observed in detail. As the project matured, new computer applications—Geographical Information Systems—became available to help integrate the data obtained by these two procedures.

Contour Mapping and Grid Layout

Mashkan-shapir's isolated location, far from bench-marks of known position and elevation, forced us to establish our own base points for mapping. Georeferencing of the SPOT satellite image,

as noted in chapter 2, suggests that our central measuring point was situated at or near 32° 24' 22" N and 45° 13' 21" E, where, according to maps of the British Survey of 1942, the plain is approximately 63 meters above sea level.¹ Beyond this level of precision, we are presently unable to tie our points into any larger systems of horizontal or vertical recording.

Even within the site, the precision of our mapping was somewhat hampered by the circumstances under which we were working—and not a little bad luck. In 1987 we established a base point, more or less in the center of the site, at the top of a prominent mound capped with baked bricks which seemed to be fairly permanent. We drove an iron stake deep into the mound at this point, where we hoped it would it would remain without attracting the attention of any passers by. It was gone at the beginning of the next season. The brick feature associated with the point was easy to relocate, but in each subsequent season it was not possible to reestablish our initial base point with an accuracy of greater than plus or minus 10 cm.

This benchmark was made the center point of what was later designated Square 7F and given an arbitrary height of 10 meters. From here, a 100×100 meter grid was extended over the site, and each unit was subdivided into 50×50 meter squares, which were the units within which the survey was conducted.

In the very brief time we had at the site in 1987, we limited ourselves to tracing the edges of the occupied area and marked out only those squares in which we would work that season. Because high winds made measurements using tapes difficult and inaccurate, stadia intervals on the transit were used to measure distances.² The squares were oriented to magnetic north using a compass mounted on the transit. As our work continued that season, we became aware that this was not the best procedure, and that there were minor irregularities in the layout of some of the sixty 50-meter squares we covered.

In the calmer weather at the beginning of the 1988–89 season, it was possible to use tape measures effectively, and we extended a much more accurate grid over the entire site, marking the corners with flags whose alignment could be easily checked over long distances. Our problems this season were not with the shapes and sizes of the squares, but with their alignment. The transit upon which we had been relying was broken in an accident immediately before the fieldwork began, and the only backup available on short notice was a distinctly inferior instrument with no built-in compass. The result of our efforts with a hand-held compass was later recognized as a grid angled 2° east of magnetic north. The corner points of this were still visible at the outset of the 1990 season, and rather than impose a third grid, we elected to continue the 2° east of north alignment to facilitate coordination with previous work.

Surface Survey Methods

The unit chosen for the surface survey was a 50-meter square—the largest area that could be walked with some completeness in a half day of fieldwork. This was also the most convenient size for a minimum unit of coverage in aerial photography, given the methods that we were using (see below).

^{1.} Although the numbers provided here suggest a high degree of accuracy, it is dependent on the accuracy of the georeferencing of the SPOT imagery, as indicated in chapter 2. The lack of good, accessible, modern maps made the association of landmarks (e.g., road intersections) visible on the imagery with fixed geographical points impossible. Under these circumstances, coordinates that are estimates could be a kilometer or so off.

^{2.} Now that EDM total stations are becoming standard equipment on archaeological projects, these survey procedures may seem astonishingly primitive. The use of more sophisticated electronic equipment was not an option for us at the time.

The procedures followed were quite simple. The square was walked slowly, usually by one individual, who used colored surveyors' flags to mark the locations of all small finds, architectural fragments, prominent scatters of sherds, bricks or other debris, boundaries of canal beds, burials, or anything else that caught his or her attention. Once the initial walk was completed—which usually took several hours—the objects were tagged and their findspots triangulated from the corners of the square. A basic survey recording sheet was filled out that included a sketch of the general surface scatters, with an indication of their makeup (sherds, bricks, bitumen, etc.). Architectural features were treated in more detail. At least two points were triangulated for each wall identified, and both the pattern of the bricks and the brick sizes were recorded. In addition, a compass reading was included for the orientation of all architectural fragments identified during the second and third seasons (we did not have the compasses in 1987). Each architectural feature and anything else of interest in the square was photographed *in situ* from ground level, with a scale and north arrow for orientation and measurement.

After their positions were noted, all portable artifacts (other than sherds) were given field numbers and taken back to the expedition house for further study. All were photographed, minimally in black and white and usually in color slides as well. Each object was drawn, measured, and described. In 1987 and 1988, due to the limited time available and the large number of small finds, all participants in the project were involved in object registration. Only the more notable pieces for instance, model chariot shields—were drawn by trained artists. In 1990, registration was undertaken by the artists alone. All of the artifacts collected from the site were ultimately taken to the National Museum in Baghdad.

After each field season, the raw survey data were drawn up, the triangulation measurements were used to pinpoint the findspots of the objects and architectural fragments, and the drawings and photographs were used to determine the exact alignment of the walls that had been identified. The resulting survey sheets formed the basis of subsequent work to integrate the results of the surface survey with the aerial photographs.

It was relatively easy to tie the 1987 grid into the grid of 1988–1990 by using features visible in the aerial photographs, all of which used the later, more complete grid. Slight discrepancies between the exact spot where an object was found and the point recorded may exist, but to a certain extent this is inevitable with tape triangulation, given the conditions under which we worked. The relative positions of artifacts and features found close to each other are quite precisely noted. With regard to absolute position, we estimate that we can in no case be more than 30 centimeters off in our location of objects in the worst of circumstances, and normally within ten centimeters, which we regard as an acceptable level of accuracy for the purpose of establishing which artifacts characterize each part of the site.

More serious problems are potentially created by inherent observational inconsistencies among the people who conducted the survey. Recording of some of the sherd scatters, for example, involved subjective judgments. Surface sherds do not form a continuous blanket but have variable densities that are good indicators of underlying features, such as ancient streets. Deciding what constitutes a concentration and what is simply normal scatter is not always easy. How individuals can have different perceptions is apparent when one looks at recordings along the common boundary of two squares. These are particularly pronounced between areas worked in different seasons, with a tendency toward more detailed recording in each successive season. An antidote to the problem of sherd-scatter classification is provided by the aerial photographs, which offer an excellent picture of extent, if not the content, of surface scatters. Concentrations of broken bricks, slag, etc. were less common and judgment of them less subjective, so they were recorded on a more consistent basis. Some areas, inevitably, were not as well surveyed as others. The spring of 1988 was unusually damp, and this led to an increase in the amount of vegetation on the site. This had two deleterious effects on the survey: it caused pockets of sand to build up and it attracted bedouins with camels whose dung was not entirely negligible as a surface cover in the 1988–89 season. Most of these areas, however, were rephotographed in 1990 after the wind had blown this surface layer away.

One final problem which cannot be resolved without a return to the site has to do with our recording of concentrations of ceramic slag, which were numerous. In the field, we had assumed that these were of more or less uniform character and would correlate with the presence of kilns. In the final season, however, we began to realize that many of the grinding stones at Mashkan-shapir were in fact made of a synthetic material produced by overfiring clay. Large slabs of this "slag" (up to 80 \times 40 cm \times 10 cm) appear to have been used paving stones. Analytical work on samples which we exported to the United States has confirmed that this "stone" was indeed a kind of artificial basalt (Stone et al. 1998) and demonstrated that there must have been a large industry engaged in its production. Thus, the concentrations of "ceramic slag" we recorded in the field could reflect the remains of the large furnaces for the production of artificial basalt and their waste products, the reworking of this material into grinding or paving stones, or the remains of ceramic kilns. Our photographs indicate that ceramic slag concentrations come in various guises—parts of large, misshapen slabs sticking up out of the ground, discrete clusters of ceramic slag, and broad, thin, scatters of small slag fragments. Such differences were not always recorded since we became aware of the existence of this unusual industry only through excavations, in 1990, when we found synthetic slag grinding stones in situ. Aerial photographs can assist in identifying the kinds of features which were almost certainly remains of kilns, but are less good at defining the other types of ceramic slag features.

On the whole, these are relatively minor problems and the survey methods worked well, allowing us to locate and collect some 1200 surface objects, identify hundreds architectural features, and mark out canal boundaries, platforms, burials, kilns, and so forth. These are the data upon which we have attempted to develop an overall view of the organization of this ancient Mesopotamian city.

Aerial Photography

The techniques we used for obtaining detailed aerial photographs of the site were dictated by contingencies. The project was initiated during the Iran-Iraq war, and security remained a serious concern, even after the cease-fire, so the most efficient methods, such as commissioning a private airplane, were out of the question. The series of high-quality photographs of Iraq taken by KLM in the 1960s was unavailable for the same reason and in any event did not have sufficient resolution for our purposes. Helium was embargoed, hydrogen too dangerous, and winds too much of a problem for balloon photography. Radio control devices were also problematic, so we could not have flown a model airplane even if the winds had allowed us to do so. Under such circumstances, a kite was the only viable option.

Following consultation with Will and Ellie Meyers, we chose the Jalbert Model J-25 airfoil and suspended a Canon T-70 camera with a 28 mm lens, protected by an aluminum housing, from a gimble attached to the tether about 30 m from the kite itself (fig. 12). This setup was designed to minimize swinging and offer the camera some protection, which it needed on more than one occasion. The camera was driven by a programmable device which allowed us to set the number of photographs we wanted to take, the delay before taking the first one, and the interval between shots.

In order to tie in our aerial photographs with the ground survey, we endeavored to mark each corner of the 50×50 meter grid so as to make the point visible from the air. We experimented with

various means of doing this-the essential problem being to have a marker heavy enough not to blow away and commonplace enough not to be worth stealing. In the end, what worked best were crosses, approximately one meter by one meter, made of sherds painted with a biodegradeable white tree paint. We also arranged painted sherds in the form of letters and numbers to identify the center point of many of our squares-these labels greatly sped up the arduous procedure of identifying which squares were covered in a given picture.

The normal procedure was to shoot an entire 36 exposure roll of film as the kite was pulled along one of the grid lines, in the hope of producing parallel and perpendicular transects of the site. An initial delay before photography began was programmed in to allow the kite to gain altitude, after which the camera would take a picture every twenty or thirty seconds. Although the person pulling the kite walked in a straight line, the kite itself had a tendency to wander. Slight changes in wind speed



Fig. 12. The kite.

changed its elevation considerably, and moved it back and forth with respect to the grid line being walked. Despite the gimble, the camera had a tendency to swing slightly, which also affected the area covered (fig. 13).

One person tried to walk directly beneath the kite to record, roughly, where it was when each photo was taken—no easy task given the dearth of clear landmarks on the site. The size and orientation of his shadow in each negative, much easier to see than our crosses, gave us a means of quickly evaluating the elevation from which the picture had been taken when we developed the pictures each evening. This is why most images in Chapter 8 include at least one human figure. Figuring out precisely what was in each negative was an arduous task, and we soon realized we could not keep up with the cataloging of images while we were taking them. We contented ourselves with recording the rough path followed by the kite in each run and sought to insure total coverage by taking as many pictures as possible. At the time, we assumed that there would be another field



Fig. 13. Map of the site showing the locations of a run of kite photographs.

season to fill in any gaps we discovered. In the end, there proved to be a few holes in our coverage, particularly in the far south and far north.

Nevertheless, a high-resolution photographic record of some 95% of the site was obtained by means of some 1600 images, the vast majority taken during the 1990 season. The quality of the latter was not all we had hoped for, because we failed to note damage to a lens that occurred after a crash when the tether broke in a high wind. Both the camera and lens appeared to survive a drop from 200 m, and we could see no problems in the negatives, but when the pictures were printed after we returned from Iraq, it could be seen that their corners were darkened. These dark corners, in which resolution is low, are, regrettably, quite conspicuous in many of the images included in chapter 8.

The process of cataloging all of the photographs took several months. For each photograph, a record was made of the location of the center of the scene, which grid points were included in the photograph, and which complete squares (with 4 corner points) and half squares (with 3 corner points) were included. This was then entered into a database that permitted the production of a catalog listing, on a square-by-square basis (and on a half-square by half-square basis), which photo-

graphs were included the area and at what altitude. This catalog was then used to identify the appropriate photographs for use in the next stage of research, computer rectification.

Image Processing

Initially, we began correcting the geometry of the photos through simple photographic techniques, producing prints of individual 50×50 m squares by tilting the easel in which the photographic paper was mounted to compensate for the tilt of the camera. This worked reasonably well to correct for the tilt of the camera but could not compensate for the curvature of the 28 mm lens, making it a less versatile and accurate means of extracting the information in the photographs than digital image processing.

When it became clear that we were not going to be able to return to Iraq for another season, we elected to take advantage of newly-available image processing and GIS (geographic information systems) software to make the best use of the material that we had. This enabled us not only to make the necessary geometric corrections much more accurately, but it also permitted direct mapping of features and artifacts on the aerial photographs.

Before this work could begin, two questions had to be resolved: the scale at which we would work and the criteria for selecting photographs. These are not unrelated issues. Each photograph has a built-in scale or resolution in the form of the area on the ground reproduced by the grain of the photograph. The size of the grain itself was consistent in the negatives, since they were all taken with the same film (Kodak T-Max 100), but the resolution or ground area per grain obviously varied with the height of the camera. Our 2800 dpi Ikonix scanner had its own resolution, which was somewhat higher than the grain of the film. For mapping purposes, all images had to have the same pixel size—that is the area on the ground that would be represented by a single piece of digitized data. Moreover, there are costs in terms of file size in high resolution images, so it was necessary to choose a scale that best represented the resolution of the average scanned photograph without creating impossibly large image files. At the time we were conducting this research, CDROMs, Jaz, and Zip drives did not yet exist and 200 megabyte hard disks were thought of as huge. Fortunately, tape back-ups did exist, and it was these that allowed us to store our data after processing.

The process of rectification—or geometric correction—relied on the identification of the painted crosses on the ground. First-order corrections, to compensate for the angle of the camera, required no more than three such points, but a second-order correction, to eliminate problems caused by the curvature of the lens, required six or seven known points. Thus, the ideal image for processing contained six or seven points. More meant a loss of resolution, and less gave an inferior geometric correction. In some cases, images with five crosses could be used where it was possible to identify a point on the ground (intersecting car tracks were especially useful) on another image that had already been corrected, using this datum as the extra point.

Photographs with six or seven points were generally taken from an elevation of some 150 m, which translates into a 35 mm photograph that includes some 150 m of ground in its width. After scanning, the 35 mm negative became an image somewhat more than 3,000 pixels wide, so a scale of 2,000 pixels per 100 meters on the ground was chosen—that is, 1 pixel per 5 cm \times 5 cm of ground. This gave a manageable file size of four megabytes per hectare and was detailed enough to resolve single bricks and even large sherds. Where we had to use very high resolution images, containing only three crosses, this processing led to a loss of resolution. In cases of very low resolution photographs with eleven or more crosses, blocks of neighboring pixels would necessarily carry the same value.

Once these decisions had been made, the process of entering the data into the computer was relatively straightforward. The negatives were scanned and entered into VGA Erdas,³ a program designed for the analysis of satellite imagery. The resulting images were reversed from negative to positive, and in the process enhanced by stretching the 40 grey tones resolved by the negative to fill the spectrum of 256 possible grey tones in the computer image. Next, the crosses and other fixed points were used to correct the geometry of the image. The quarter hectare $(50 \times 50 \text{ m})$ square was our basic working unit. When possible, we generated one of these per original photograph or combined two images to cover a quarter hectare. Where our coverage was less complete it was necessary to mosaic several pieces together to produce a picture of a given quarter hectare, and in rare instances multiple images were so conjoined even when a single image was available, but this was only done if when the single image was of exceptionally poor quality. Ultimately, the four quarter hectare are images were joined to form a one-hectare image for each of the squares on our grid. These images were the ones used for mapping and are reproduced in chapter 8.

In addition to the black-and-white photographs for overall coverage, several rolls of color aerials were taken of specific areas. One series in particular, taken after an unusual night of rain in the 1990 season, revealed a great deal of architectural detail. A feature of mud-brick architecture is that the walls are somewhat denser than the room fills, which permits them to hold water for longer than their surrounding areas. The fact that color film, instead of black and white, was used is not particularly important, although when imported as black and white, color images have a larger number of gray tones than black and white negatives. Since they included a wealth of detail not available on other aerials they were treated separately—especially since the subsurface architecture actually made it more difficult to identify the surface-scatter features indicated in the other aerial photographs. The features visible in these images are shown in fig. 281.

The computer did not enable us to solve the problem of darkened corners created by the damaged lens. In the darkroom it is possible to burn in such areas, but this is not an option with digitized images because it is impossible to select particular parts of an image for specific corrective treatment. We did attempt to even things out with a subtractive process by taking a picture of a flat white surface with the same lens, then superimposing the negative on the original negative so that the darkened corners were matched by lighter areas and the lighter center by darker areas. This worked beautifully for optical reproduction, but because the scanner's resolution is below that of the film's grain and because the negatives have to be placed in the scanner by hand, the detail that was present in the original imagery was replace by a flat, grainy image useless for our purposes. The upshot is that the darkened-corner problem remains to exaggerate boundaries between quarter hectares in our final reproductions. In many cases, neighboring images have different trajectories from light to dark, so while values along one segment of the boundary can be matched, they diverge with distance. Nevertheless, no significant information is lost and the problem is essentially cosmetic.

A second problem was that dust in the array of the scanner sometimes caused some vertical lines to appear in areas of less dense information. These can be identified on the images because they are generally fairly straight, run at an angle to the image (since the photographs were most often oriented to the northwest), never continue from one piece of the mosaic to the next, and sometimes taper off. They should not be confused with either camel tracks or gullies, which are also often seen as white lines but do not share the above characteristics. Despite the obvious shortcomings of our

^{3.} VGA Erdas was the PC version of a UNIX Program developed by Erdas for the analysis of satellite and other digital imagery. The program included routines for georeferencing imagery, image enhancement, including filtering, the cutting, pasting, and mosaicing of imagery, and other routines not used in this project, such as classification.

work and our certainty that we could do a better job given another opportunity, this is nevertheless the most detailed and complete photographic record of the surface of a large Mesopotamian site produced to date.

Digitizing Survey Data

For data recorded on the survey sheets to be compatible with the aerial images, it had to be digitized using the same coordinate system. The GIS program PC ARC/INFO was chosen for this because it was designed to work together with Erdas, had excellent mapping capabilities, and permitted smooth coordination of spatial information and relational databases. In the event, this proved a happy choice because since then ARC/INFO and its offspring ArcView have become the industry standard.

Three basic maps were produced: one of the areas of surface scatter, one of the findspots of individual objects, and one of architectural features. A database was developed to define the composition of the surface scatters, including all features noted by the surveyors, such as density of ceramics or presence of bricks, sand, ceramic slag, camel dung, etc. For the small finds, it was necessary to devise a second database to group or separate objects by various criteria in the course of analysis. Material and general category of each object was recorded, for example, copper/bronze as material, arrowhead as object category. A third, more specific category, called "decoration" for want of a better term, was added for objects such as terracottas. Thus, a nude female figurine would be classed as: (1) baked clay, (a) figurine, (i) nude female (see Appendix 4). Architectural fragments were classed either as baked brick, including subcategories based on brick sizes, or mud brick, which was generally visible only from the air. Once entered into the computer, data derived from the aerial photographs and the surface survey could be incorporated into a single map.

Coordination of Survey and Aerial Data

Creating an accurate map of the surface of Mashkan-shapir involved coordinating the geometrically corrected aerial photographs with the information from the notes taken in the course of the surface survey. For the small finds and specific points on architectural features that had been measured by triangulation, this was a strictly mechanical procedure, but the orientation of larger configurations, such as sherd and slag scatters, required further manipulation of the images and more subjective judgments on our part.

To define boundaries between various features on a square's surface better, the computer was used to stretch the contrast and apply various filters for improving edge enhancement. These techniques were brought to bear in a variety ways to specific areas and problems to bring out distinctions that would enable us to map accurately what had been merely sketched in surface survey. In most instances, different kinds of filters—designed to bring out edges—and grey-scale stretches were used to maximize the detail available in the imagery.

A new map of the surface scatter was drawn up on a hectare by hectare basis, using the sketched survey data as a guide and including features clearly visible on the image. By and large, it was assumed that the surveyor who walked the square was correct in his or her identification and placement of such materials as bricks, ceramic or cuprous slag, and burials. Thus, all such features noted in the survey were recorded on the final map, whether or not they were clearly visible in the aerial photograph. But it was also assumed that the more subjective issue of determining the density of sherd scatter was less likely to be consistent from square to square. Thus if concentrations of material that were not recorded on a survey sheet could be identified on the image, they were assumed to have been made up of sherds, not of the other, less common materials. A surveyor's judgment that one part of the square had a higher concentration of sherds than another was accepted, even if such a change were not readily identifiable on the image. Some major features, such as small canals, were much more clearly visible on the aerial photographs than they were on the ground, so these were added to the surface scatter map.

A new map of architectural features was also developed. This included edited versions of the many baked brick wall fragments found on the surface. Here only minor adjustments were needed, since triangulation points and internal measurements were recorded on the survey sheets. In some of the black and white images, clear traces of mud-brick structures could be seen from the air, often distinguished by their lack of surface ceramics in contrast to the room fills. These features were added to the architectural map, as were similar traces created by differential drying in the color aerials taken after a rain. Traces of the city wall and some other substantial intramural walls were more apparent in the aerial photographs than they were to surveyors on the ground, and these were also recorded on the architectural map.

Once the hectare-by-hectare mapping had been conducted, a final stage in the mapping process was to insure that there was consistency in the site map as a whole. The scatters were color-coded so that any inconsistencies in adjoining squares could be spotted immediately. These inconsistencies were eradicated by working with images and overlays of nine hectares at a time, comparing the central square with the squares around it. By using the images, it was possible to ensure a degree of consistency from one part of the site to another, especially in the coding of sherd scatter. The results of this final editing process are the maps included in chapter 8.

Chapter 5

Types and Characteristics of Surface Features

The area of human occupation at Mashkan-shapir was defined by broadly scattered artifacts and features in a desolate, wind-eroded landscape. In this chapter, the problems involved in identifying and interpreting these will be discussed in general terms in order to provide background for the specific identifications presented in chapters 8 and 9. Unlike the small finds treated in chapter 6, identification of many of these features involved subjective judgments, and their interpretation is complicated by issues of dating.

Sherd Scatter

To say that sherds are common at Mashkan-shapir is an understatement (fig. 14). These are the residue of levels that have eroded away, and differences in density in one area compared to another may have a variety of explanations. Although we did not collect individual sherds during the survey, the presence and absence of period-specific ceramic indicators and other dateable artifacts were noted where they were conspicuous. Overwhelmingly, the pottery can be assigned to the mideighteenth century B.C.¹ and is dominated by goblet and bowl forms. On some of these, typical early Old Babylonian painted decoration could be observed.

A few parts of the site also showed traces of occupation in other periods. Blue-glazed and stamped sherds, together with fragments of glass, served to mark out approximately four hectares of Partho-Sasanian settlement. These areas were discrete and characterized by relatively high mounds with slopes steeper than elsewhere on the site. Sherds bearing combed decoration, taken as indicators of the Isin-Larsa period prior to 1800 B.C., were most conspicuous in the southern portion of the central part of the site. The Uruk period was attested by isolated clay sickles and occasional sherds. With these small-scale and conspicuous exceptions, the sherd cover of Mashkan-shapir belongs to the early Old Babylonian period and may be understood as the product of a single city over a period of a few decades.

The question of how surface scatters of sherds relate to subsurface materials was addressed to a certain extent by work in the most extensive of our excavation areas, which covered 1,000 m² in squares 3H and 4H (Stone and Zimansky 1994). The surface here was characterized by an uneven sherd covering, with areas of dense concentration as well as areas in which sherds were relatively sparse. Our excavations were carried down to the base of the uppermost building level, which can be dated through ceramics and sealings to shortly after Hammurabi's conquest of Larsa or possibly

^{1.} The "middle chronology" outlined by Brinkman (1964) is used as a convention throughout this volume.


Fig. 14. Surface survey, showing sherd scatter.

the early years of Samsuiluna (Edith Porada, personal communication). This dictates a terminus post quem for the deposition of the surface sherds in this sector.²

Other evidence—both textual and archaeological—suggests that the site as a whole was abandoned around the twentieth year of Samsuiluna's reign, at approximately the same time that Nippur suffered a similar fate. None of the seals recovered in the surface survey can be assigned a later date, and there is no cuneiform evidence from here or anywhere else to indicate Mashkan-shapir existed afterward. The surface ceramics are consistent with a terminal date quite early in the Old Babylonian period. Since there are no Parthian or other post Old Babylonian remains in the excavation area, the surface scatter can represent no more than two decades of occupation subsequent to the levels that remained to be excavated. The ante quem and post quem termini for when these surface sherds were incorporated into the tell matrix are thus quite close together.

Surface sherds seem to have retarded wind erosion to a certain extent. Above one large, ashy, debris-filled courtyard in the excavation area there was a particularly a dense cap of broken pottery. Here the surface of the site rose slightly above the elevation of the parts of the same square where

^{2.} We recognize that the date of deposition of a sherd is not the same as its date of manufacture or the date it was in use as part of a whole vessel. In a living tell, sherds as sherds are to a certain extent moved about, and thus the presence of a modicum of sherds of much earlier manufacture in this level is not unexpected.



Fig. 15. Aerial photograph of the city gate and wall to the east of the site.

sherd scatter was light, despite the fact that the material below it was very soft and, one assumes, more easily transported than the normal tell fill. Generally speaking, in areas of high sherd density the surface tends to be slightly higher than those of light sherd density, presumably because the sherd cap retards erosion.

In some parts of the site, particularly where buildings were few and isolated, room fills are marked by dense piles of pottery and walls left as bands devoid of surface sherds, thus making architectural plans visible from the air. Excavations in the 3H/4H area, where there are examples of this phenomenon, made clear that the surface traces, at least in this instance, were no more than ghosts of building levels long since eroded away.

Our 1990 excavations also demonstrated that ancient streets sometimes survive as raised linear features heavily blanketed with broken ceramics. This is the result of the Mesopotamian practice of using streets, like other open spaces, for trash disposal. In many Near Eastern cities, it is abundantly clear that streets rise faster than the buildings beside them, because the buildings are regularly cleaned and the streets are filled with debris. For example, in old parts of Baghdad, one has to descend a flight of stairs from the modern street level to reach the doors of the most antiquated buildings. In some ancient streets, sherds may also have been deliberately deposited to create a rough paving, although we observed this practice only in interior spaces in our excavations. Whether deliberate or not, patterns of dense debris reveal the location of several streets in aerial photographs.

Canal beds are also defined linear patterns of ceramic debris. Their levees are marked by raised parallel bands of very small sherds, between which, in the bed itself, the soil is relatively clear of artifactual material. Broader areas, also surrounded by levees, in which sherds are absent, the soil is fine grained and sandy, and desert vegetation is more abundant than elsewhere, appear to be the remains of harbors. Cores taken by Lisa Wells both in these and the canals show the presence of alluvial deposits (see chapter 2).

Differences in sherd density were also helpful in tracing the city wall, which in most places is visible only from the air. On the east site of the site, where there is no doubt about interpretation because of the obvious presence of a major city gate, it shows up clearly as a thin scatter of very small sherds in an otherwise sherd-free area (fig. 15). Presumably these sherds were once included in the mud bricks that made up the wall and were left on the surface as the wall eroded. It is not at all clear whether any part of the wall remains to be excavated, but at least this evidence gives some sense of its location. Elsewhere, the identification of the wall through sherds is more problematic. For example, a linear feature seen in the aerial photographs on the western edge of the site may represent differences in sherds density, but this was not noted in survey records and cannot now be confirmed without a return to the site.

In short, sherds form by far the most common material covering the surface of Mashkan-shapir, but there is no single way to interpret sherd scatter. For example, sherds mark out the location of the city wall, but elsewhere it is their absence that enables us to trace mud-brick walls. While linear features of high sherd density may indicate the presence of streets, they may also identify the location of the levees of ancient canals and harbors.

Architectural Elements

Baked Bricks

After sherds, the next most common material found on the surface of Mashkan-shapir was baked brick. Most often, this appears in disorganized piles and in fragments, but architectural features where whole bricks remain *in situ* are far from rare. Some of these, in limited areas, appear to have been the coverings of graves, but others were wall foundations and pavements.

An attempt was made to record the sizes of all bricks found in the course of the survey, but the information was often defective, either because only the top of the brick was exposed or because of erosion and breakage. By and large, there appeared to be four recurring size categories. Most abundant was the typical rectangular brick of the Old Babylonian period, which measures approximately $26 \times 17 \times 7$ cm. The second most common type was a square brick, ca. $35 \times 35 \times 8$ cm. Less common, but still falling into identifiable categories, were bricks in varying thicknesses of which length and width clustered around 33×18 cm. and 30×20 cm., respectively. Some smaller brick sizes were recorded, but it seems likely that these were simply eroded fragments. A few large square bricks, greater than 36 cm. across, were also found, but these may date to a later period (see Table 2, p. 78 below).

All of these sizes have been reported at other Old Babylonian sites, the most common being the 35×35 cm. brick, found at Tell ed-Der (Gasche 1989: 18), Ishchali (Hill and Jacobsen 1990: 26), Ur (Woolley and Mallowan 1976: 20) and Isin (Hrouda 1977: 33). In most instances, bricks of this type were in pavings of courtyards, and although not many baked brick pavements are to be seen on the surface of Mashkan-shapir, they appear in the few that are. At Ishchali, these square bricks were also used for the footings of the massive Ishtar-Kittium temple walls, and at Mashkan-shapir



Fig. 16. Amar-Sin stamped brick in Square 6H.



Fig. 17. Baked brick feature in Square 6H.

they appear in structures as well: a city gate, a platform (probably for a temple), and a pair of quays or bridge supports.

The smaller bricks, ca. 26 × 17×7 cm., were used for footings of walls of houses at Ur and Nippur, the only sites where baked brick is reported in domestic structures. They were particularly abundant at Ur, where several courses supported superstructures of mud brick (Woolley and Mallowan 1976, 19). At Nippur, these bricks have been observed in wall footings, thresholds and pavings (McCown and Haines 1967: 66-67). The less common brick sizes at Mashkanshapir also appear less frequently in archaeological reports on Old Babylonian sites. 35×18 cm.³ bricks are reported at Tell ed-Der (Gasche 1989: 18), and 30 x 20 cm. bricks at Ur (Woolley and Mallowan 1976: 20), but neither are at all numerous.

Since all standard sizes at Mashkan-shapir are also attested at other Old Babylonian sites, and since typical Partho-Sasanian forms are too close to the 35 cm. square bricks to be distinguished from them on the basis of measurements of eroded surfaces, brick sizes alone cannot be used to assign construction periods to

structural remains. Architecture within the four-hectare area which pottery suggests was the locus of Partho-Sasanian occupation has more or less the same brick sizes as architecture elsewhere on the site. This is not surprising, given how frequently baked bricks were reused in Mesopotamia. A few bricks stamped with inscriptions of Amar-Sin have been found at various locations at Mashkan-shapir (fig. 16), including on top of the largest Parthian mound, and Old Babylonian bricks are to be seen on the very small, late tell located a few hundred meters from Mashkan-shapir. It seems likely that the later occupants of this area found Mashkan-shapir's ruins useful as a brick mine.

^{3.} Our bricks are either 32 or 34×18 , but the smaller size may well be the result of erosion of these surface finds.



Fig. 18. Baked brick features in Square 3H.

Indeed, the Sin-iddinam barrel cylinders recovered near the southeastern gate of Mashkan-shapir may originally have be exposed by scavengers taking the bricks of the city gate with which they were associated.

In some cases large portions of building plans could be made out from the alignments of baked bricks (see figs. 17–23), but more often only fragments of walls were apparent. In our excavations, we found that baked brick was used sporadically and inconsistently in conjunction with sun-dried mud brick, even within a single structure. In many instances wall footings built of rectangular baked bricks show a pattern of header-stretcher construction (see fig. 329 and Stone 1990: 156, fig. 10) to create hard faces, while the interior of the wall consists of a mud packing. In some of our soundings at Mashkan-shapir, the baked brick portion of walls could be followed to a depth of nearly one meter, but elsewhere baked brick footings never consisted of more than a single line of headers. Similar lines of brick were observed on the surface. When 35 cm. square bricks were used in more massive constructions, the rare 35×18 bricks were apparently used as half bricks to create an alternating alignment of vertical joints between courses. In a number of instances, bricks of more than one size were used in a single wall. This probably reflects reuse of bricks—a practice which is known from the Old Babylonian period as well as the Partho-Sasanian occupation.

Just as there is no hard and fast rule as to the number of courses of baked brick used in wall footings, there is no consistency in the relationship of the level of living floors to the base of the baked brick foundations. In Sounding 1, the best preserved architecture that we have so far excavated, the lowest floor level was twenty centimeters above the base of the baked brick, and then there were another twenty-five centimeters of living debris between it and the last living floor. What appears to have been the original top of the baked brick portion of the wall, in view of its even surface and



Fig. 19. Baked brick feature in Square 3G.

the fact that no displaced bricks were found in the room fill, was eighty-five centimeters above the bottom, and forty above the uppermost living floor. In none of our other soundings did we have this depth to work with.

The clues supplied by baked brick traces are often helpful even when they do not amount to whole walls. In Sounding 2, the baked brick was only preserved for one or two courses, but it overlay mud-brick architecture which followed almost exactly the same orientation—an indication that surface architectural traces, even if ephemeral, can sometimes still be a guide to the arrangement of subsurface levels. In our more extensive excavations of 1990, baked bricks were observable on the surface in only one of the ten ten-meter squares excavated. Nevertheless, further excavation in the its vicinity demonstrated that these traces were but a portion of a much larger building with sub-stantial baked brick walls and the thin remaining mud-brick superstructure had obscured these from view. Thus, fragmentary surface indications of baked brick walls may, in at least some instances, be indications of more extensive subsurface construction.

Baked bricks, of course, were used for more than just walls. From excavations we know that extensive areas were sometimes paved with them, but clear evidence for this is rare on the surface. When four or five large square bricks were encountered in the survey, it was not possible to say whether these represented the remains of paving or of other construction. The most obvious large structures are the city gates, which were marked either by paired piles of dense baked brick fragments

or, in the case of the main east gate, by more clearly defined bastions with some laid brick clearly visible. Differences between these gates are more likely to reflect the degree to which they were robbed in antiquity than alternative types of construction, although the textual sources do suggest that gates were built by two different kings, Siniddinam and Rim-Sin. It may not be entirely by chance that the best preserved gate is the one located farthest from later foci of occupation.

The most intriguing baked brick features at Mashkan-shapir are found on both sides of the western canal at the junction of an ancient roadway (figs. 24–26). On the west bank a substantial platform juts into the canal and on the east there is a less massive matching construction. It is our assumption that these have something to do with facilitating transportation across the canal, either as emplacements for a bridge or quays for a ferry.

There is also a large platform in the southern portion of the site, presumably designed to support a temple of some sort. No traces of superstructure remain,

Fig. 20. Baked brick feature in Square 6C.



Fig. 21. Baked brick feature in Square 7D.

however, unless small eminences at the top of the surviving platform are what remain of three of its corners. A cluster of Partho-Sasanian burials (see below) were intrusive into this platform, but it seems highly unlikely that it was anything more than a ruin heap when they were dug. This platform abuts a larger mud-brick platform which, because of its association with terracotta statuary, would seem to have been the site of an important shrine at Mashkan-shapir. Together, the mudbrick and baked-brick platforms must once have formed a single unit, supporting a building or buildings now entirely eroded away.

Another place where baked brick appears is in tomb architecture (fig. 27). Fully preserved rectangular outlines of burial chambers, such as those characterized by vaulted roofs at contemporary sites like Ur (Woolley and Mallowan 1976: pl. 47) were found in only a few instances and appear to have been robbed long ago. In other areas, particularly in the vicinity of Partho-Sasanian slipper



Fig. 22. Baked brick feature in Square 8L.



Fig. 23. Baked brick feature in Square 10I.

coffins, grave-sized piles of baked bricks abound. It seems likely that they served as coverings for tombs of this type, as at Seleuciaon-the-Tigris (Waterman 1933: pl. 22; Gullini, Invernizzi and Cavallero 1966, pl. 21; Gullini 1967: figs. 9, 30–36). Given their location and our knowledge of Old Babylonian burial practices, these baked brick traces almost certainly post-date Mashkan-shapir's abandonment as a city.

libn (mud brick)

The most common building material at Mashkan-shapir was sun-dried mud brick, which today is only visible on the surface under unusual conditions, more often from the air than from the ground. The only exception is the mud-brick platform noted above in connection with a baked-brick platform. It dominates the southern portion of the site, and its surface is hard, clean, and virtually free of sherd covering. In the damp weather of the winter of 1988–1989, the joins between individual bricks were quite visible (fig. 28).

Wet weather also helped to make visible other mud-brick re-

mains. Differential drying between mud brick and the surrounding fill revealed patterns of walls in a series of aerial photographs taken after the only significant rain of 1990. These were mapped over approximately 7.5 hectares, the area that could be photographed in the roughly two-hour interval before the traces dried out and disappeared (figs. 112, 144, 281).

Mapping on the basis of soil coloring is not without its dangers. Car tracks and even camel paths leave markings that are not unlike mud brick. Usually these are easily recognizable for what they are from the air, but not invariably. In our mapping of moisture traces of this type, some lines were noted—and recorded—which do not conform to the general architectural pattern of the area and may be no more than ghosts of old tracks. Because we lacked clear criteria for eliminating these traces, we elected to retain them in the final version of the plan.



Fig. 24. Aerial photograph of Canal G with quays on both sides.

The extent to which traces of libn walls visible on the surface reflect substantial remains underground must be judged on essentially the same criteria that we noted above in our discussion of baked brick. By and large, excavations throughout Mesopotamia have revealed the most significant changes in architectural arrangement and function following a major disruption in settlement, and because Mashkan-shapir was occupied so briefly, without historical record of major cataclysm, large-scale changes seem unlikely.

Debris from Manufacturing and Specialized Activities

Ceramic Slag

Ceramic slag was relatively abundant and easy to identify (fig. 29), but, as noted in chapter 4, the problem of distinguishing the two distinct industries that generated overfired clay—pottery manufacture and deliberate production of synthetic basalt—was not addressed in the field. In many instances, the survey notes, especially those from 1990, are sufficient to make distinctions between different types of deposits. They are noted in the discussion of individual hectare maps in chapter 8.

Ceramic slag appeared on the surface either in dense clusters, in thin scatters of highly fragmented material, or in occasional large chunks. The dense clusters may be safely interpreted as the remains of kilns (fig. 30). They usually have clearly defined boundaries, and are often found in groups. This is not to say that all the kilns in each group functioned simultaneously. Ceramic slag



is the heaviest and most durable material found on the surface of the site, and as such it is the most effective restraint to wind erosion. Therefore it is likely that if one kiln were abandoned and another established in the vicinity, both would leave noteworthy surface features. Some of the kilns at Mashkan-shapir undoubtedly post-dated the main second millennium occupation. One kiln in a group of four in the central part of the site was briefly investigated by Pamela Vandiver (figs. 31-32), who discovered it contained sherds of Partho-Sasanian date. In view of its elongated shape and dimensions, the kiln itself appears to have been designed to accommodate a slipper coffin. All other probable kilns seem to belong to the early second millennium, but will have to be tested archaeologically before we can be certain.

Fig. 25 (left). Photograph of the quays.

Fig. 26 (below). Baked brick quay or bridge support in Square 5G.





Fig. 27. Baked-brick tomb in Square 6H.



Fig. 28. Mud-brick traces following a rain in Section VI.



Fig. 29. Ceramic slag debris in Square 4E.

Elsewhere we found highly fragmented pieces of ceramic slag scattered over the surface in no discernible pattern. Clearly, there is no way



Fig. 30. The remains of a probable kiln in Square D9.

of knowing the circumstances that led to the formation of deposits like this. In some cases they may reflect disposal of kiln debris at dump sites somewhat removed from the kilns themselves. In one instance, on the west mound, slag fragments seemed to be confined to an architectural unit, as though they had been originally deposited in a room. While we have no clear evidence for such purposeful dumping elsewhere in Mesopotamia—normally, trash disposal seems quite haphazard little excavation effort has been devoted to either the peripheral areas of sites, where such dumping might have been expected to take place, or to workshop areas in general.

Alternatively, these scatters may represent locations where synthetic basalt was reworked into utilitarian items such as grinders, perhaps at some distance from production centers. The large number of grinding stones of this material recovered both during survey and in the course of our excavations, plus the large slabs associated with the mud-brick mound in the southern portion of the site, suggest that this must have been a substantial industry at Mashkan-shapir, if not at other Mesopotamian sites (Stone et al. 1998). Even after the abandonment of the second millennium B.C. city, the utility of this material continued to be appreciated. Nearby late sites have pieces of this material



Fig. 31. One of a group of Parthian kilns in Square 51.



Fig. 32. One of the Parthian kilns after it was cleared by Pamela Vandiver.



Fig. 33. Glazed slipper coffin and the synthetic basalt slab that had covered it in Sector VI.

on their surface (together with Old Babylonian bricks) and at least one slipper coffin burial at Mashkan-shapir itself was covered by a slab of ceramic slag (fig. 33).

Kiln Wasters

Kiln wasters were much less common on the surface of Mashkan-shapir than ceramic slag, despite the propensity of kilns to generate them in large numbers. It is possible that some wasters were not recorded correctly by those conducting the survey, but the only instance of confusion of slag and wasters that we were able to identify was a case of mistaking the former for the latter and not the other way around. The paucity of kiln wasters may stem from the overwhelmingly utilitarian nature of Old Babylonian pottery and relaxed standards on the part of its users—many vessels with signs of warping seemed to have been kept in use.

Most large groups of kiln wasters were associated with the tight concentrations of ceramic slag which we take to be the remains of kilns, but smaller concentrations have also been identified



Fig. 34. Copper rings found in Square 51.



Fig. 36. Pecked stone found in Square 7F.



Fig. 35. Fragments of a copper bowl found in Square 6G.

throughout the site in areas which seem to be quite distant from any likely candidates for pottery workshops. There may have been some very small-scale potters whose kilns have crumbled to dust but whose wasters are nevertheless found on the surface, or perhaps these clusters represent secondary usage of this material. Excavations, both at Mashkan-shapir and elsewhere, have demonstrated that potsherds, qua sherds, had many uses—for paving floors and streets, for filling drains, covering burials, etc. Kiln wasters were as suitable as any other sherds for these uses, and because piles of them were apt to be concentrated, it would not be surprising, in theory, if someone wishing to pave a floor or fill a drain sought them out. In practice, however, we have yet to observe any instance of a floor or drain filling consisting of kiln wasters as opposed to regular sherds.

Large concentrations of kiln wasters appear to provide a good indicator of the location of ceramic production centers, especially when associated with concentrations of ceramic slag, and thus play an important part in the mapping of manufacturing areas at Mashkan-shapir.

Copper and Cuprous Slag

Evidence of metal-working and metal use came in the form of identifiable metal artifacts (e.g., figs. 34–35), which are treated individually in chapter 6, and as material better measured by weight than form—metal fragments and cuprous slag. Virtually all of the metal collected was copper or

some alloy thereof.⁴ The metal fragments appear to have been the remains of items of everyday use for the most part, and we took their density to be a rough index of local accessibility to objects of metal. Given that metal was valuable and ultimately derived from long-distance trade, these data in turn give a suggestion of the overall wealth of the inhabitants of Mashkan-shapir. The weights of metal, including both individual objects, scraps, and slag were recorded on a square by square basis. A total of approximately three kilograms of metal and two kilograms of cuprous slag were recovered from the site as a whole.

By and large, these remains appear to date to the early second millennium B.C. rather than the Partho-Sasanian period. In the areas of the latter, copper/bronze items were rare apart from small, flat, circular pieces resembling coins (see chapter 6) and a clearly Hellenistic bronze bust, and no pieces of cuprous slag were recovered at all.

We subjected several of the fragments of copper/bronze and cuprous slag to PIXE analysis and micrography (see below, p. 73). We were only able to export and test fragments too small to be considered identifiable objects and thus do not have a truly representative sample. The analysis showed that most copper fragments were either worked cold and annealed, or cast. None had been simply worked cold. The amounts of tin included in the metal varied, with samples ranging from almost pure copper to tin-rich bronze.

In some instances, the cuprous slag was found in distinct concentrations, usually associated with numerous fragmentary pieces of metal. These concentrations would seem to be the remains of workshops. However, in no case have clear remains of furnaces, crucibles, or tuyeres been found associated with them. One need not assume that they would be—if the crucibles were of the type found at Tell edh-Dhiba'i (al-Gailani 1965: 37–38, pls. 7 and 8); the latter were all very friable and made of unbaked clay, and it is unlikely that they would have survived the erosion at Mashkanshapir. Under these circumstances, it is only their contents that would be left behind.

In other cases quite large quantities of cuprous slag were broadly scattered over a wide area, without any clear concentrations. Most but not all of these were found within 100 m of a known concentration and may reflect the disposal of the waste products of metal production through the customary Mesopotamian practice of discard in streets and empty lots. Some of these scatters were dense enough to yield more than 100 grams of slag in a 50 ha square, but usually the amounts were much lower. The total amount of cuprous slag recovered from the surface, however, seems too small to reflect any large scale smelting or even purifying of copper ores.

Stones

Although not uncommon, stones and stone objects cannot be dismissed as commonplace at Mashkan-shapir. Southern Mesopotamia has no stones of its own and the raw materials for such artifacts have necessarily been imported from a considerable distance. All lithic debris, both concentrated and relatively broad-scattered, was recorded in the course of the survey. Any stone that had a recognizable form, such as a fragment of a stone bowl or a bead, was collected and recorded as an object (fig. 36).

A number of chert and obsidian blades, points, and cores were recovered, but no evidence for their manufacture was found at the site. What chipped stone debris there was consisted primarily of fine-grained quartzite and evidenced a crude technology bearing no relation to the fine blade

^{4.} There was some shrapped on the site from recent military maneuvers, but it was immediately recognizable, and we ignored it. This may some day deteriorate to the point where it would create the impression of significant presence of iron at the site, but in 1990 it was clear that ancient iron was virtually absent.

workmanship. It seems most likely that the quartzite scatters represent no more than the exploitation by the local bedouin of stone brought to the site in antiquity for quite different purposes.

We observed a few dense concentrations of small stones that appear to have been of greater, albeit enigmatic, archaeological significance. Mesopotamian archaeological literature is not rich in examples of the use of stone for paving, drain filling, or other purposes that might have created such features. At Mashkan-shapir itself, these concentrations are rare and none was excavated to establish any sort of context.

Clusters of saddle querns, usually made of conglomerate, were also noted. To a certain extent the surface distribution of these correlates with graves and grave goods, and thus they may have more to do with burial practices than actual grain processing activity. Their date, however, is unclear. We have been unable to find any references to an association of grinding stones and graves at any other Old Babylonian or Partho-Sasanian sites, but grinding stones rate only a very minor place in archaeological literature generally. Importing and carefully shaping large blocks of conglomerate into saddle querns involves more than a little effort, so it would be of some interest if the behavior that produced these clusters and their dating could be resolved.

More generalized scatters of stones took the form of river pebbles, both small nodules of quartzite and sandstone, and larger pieces of materials like alabaster and marble. The former were unquestionably used as grinding stones and polishers. Numerous examples had been worn flat on one or more sides. Taken to completion, the grinding process would produce a stone cuboid, worn down on all six faces and clearly an artifact. Initially, however, these were simply stones. In our collecting procedures, the line drawn between these two ends of the continuum, between cuboids that we collected as registered objects and the more rounded cobbles that we noted as unworked stone in scatters and left on the ground, may have been somewhat arbitrary.

Since the small nodules of sandstone and quartzite were found in the same places as the larger pebbles of alabaster and marble, which doubtless served as raw materials for stone bowls and other such objects, it follows that the stone cuboids were probably used in the manufacturing process. No lapidary workshop has been excavated in Mesopotamia to date, so this linkage can only be made through the distributions seen in the survey data.

Bitumen

Scatters of bitumen in fragments of widely varying sizes also appeared (fig. 37). Bitumen, with its propensities as both an adhesive and a waterproofing material, had numerous uses and so it is not possible to assign functional significance to its presence in any given area. Moreover, it does not withstand the erosional forces that sweep the surface of the site at all well. It is to be expected that with time such bitumen scatters will be eroded away so as to become unrecognizable.

Burial Evidence

Pithos Burials and Pithos Sherds

Sherds of large vessels were found grouped together in a number of locations at Mashkan-shapir (fig. 38), and in some instances the rims of large vessels buried beneath the ground could be seen on the surface. At other Old Babylonian sites vessels of this size were used for two things—burial and storage. With surface remains it is often difficult to distinguish between these two functions.

Pithos sherds were found in greatest density in the few areas where there is evidence of modern clandestine digging, and in some cases they are associated with fragments of human bone—in short,



Fig. 37. Bitumen scatter found in Square 5H.

Fig. 38. Remains of a pithos burial, disturbed, found in Square 5I.

where ancient burials were looted. Where there are no traces of looting, it is more difficult to assess whether storage or burial is represented. When the whole rim of a pithos is visible, it survives because the jar is oriented in a more or less upright position and storage is the most likely explanation, since jar burials are generally oriented on their sides. Where only a partial rim is visible, the surveyor had to use his or her judgment as to what function was represented.

It was not always possible to be certain whether a large sherd came from a pithos or was a fragment of the slipper coffins used for Partho-Sasanian burial. Large sherds in areas where slipper coffins were common were judged more likely to come from the fragmentation of these sarcophagi than from Old Babylonian storage or burial jars.

In spite of these difficulties, the distribution of pithos sherds and traces of actual jars provides a general indication of the distribution of Old Babylonian burials over the surface of the site. Even if some storage jars or slipper coffins have inadvertently been included in this sample, they are not likely to make a significant difference in the overall pattern.

Slipper Coffins and Bathtub Burials

The remains of scores of slipper coffins (fig. 39) and a much smaller number of bathtub burials testify to the use of parts of the site as a cemetery in Partho-Sasanian times (Yeivin 1933). Most of the slipper coffins seen on the surface were

undecorated, but a few glazed and decorated examples were noted, predominantly in the southern portion of the site (fig. 33). In most instances, the tops of the slipper coffins had been eroded away, leaving no more than an elongated oval line of poorly fired ceramic. Slipper coffins and bathtub burials are the most concrete evidence that the surface survey provides for first millennium B.C./A.D. activity at Mashkan-shapir. By and large, these burials were located in discrete areas and not scattered over the site as a whole, so the disturbance of earlier remains that they caused is restricted to a few hectares.



Fig. 39. Slipper coffin found in Square 6H.



Fig. 40. Traces of late, probably Parthian/Early Islamic, canal in the desert.

Other Surface Features

Canals

The remains of ancient canals (fig. 40) were among the most conspicuous large surface features at Mashkan-shapir. They can be tied into larger regional hydraulic systems through the study of satellite imagery, and their dating can be worked out through examination of associated settlements, buildings at the site itself, and observation of what cuts through what. Not all canals had the same appearance, although there were general similarities. The largest cuts through squares 6B, 7B, and B8—a major topographic feature with high levees and a clearly depressed bed and its associations—are all of the Partho-Sasanian period. Smaller, earlier canals have too little topography to be registered on the 50 cm. interval contour map of the site, and still smaller off-takes are visible only from the air. As noted in chapter 2, one canal (B) is marked beyond the site by a line of vegetation (fig. 41). Because vegetation traps blowing sand, its bed survives as a ridge rather than a depression.⁵ Other small canals have no topographic profile off site, but are marked by soil discoloration; the levees are most characteristically marked by a lighter color.

^{5.} According to Lisa Wells, the presence of this vegetation may be an indicator of comparatively great depth, because the vegetation is attracted to soils that permit the extension of deep roots towards the water table, but this supposition has yet to be tested through auguring. The water table in March, 1990 was roughly five meters below the surface of the plain, and desert plants would no doubt seek the easiest route to it.



Fig. 41. Gate in the NW corner of the city, with Canal B running off into the desert, marked by a line of camelthorn.

The main problem in understanding the pattern of ancient watercourses at Mashkan-shapir is distinguishing the Old Babylonian remains from those of the Partho-Sasanian period. This problem is exacerbated by the fact that late canals seem to follow the lines of earlier ones. Although sherd scatter density differences are very effective at identifying the location of watercourses—and even of modern run-off channels—they cannot be used to solve the more significant problems of the relative chronology of these remains. It must be appreciated that all sequencing of canals is to a certain extent tentative, and more geomorphological study is a high priority for future work.

Watercourses can be assigned to the early second millennium when they are associated with architecture, streets, and other features of unambiguous Old Babylonian date. Their dating is further confirmed when they coincided with boundaries between areas with different types of Old Babylonian surface remains. When a watercourse is overlain by late, Partho-Sasanian occupation, we are also safe in assigning it an Old Babylonian date. If small canals connect with an Old Babylonian watercourse, they are assumed to belong to the same era. Using both SPOT and Corona imagery of the area, it is possible to trace many channels to the large, late Parthian/Early Islamic canal (see Adams 1981: 198, 208, 220) that crosses the northern portion of the site and runs near its western boundary. These channels can often be seen to cut through Old Babylonian canals and other remains, clearly revealing that they are later.

As noted, the real difficulty comes in the instances where later canal diggers reused earlier canal beds. There is nothing unexpected about this practice, because it meant moving less dirt, but it does complicate our assessment in that the earlier version of the canal is often completely obscured.

There are some very pale but clearly defined linear features with multiple channels that show up in the aerial photographs, looking like a painting with something dribbled over its surface. They



Fig. 42. Traces of furrows in fields, probably to be dated to Parthian/Early Islamic times on the basis of surface sherds, to the NW of Mashkan-shapir.

are less easy to see on the ground. Our best guess is that they are the remains of very minor late channels that perhaps changed in location from time to time, but their configuration is certainly peculiar. Since they cut across the Old Babylonian mound, it is unlikely that they were contemporary with the main occupation of the site.

Roads

The presence of ancient roadways was marked by raised, linear features a few meters wide made up of compacted and sherd-rich soil, which distinguished them from canal beds. Roads could, in some instances, be followed for distances of more than one hundred meters. All of the roads that we detected appeared to date to the Old Babylonian period, in view of the architectural alignments beside them and the fact that none appeared in areas of Parthian occupation.

Plow Marks

To the northwest of the site was an area where the remains of ancient fields were clearly visible, both from the air and from the ground (fig. 42). Here were found not only the main channels bringing water into the fields but also the small rills that fed the actual plants. There are no modern canals in the area that could have fed them. This area was examined by T. J. Wilkinson, who found that the associated ceramics, like the other field scatters in the vicinity of Mashkan-shapir (see Ap-

pendix 2), dated to the Partho-Sasanian occupation. The circumstances that allowed these field traces to be preserved for so long remain unclear. Perhaps they were buried under dunes for much of their history and are only now eroding out. Over the years that we worked at the site, we observed them deteriorating, especially following a great increase in desert vegetation in the wet spring of 1988 and the subsequent die-off of this new growth. Whatever accounts for the preservation of these field traces, they permit a better understanding of the Partho-Sasanian canal system and help us to distinguish it from the Old Babylonian.

Linear Features

A number of linear features that defied definition were observed from the air or from the ground, or both. For example, in squares 9K and 9L a large linear feature was marked by a concentration of tiny shells and fragments. Perhaps to be associated with this were other linear features, but here they were described in different ways by the various people who surveyed them, making it difficult to know what they were. The shell feature paralleled the Old Babylonian city wall and could therefore be contemporary with it, but the other features may cut across it and therefore be of a later date.

Another noteworthy group of enigmatic linear features is found in square 2G, at the end of the traces that we are interpreting as the remains of the city wall, which itself is only visible from the air. Since these features are located near one of the main Old Babylonian canals, they may represent some complication of the fortification system; but without systematic excavation, these surface traces remain puzzling.

Conclusions

Aerial photographs and a walking survey at Mashkan-shapir have provided an overall picture of the distribution of surface scatters over the entire surface of the site, indicating the positions of major features such as canals, roads, major buildings, platforms, burials, and production centers. These data are most informative in the aggregate, as overall distributions of debris like slags, pithos sherds, slipper coffins, and the like can provide an indication of the general locations of manufacturing centers or burials. The surface scatters provide only limited information on the major functions of particular areas, but they do create a framework within which we can analyze more functionally specific classes of small finds.

The MASCA Program of Analysis of Copper-base Artifacts from Mashkan-shapir: Preliminary Results and Observations

VINCENT C. PIGOTT

Introduction

The purpose of this short discussion is to offer some initial, tentative observations concerning the nature of the metalworking being practiced at ancient Mashkan-shapir. Though the metallurgical finds from the site have been the subject of only preliminary analytical review, as discussed below, their importance is quite clear. Only a very few Mesopotamian sites excavated by modern scientific archaeological methods have yielded the debris associated with metals processing and production. Thus, the Mashkan-shapir finds are truly rare in the Mesopotamian record. Moreover, the number of modern analytical programs focussed on Mesopotamian metals generally is relatively



Fig. 43. TAD SE 2 — Cored dendritic structure, tinbronze, possible casting debris, 100x.

Fig. 44. TAD SE 5 — Rectangular copper fragment (with low arsenic), annealing twins present, 200x.

small (see Moorey 1994: 276–78 for a check-list of published analyses by site). In fact, the only other Old Babylonian materials analyzed are those from a hoard of metal agricultural tools found at Tell Sifr (Moorey et al. 1988).

Mashkan-shapir is also unusual in that a recent analytical study of non-metallurgical slag from the site indicates a sophisticated understanding of pyrotechnology (Stone et al. 1998). Industrial workers at the site were "smelting" alluvial silt to produce a form of synthetic "basalt" used in paving stones and querns for grain grinding. The results of this study are pertinent to any future investigations of the metallurgical debris from Mashkan-shapir in terms of discussions of possible furnace design and temperature control.

The Analytical Programs

The most informative metallurgical data that have been obtained in the MASCA (Museum Applied Science Center for Archaeology, University of Pennsylvania Museum, Philadelphia, PA) program are those provided by the elemental analysis of various surface collected copper-base artifacts by proton-induced X-ray emission (PIXE). These analyses were conducted under the direction of Dr. Stuart J. Fleming (Scientific Director, MASCA) and Dr. Charles P. Swann (Bartol Research Institute, University of Delaware) (see Table 3, p. 81 below; see also Fleming and Swann 1993 for a discussion of PIXE spectrometry). Metallographic interpretations were undertaken by Dr. Tamara Stech and the author. As can be see in the descriptions in Table 3, metallography revealed the standard ancient metalworker's repertoire of casting, cold working and annealing used to shape the copper-base metal. Some examples of these basic microstructures identified are presented in photo-



Fig. 45. TAD 8 NE 4 — Copper fragment showing Cu-CuO eutectic, cast in open air?, 100x.



Fig. 46. TAD 8 NE 6 — Rectangular copper fragment, heavily corroded, annealing twins present, 400x.

micrographs (figs. 43–49). (Note that all samples were etched with a 1:1 solution of ammonium hydroxide and hydrogen peroxide. Sample preparation and photomicrographs at MASCA by Richard Baublitz.)

Evidence for Copper Production

Surface survey at the site by the field team recovered three kinds of metallurgical remains. Obvious artifacts were collected as objects and were not available for analysis. All "copper/bronze" fragments visible on the surface, as well as any pieces of cuprous slag, were bagged according to the 50 m. square survey unit. In addition, specific localities were identified where concentrations of a combination of cuprous slag and "copper/bronze" fragments could be discerned. The latter were noted on the survey sheet and bagged with the other surface copper. A selection of the bags of surface "copper/bronze" and cuprous slag were exported to the United States, and of these, some of the best preserved fragments were subjected to analysis by MASCA (see Table 3). The samples were drawn from the 1987 and 1990 seasons. The squares 4F-SW, 4G-NE, 5G-NW, 7H-NE and 9D-SW included concentrations of cuprous slag and copper fragments; 10H-NE and 9H-SW were squares where no such concentrations were identified. Mashkan-shapir lay a considerable distance from the ore sources of the Iranian and Anatolian plateaus, as well as Oman, from which ore and/ or metal could only have been obtained with considerable effort and expense. Therefore, scrap metal (much like the metal fragments in this study) would have been frequently hoarded and recycled by metalworkers in their industrial quarters. This probably explains the co-occurrence of both



Fig. 47. TAD 8 NE 7 — Copper fragment (with high nickel and low arsenic), fairly even grain size with well developed annealing twins, 400x.

Fig. 48. TAD 15 NE 4 — Copper fragment (with high nickel), possible casting debris, 400x.

cuprous slag and "copper/bronze" fragments within the concentrations that we interpret as the locations of metals-related workshops.

Artifacts in Copper

A number of copper-base artifacts from the site (e.g., MASCA sample numbers 75E-3, 8-NE-1, 8-NE-4, 8-NE-5) are of relatively low impurity, showing no major alloying ingredient—i.e, they are copper. However, by the early 2nd millennium B.C., metalworkers were certainly working with a variety of metals. Copper could have been produced and valued for its color and malleability or for purposeful alloying with tin. Refining primary smelted copper would have yielded low impurity copper. Many impurities would have floated on the surface of the molten metal and could have been skimmed off. Arsenical copper melted under oxidizing conditions in a refining crucible would have lost appreciable amounts of highly volatile arsenic.

Tin-Bronzes and the Sources of Tin

The presence of tin-bronze artifacts at this Mesopotamian site in the early 2nd millennium B.C. fits well with a pattern emerging across the ancient Near East, namely, that tin-bronze was well on its way to becoming the alloy of choice (Moorey 1994; Stech and Pigott 1986; Pigott 1999b). Potential sources of tin, once virtually undocumented for the region, have been identified in Anatolia (Yener and Vandiver 1993), Afghanistan (Clueziou and Berthoud 1982; Stech and Pigott 1986) and Central Asia (Ryzanov 1979; Alimov et al. 1998). While tin was clearly reaching Mashkan-shapir



Fig. 49. TAD 15 NE 5 — Rectangular, arsenical copper shaft fragment, irregular grain size, annealing twins present, 200x.

as ore, as ingot, or in bronze, which direction the tin was moving (much coming from the East, as the texts suggest), what form it was moving in, and who was moving it are vexing questions that remain unanswered.

Copper Ore Sources and the Admixture of Arsenic and Tin

As for the sources of the copper being worked at this site, the answers are equally complex for both the site and the region (see, for example, the recent discussion of the "tin problem" in Weeks 1999). Copper ore bodies in Anatolia (de Jesus 1980), on the Iranian Plateau (Pigott 1999a), and in ancient Oman (Weisgerber 1980, 1981; Berthoud et al. 1982; Hauptmann et al. 1988; Prange et al. 1999; Prange 2001) all could have been providing copper to Mesopotamian sites. Here, also, controversy reigns. The presence of both arsenic and nickel, which can co-occur geologically, can be attributed to ore bodies on the Iranian Plateau (e.g., ore bodies at Talmessi and Meskani in the Anarak Mining District) as well as to the ore bodies

in Oman (Pigott 1999a: 80–81). Unfortunately, the laboratory has yet to make definitive sourcing a possibility, even with the progress made in the application of lead-isotope analysis, which unfortunately has yet to be broadly applied in Mesopotamian archaeometallurgy (see, e.g., Sayre et al. 1992; Weeks 1999). That certain copper-base artifacts from Mashkan-shapir (e.g., F4SW-2, G4NE-4, G5NE-1, D9SW-1, D9SW-2) contain amounts of arsenic near to or above 1% and with associated amounts of tin over 1% reflects a pattern seen elsewhere in Mesopotamia, namely, the intentional alloying of tin with copper that happened to contain arsenic. This admixture is most probably the inadvertent result of smelting arsenical copper ores to metal that was then alloyed with tin. Given the fact that the Maskan-shapir artifacts that contain tin do not show any consistency of composition, it is also possible that arsenical copper ores could have been smelted together with ores of tin, a process that would make controlling the tin content difficult. Current consensus suggests that tin in amounts above 1% most probably resulted from its intentional addition. Such amounts of tin do not with any regularity co-occur with the vast majority of Near Eastern copper ore bodies. If they did, one would suspect that we would have been seeing tin commonly occurring in the elemental profiles of copper-base artifacts from across Southwest Asia and much earlier in time.

Finally, many of the larger issues surrounding the "tin problem," as well as what copper sources were being exploited, for the most part remain unresolved. Mashkan-shapir adds new data to continuing research into early urban metalworking traditions of Mesopotamia. However, only further Mesopotamian archaeological excavation and research in concert with laboratory analysis of archaeometallurgical remains will offer substantial new insights into our attempts to understand the production, role, and impact of metal use in this region.

			Brick Si	zes	
Square	Units	Rectangular, 24–28 x 16–18 cm.	Square, 32–38 cm.	Rectangular 32/34 x 17/19	Rectangular 30 x 20 cm.
6C	36	X			
7C	99				
7C	98				
7C	85				
8C	51	X			
4D	65	X			
9D	67, 76, 77	X			
9D	52	X			
3E	49		х		
3E	99			X	
4E	24		X		
4E	90		х		
4E	91		Х		
4E	88	X			
5E	60, 70	X			
8E	8	X			
8E	52	X			
9E	5	X			
3F	47, 48	X			
3F	25	X			
3F	47-8, 56-58, 66-67, 75-77	X	Х		
3F	9		Х		
4F	10		X		
4F	0		Х		
4F	21	X			
4F	27	X			
4F	60				Х
4F	52				х
4F	66	X			
4F	85, 86	X			
5F	84		Х		
5F	90		Х	X	
6F	11	X			
6F	2	X			
3G	49			X	
3G	45	X	Х	X	
3G	34, 35			X	
3G	35			X	
3G	49			x	
3G	26			X	
3G	8	X			
3G	37				Х
3G	54		Х		
3G	84				х

Table 2: Baked Brick Sizes from Survey

			Brick Si	zes	
Square	Units	Rectangular, 24–28 x 16–18 cm.	Square, 32–38 cm.	Rectangular 32/34 x 17/19	Rectangular 30 x 20 cm.
3G	74				X
3G	95	X			X
3G	77	X			
3G	55			X	
3G	65	X			
3G	59	X		x	
3G	49	X	X	X	
4G	83-94	Х			
4G	41-42, 51-53, 62	Х			
4G	49	Х			
5G	10		Х	X	
5G	41		Х		
5G	50				Х
5G	49	Х			
5G	42-53	X			
5G	43		Х		
5G	50	X			
6G	54	Х			
3H	3	Х			
3H	10	X			
3Н	21	Х			
3H	44	Х			
3Н	23, 33, 34	Х			
3Н	13	Х			
3Н	47	Х			
3H	45, 46	X			
3Н	56, 57, 66, 67	Х			
3Н	64, 75	Х			
3H	77, 78	X			
3Н	66	Х			
5H	0	Х			
5H	5		Х		
5H	67	Х			
6H	83, 84	X			
6H	76	X	Х		
6H	93. 94	Х			
6H	65			X	
6H	55			X	
6H	66		Х	X	
6H	7, 17			X	
6H	47	X			
6H	52		Х		
6H	73	X			
6H	56, 57	Х			

Table 2: Baked Brick Sizes from Survey

			Brick S	izes	
Square	Units	Rectangular, 24–28 x 16–18 cm.	Square, 32–38 cm.	Rectangular 32/34 x 17/19	Rectangular 30 x 20 cm.
8H	99	X			
10H	21				Х
10H	32	X		X	Х
3I	31	X			
31	0,11,21	X			
3I	36	X	Х		
3I	46	X			
3I	56, 77	X			
3I	62, 63, 73	X	Х	X	
3I	55		Х		
4I	76	X			
7I	80	X			
7I	82	X			
7I	65, 66, 56, 57	X		X	
10I	45, 54, 55, 56, 64, 66, 74	X			
10I	59		Х		
11I	50, 60		Х		
3J	3	X			
3J	4	X		X	
3J	32		Х		
3J	8, 17	X			
3J	26		Х		
4J	9, 19	X			
5J	21	X			
5J	18	X			
5J	64	X			
5J	69			X	
6J	34	X			
6J	14	X			
7J	0	X			
10J	1	X			
7K	26			X	
8K	11	X			

Table 2: Baked Brick Sizes from Survey

Square	MASCA Sample #	Си	As	Sn	Fe	S	Pb	Ag	Sb	Ni	CI	Object
4F-SW	75E-1	96.6	0.61	1.07	0.23	0.10	0.11	0.06	0.073	0.27	0.10	Heavily corroded, tin-bronze rod fragment, annealing twins present
	75E-2	90.9	0.87	5.21	0.15	0.45	0.19	≥0.124	0.043	0.95	0.15	Cored dendritic structure, tin-bronze, possible casting debris
	75E-3	97.2	0.35	0.14	0.11	0.33	0.22	0.05	0.036	0.47	0.08	Amorphous copper lump, heavily corroded
	75E-4	96.7	1.03	> 0.043	0.40	0.14	0.18	≥0.020	0.073	0.53	0.07	Rectangular copper fragment (with low arsenic), annealing twins present
4G-NE	8-NE-1	97.8	0.29	> 0.045	0.20	0.13	0.06	0.04	0.031	0.42	0.10	Copper shaft fragment, annealing twins present
	8-NE-3	90.6	1.30	5.23	0.47	0.10	0.24	0.40	0.051	0.40	0.12	Triangular shaped fragment, tin-bronze (with low arsenic)
	8-NE-4	98.5	0.10	> 0.023	0.09	0.26	0.04	≥0.018	0.035	0.12	0.04	Copper fragment showing Cu-CuO eutectic, cast in open air?
	8-NE-6	97.7	0.18	> 0.020	0.35	0.18	0.20	≥0.018	0.036	0.37	0.10	Rectangular copper fragment, heavily corroded, annealing twins present
	8-NE-7	95.6	0.51	> 0.037	0.28	0.43	0.46	≥0.029	0.059	1.40	0.18	Copper fragment (with high nickel and low arsenic), fairly even grain size with well developed annealing twins
5G-NW	15-NE-1	79.2	1.00	16.66	0.34	0.18	0.39	≥0.034	0.063	0.74	0.12	Tin-bronze pin(?) tip (with low arsenic), heavily corroded
	15-NE-4	96.3	0.43	> 0.028	0.85	0.47	0.06	≥0.022	0.041	0.88	0.08	Copper fragment (with high nickel), possible casting debris
	15-NE-5	96.4	1.94	0.14	0.31	0.062	0.05	≥0.035	0.039	0.29	0.04	Rectangular, arsenical copper shaft fragment, irregular grain size, annealing twins present
10HNE	3190a	90.9	0.65	6.26	0.12	0.11	0.75	≥0.035	0.027	0.54	0.01	Large tin-bronze prill, cored, dendritic structure, possible casting debris
	3190d	83.9	0.64	13.28	0.13	0.20	0.25	≥0.123	0.036	0.35	0.15	Small tin-bronze prill, heavily corroded dendritic structure, possible casting debris
WNHL	3845b	98.3	0.12	> 0.019	0.10	0.21	0.31	≥0.032	0.016	0.28	0.06	Heavily corroded fragment of copper, fine grained structure, annealing twins present
MSH6	4108b	97.2	0.65	0.45	0.14	0.17	0.08	0.15	0.016	0.40	0.08	3 fragments of worked copper-base metal corroded together
MSCI6	4454a	95.1	1.39	1.64	0.23	0.12	0.09	≥0.032	0.023	0.69	0.05	Tin-bronze rod (with low arsenic and nickel), annealing twins present
	4454b	93.6	1.01	3.73	0.35	0.25	0.13	≥0.021	0.054	0.23	0.02	Rectangular, tin-bronze (with low arsenic) fragment, dendritic, cast structure.
	4454c	97.8	0.19	> 0.041	0.29	0.09	0.20	≥0.029	0.017	0.71	0.01	Rectangular, copper fragment, variable grain size, annealing twins present
	4454d	98.1	0.11	0.58	0.14	0.15	0.08	≥0.010	0.016	0.14	0.07	Copper fragment, fine grained structure, annealing twins present
	4454e	98.4	0.06	> 0.012	0.13	0.38	0.24	≥0.041	0.016	0.09	0.07	3 fragments of worked copper-base metal corroded together
	4454f	98.2	0.15	> 0.011	0.12	0.19	0.06	≥0.009	0.016	0.55	0.06	Rectangular, copper fragment, variable grain size, annealing twins present

Chapter 6 The Objects

The total of separate object numbers given to small finds collected in the surface survey was 1,133, many of them, like those for terra-cotta statuary or the Sin-iddinam inscription, referring to multiple pieces from the same location. Others, such as baked clay sickles, were sufficiently common that their locations were noted but no object numbers given. Altogether, approximately 1,700 individual small finds were recovered from the surface of Mashkan-shapir. These included decorative terra-cottas, tools, weapons, jewelry, complete ceramic vessels, stone grinders, cylinder seals, and other objects. The findspots of nearly all of these were plotted by triangulation, the only exceptions being pieces picked up by workmen or visitors to the site, which accounted for less than 1% of the total. Even in these cases, we were generally able to interview the finder to identify the part of the site from which the objects came. Except in cases where this information would be of little value, such as for baked clay sickles and grinding stones, the objects were measured, drawn, and photographed.

The vast majority of objects dated to the Isin-Larsa and Old Babylonian periods. The primary exceptions were the 102 baked clay sickles, which were probably made in the fourth millennium and augment the ceramic evidence for an underlying Uruk occupation of the site; an additional nearly 140 objects dated to periods long after the abandonment of the city of Mashkan-shapir and are predominantly to be associated with the Partho-Sasanian graves and occupation. Most of the latter consisted of copper/bronze disks, glass vessel fragments, and glass jewelry. In this chapter, we report on the nature and types of objects recovered from Mashkan-shapir; in chapter 9, we will discuss the significance of their distribution over the surface of the site.

Terra-cotta

Vessels

Of all the objects on the surface of Mashkan-shapir, whole vessels are probably least revealing in their pattern of distribution. Unless quite small and solidly made, whole pots are rarely found outside of burials in excavation, and when the forces of destruction operating on the surface of the site are taken into consideration, it is certainly no coincidence that most whole vessels found on the surface were of these less friable types (fig. 50). The larger jars appear to have been recently exposed by illicit diggers, whose endeavors are most conspicuous in the area where fragments of burial jars are most abundant. Durability may be the key reason for the survival of rim-to-base sections of large basins of a type seldom found complete and rarely published elsewhere. In any event, the surface sample of whole and reconstructable vessels can by no means be considered representative of the kinds of ceramics preserved beneath the surface of the site and therefore certainly cannot be considered a use assemblage.



Fig. 50. Whole Vessels (all reproduced at 20%). Not in catalog: Lots 517, 702, 1846, 3791

All but one of the 27 whole vessels found on the surface can be dated to the Isin-Larsa/Old Babylonian period. By and large, our examples are typical of Old Babylonian assemblages from else-where—shallow bowls, goblets and a few simple jars. Bowl forms were similar to examples from Nippur (Gibson 1978: fig. 62:7; fig. 84 Types 50 and 51; McCown and Haines 1967: pls. 88:1, 88:10, 82:20), Ur (Woolley and Mallowan 1976: pl. 101:8b), Uruk (Strommenger 1963: pl. 24h) and Tell ed-Der (Gasche 1989: pls. 25:44, 26:6).

Goblet forms find parallels at Nippur (McCown and Haines 1967: pl. 95:6), Uruk (Strommenger 1962: pl. 24b), Tell ed-Der (Gasche 1989: pl. 34:3–4) and Tell al-Dhiba³i (Mustafa 1949: pl. IV:1). With regard to goblets, one noteworthy piece (AbD 90-573, fig. 107) was a fragment of the lower part of a goblet bearing a cuneiform stamp. Similar stamped goblets were found in our excavations at Mashkan-shapir (Stone and Zimansky 1994: 45), as well as at Nippur (McCown and Haines 1967: pl. 148:3) and Isin (Hrouda 1987: pl. 30:5, 6). Unlike the stamps excavated at Mashkan-shapir, which were in mirror writing, the one found in the survey can be read straight off.

Other types of ceramics included three jars (AbD 87-167, AbD 87-205, AbD 90-269) and a pot stand (no object number), all of which must have made their way to the surface through recent human intervention. These again were typical Old Babylonian types such as those illustrated in the publications of excavations at Ur (Woolley and Mallowan 1976: pl. 106:57), Nippur (McCown and Haines 1967: pl. 89:10–11, pl. 87:3) and Uruk (Strommenger 1961: pl. 18d). Two small lids (AbD 88-6, AbD 88-311) similar to those found at Nippur (McCown and Haines 1967: pl. 83:2 and 3) and Tell al-Dhiba'i (Mustafa 1949: pl. V:26) probably owe their preservation on the surface more to their small size than to their frequency in the total assemblage. This is especially true of bottle stops, of which we recovered three (AbD 87-104, AbD 90-461, AbD 90-641; fig. 51). One was pierced on one side, presumably to keep it attached to the bottle. Bottle stoppers are rarely mentioned in excavation reports on southern Mesopotamian sites, although several are recorded at Nippur (McCown and Haines 1967: 106). None of these came from Isin–Larsa or Old Babylonian levels. It seems probable that bottle stops were quite rare but show up disproportionately in our survey because of their solidity.

Of the more fragmentary ceramic remains on the surface, some deserve more detailed consideration (fig. 51). A spout (AbD 88-142) is similar to an example from Uruk (Strommenger 1963: pl. 25g), except that it was pierced with only one hole. While it seems most likely that this served as a spout, it could also be part of a foot of some unusual kind. Also unusual was part of an object (without object number, Lot # 209) very similar to one that Woolley (Woolley and Mallowan 1976: pl. 97d) suggests was part of some kitchen equipment, without offering more precise suggestions as to its function. Our example also has some similarity to the pot bellows found in the coppersmith's workshop at Tell al-Dhiba'i (al-Gailani 1965: pl. 7), except that the exit hole appears to be somewhat larger.

The surface survey yielded three examples of modeled decoration on ceramics (fig. 51), none of which have clear parallels in southern Mesopotamia. Nothing exactly like the nude female (AbD 88-147) or crude male (AbD 88-193) figures is reported from other sites, although there are appliqué snakes at Ur (Woolley and Mallowan 1976: pl. 92:258–261) and Tell ed-Der (De Meyer 1984: pl. 9:6), and a ram's head at Nippur (McCown and Haines 1967; pl. 148:11). Our third piece (AbD 88-215)—a large shallow tray, with two ram's heads modeled on the rim facing inward and either a third, or a spout, broken away—has no direct parallels. While a much more elaborate "moufflon bowl" was found at Ishchali (Hill, Jacobsen, and Delougaz 1990: pls. 31–32), in that case the ram's head projected out from the bowl.



Fig. 51. Decorated ceramics (all reproduced at 33%). Bottle stops: *AbD* 87-104, *AbD* 90-461; *Spout: AbD* 88-142; Pot bellows (?): Lot 209; With molded decoration: *AbD* 88-147, *AbD* 88-193, *AbD* 88-215; *Stamped: AbD* 90-723; *Table: AbD* 87-264; *Circular tray: AbD* 87-76.

In addition to the Isin–Larsa/Old Babylonian ceramics, three pieces dating to the late occupation of the site—one nearly whole bowl, and two sherds—are also worthy of note. The bowl was a small green glazed vessel (AbD 88-253; fig. 50), similar to a Parthian example from Seleucia (Debevoise 1934: 80–81, type 189). The sherds were collected in accordance with our strategy of noting anything that struck a surveyor as peculiar. One (AbD 87-144) has a variant of the "honeycomb" pattern on the exterior. Adams (1981: 234) dates this ware to the late Sasanian and Umayyad periods, but Northedge and Falkner (1987: 163 n. 62) argue that its production continued after that time. The other sherd (AbD 90-723; fig. 51) was stamped. Almost identical examples have been found at Nippur (Legrain 1930: pl. 70:385–86) and Tello (de Genouillac 1934–36: vol. 2, pl. 131b); and excavations at Tell Abū Sarifī, suggest an early Islamic date (Adams 1970: pl. 4, fig. 9). These were simply unusual and elaborate pieces among many more common types of honeycomb wares and stamped sherds that were not collected.

Ceramic Tables and Circular Slabs

Ceramic tables with three legs were found at Tell ed-Der and Ur (De Meyer, Gasche, and Paepe 1971: pl. 26:1; Woolley and Mallowan 1976: pl. 93l), and fragments of flat, circular slabs with impressed decoration have been published in the reports on excavations at Tell ed-Der and Nippur (De Meyer, Gasche, and Paepe 1971: pl. 26:2; McCown and Haines 1967: 148:9). Gasche, noting deep impressions on the base of the ceramic tables and signs of burning on their feet, suggested that they served as bases for ovens. He saw the fragments of the impressed slabs as part of the same thing (De Meyer, Gasche, and Paepe 1971: 36–37). At Mashkan-shapir, however, the fifteen examples (AbD 87-264 [fig. 51], AbD 88-249 and others without numbers) of terra-cotta tables all had flat tops and very rough, impressed bottoms, which were quite different from the three examples of circular slabs (AbD 87-76, AbD 87-254, AbD 90-52) with their carefully impressed tops. The Mashkan-shapir circular slabs resemble the examples from Tell ed-Der and Nippur cited above but clearly did not have the same function as the tripod-legged tables. Two possibilities come to mind: they might have served as lids to large jars (Parrot 1959: pl. 38) or have been crude, southern examples of the elegant bread molds found at Haradum and Mari (Parrot 1959: pls. 12–16; Kepinski-Lecomte 1992: fig. 149:6).

Mashkan-shapir data are also relevant to the issue of the function of the three-legged tables. Unlike most other ceramic artifacts, they were generally found in clusters on the surface. This suggests that they were not used in widely dispersed, private, domestic activities but may be better seen as equipment of some concentrated industry or collective activity.

Plaques and Figurines (figs. 45-46)

Baked clay figurines and plaques were abundant on the surface of Mashkan-shapir: 27 plaques and 30 figurines were recovered by the survey. Most standard Isin–Larsa/Old Babylonian types are present, with a few exceptions. So far we have found no "Humbaba masks" and no erotic plaques, although a piece seen during a brief visit to the site in 1988, but not picked up, might have been an example of the latter. More surprising is the absence of any example of the shrouded god in a coffin (e.g., Opificius 1961: pl. 7:291, 299, 310; Ziegler 1962: pl. 9:139–50). Since this figure not uncommonly holds a lion sickle, the primary attribute of Nergal, one might have expected a terracottas of this kind to appear at Mashkan-shapir, where the iconography of the god of death is commonplace. Even though it is dangerous to generalize from negative evidence, the size of our sample and the frequency of representation of this type elsewhere in Mesopotamia makes its absence noteworthy.

As at other sites, the figurines from Mashkan-shapir fall into three main categories: nude female representations, male figurines, and animals. By and large, the heads of the human figurines (and most of the animal figurines) have not been preserved, probably because they break off easily and with a little wear become indistinguishable from the sherd debris on the site.

Five fragments of nude female figurines were recovered (fig. 52). On two, little more is preserved than the pubic triangle, which is quite elaborate in one instance (AbD 88-313)¹ and plain (AbD 87-212)² in the other. The three torsos also differ from one another. One (AbD 88-198) is very eroded and resembles an example published by Barrelet (1968: pl. 1:10). One is quite nicely modeled (AbD 87-292), with traces of a belt (like Barrelet 1968: pl. 9:93). The third (AbD 87-146) has applique breasts, arms, and a necklace, like examples from Girsu (Barrelet 1968: 9:103) and Isin (Hrouda 1987: pl. 22: IB1346, IB1589). For the most part, the repertory of nude female figurines from Mashkan-shapir shows the same variety that is seen at other contemporary sites.

Five male figurine bodies were recovered, all with hollow bases (fig. 52). Publications from other sites do not reveal whether similar pieces are solid or hollow-based, so we are unable to say whether this feature is typical. The form of the base may have functional significance in that hollow pieces can be attached to poles of some kind or could stand on a flat surface. On only one of the examples from Mashkan-shapir (AbD 87-6) is the head preserved. It is so badly weathered that only the depressions for the eyes can be made out. The features, including eyes, were presumably applied, and the absence of both beard and eyes may be attributed to weathering. Restoration of these details would produce a figurine resembling examples from Girsu (Barrelet 1968: pl. 5:52) and Nippur (McCown and Haines 1967: pl. 128:5). The other four pieces are both headless and armless. In two instances, only the body and skirt are preserved (AbD 90-51, AbD 90-721). One of the others (AbD 90-579) may have been holding something, like figurines from Girsu (Barrelet 1968: pl. 5:65–69, 7:71–78). AbD 88-68 has an appliqué curl along one side, for which we can find no parallel.

There are three other anthropomorphic figurines that are in such poor condition that we cannot make a judgment about gender. They all have solid bases, two (AbD 88-164, AbD 88-304) flaring slightly at the bottom (Barrelet 1968: 8:90–91), and the third (AbD 88-271) more pointed (Barrelet 1968: 3:30; McCown and Haines 1967: 129:4).

One noteworthy figurine appears to belong to a class reported at Aqar Quf (Mustafa: 1947, figs. 3, 21, 22, 24), Nippur (Gibson 1993: 14, figs. 11, 12), and perhaps Isin (Hrouda 1981: 62–65) and Uruk (Ziegler 1962: pl. 7:126a), wherein figures clutch various parts of their bodies. These poses are thought to be indications of specific ailments, and the figurine class itself may be related to healing rituals and associated with the god Gula. AbD 88-297 (fig. 52) has one hand on his stomach and the other on his head—Rodin's Thinker with a bellyache, if held upright; but, like the examples from Aqar Quf, Isin, and Nippur, the Mashkan-shapir figure appears to be kneeling. The lower legs are missing. Given the association of such figurines with temples dedicated to Gula at Nippur, Aqar Quf, and Isin, this piece may be an indication that a similar temple or cult existed Mashkan-shapir.

^{1.} For comparanda, see examples from Nippur (Legrain 1930: pl. 4:25; McCown and Haines 1967: 122–24), Ur (Woolley and Mallowan 1976: pls. 64:6; 65:7, 10) and Isin (Hrouda 1987: pl. 22: IB1346).

^{2.} For comparanda, see Barrelet 1968: pl. 9:93.



Fig. 52. Terracotta figurines (all reproduced at 50%). Nude female: AbD 87-146, AbD 87-212, AbD 87-313; Male: AbD 87-6, AbD 90-579; Figure in pain: AbD 88-297; With impressed decoration: AbD 90-91, AbD 90-215; Animal: AbD 88-248; Horse and rider: AbD 87-5; Parthian plaque: AbD 90-214.

Two figurines bore impressed decoration that has no parallel elsewhere. In one case (AbD 87-215), a curious, slightly concave head with pinched eyes surmounts a body upon which either clothing or a very long beard is marked out by deep triangular impressions. The other figurine (AbD 90-91) has a hollow body that becomes solid as it tapers toward the base and is covered front and back with semicircular impressions. Although in shape it resembles representations of the shrouded or underworld god (Opificius 1961: 90–94), no other example has this surface decoration. The discovery of two pieces with this peculiar form of impressed decoration is not enough to establish a local style, but it may be noteworthy that thus far this type of decoration is only seen at Mashkan-shapir.

We found nine fragmentary animal figurines, most with legs missing and all but one without a head (fig. 52). AbD 88-248 was in five pieces; when joined, they formed a complete representation of what seems to be a goat.³ Of the torsos, three (AbD 88-274, AbD 87-183, AbD 88-163) belong to animals with quite long necks. Long-necked animal figurines have been found in Old Babylonian levels (McCown and Haines 1967: Pl. 139:6, 8–10), but horse figurines and horse-and-rider figurines are more characteristic of later Parthian occupations. At Mashkan-shapir, two figurines, one a horse's head (AbD 87-5) and the other the remains of a horse-and-rider figurine (AbD 90-647), clearly fall into the latter category.⁴ The other long-necked animals cannot be so confidently assigned to an occupation period, but the hard, gritty paste of AbD 88-274 suggests that it is Parthian rather than Old Babylonian.

Molded clay plaques, 27 of which were found, were more abundant than hand-made figurines at Mashkan-shapir (fig. 53). Nude females are most commonly represented. These, with little or no jewelry and plain, shoulder-length hair are ubiquitous at Old Babylonian sites (e.g., Barrelet 1968: Pls. 37:386–87, 38:389–396, 55:580–87; Opificius 1961, Pl. 1:1, 15, 58, 103). Although only one well preserved upper portion was found (AbD 90-357), it is almost certain that four lower body fragments (AbD 88-206, AbD 88-229, AbD 88-5, AbD 88-8) and two badly eroded upper portions (AbD 88-124, AbD 90-229) are also examples of this type. AbD 88-244 is a rather stocky and less graceful variant without close parallel elsewhere. At other sites, nude female figurines also occur in more curvaceous and ornate versions (such as Barrelet 1968: Pls. 31–32; Opificius 1961: Pl. 2:115; Woolley and Mallowan 1976: 66:22) with elaborate headdresses, jewelry, and belts. Only one of these has been found at Mashkan-shapir (AbD 87-1), and it differs somewhat from its southern Mesopotamian counterparts. Either the figure's hair has a central part, or she wears a divided head-dress. Her elbows are pressed close to the waist, and her hands are clasped in front of her.

One female plaque, AbD 90-214 (fig. 52), has a high coiffure similar to clearly Hellenistic examples from Nippur (Legrain 1930: Pl. 21), Seleucia (Waterman 1931: Pl. 6:6) and elsewhere (Barrelet 1968: Pl. 47:502, 506). This establishes the possibility that some of the more anonymous female plaques (those without heads or badly eroded) derive from later occupation rather than Old Babylonian levels.

Four plaques are of the type that depict nude males with shaven heads. AbD 90-467 and AbD 87-14 are very well preserved and virtually identical to an example found at Nippur (Legrain 1930: Pl. 43: 229). There are also similar examples from Ur (Woolley and Mallowan 1976: Pl. 76: 112,

^{3.} For comparanda, see similar examples from Nippur (Legrain 1930: Pl. 54:285, 286; McCown and Haines 1967: Pl. 140:9).

^{4.} They are similar to examples from elsewhere in Mesopotamia (e.g., Van Buren 1930: figs. 216, 217; McCown and Haines 1967: Pls. 131: 1, 2; 141:10; Ziegler 1962: Pls. 39, 42).
116). One of the two remaining pieces is only the lower portion of the plaque (AbD 88-178), and the other is badly eroded, but it seems likely that they represent the same type.

Like those of other Mesopotamian sites, many Mashkan-shapir plaques depict religious themes. Three bearing presentation scenes were recovered, two (AbD 87-208 and AbD 90-328) apparently made from the same mold. The third (AbD 90-326) came from a different mold but otherwise looked much the same. They show a male figure facing a standing god who perhaps holds the rod and ring, with a somewhat smaller goddess standing behind the supplicant. Above are a row of four solar discs. The only close parallels for these come from Nippur (Legrain 1930: Pl. 39:207) and Girsu (Barrelet 1968: Pl. 48:508), but in these cases the main deity is seated rather than standing.

Although presentation scenes are the most common theme on cylinder seals of this period, it is rare for them to appear on plaques and indeed relatively uncommon for plaques to represent more than a single anthropomorphic figure.

Other plaques with religious content have clearer parallels elsewhere. Our example of the goddess with geese (AbD 87-57) so resembles an unprovenienced example published by Opificius (1961: Pl. 5:251) that it may well be from the same mold and thus from Mashkan-shapir itself. A similar but seated goddess was found at Digdigga (Woolley and Mallowan 1976: Pl. 89:225). These three plaques are interesting in that they combine the iconography of the goddess with the spiked headdress carrying vases and associated with rosettes (Barrelet 1968: nos. 305-13; Woolley and Mallowan 1976: Pl. 78:125) with that of the goddess with geese or swans (Barrelet 1968: nos. 291-98; Woolley and Mallowan 1976: Pl. 78:125; Moorey 1975: Pl. 18a; Ziegler 1962: Pl. 11:181; and perhaps Legrain 1930: Pl. 40:212 and Ziegler 1962: Pl. 11:180). Some of these goddesses with geese also hold flowing vases (Woolley and Mallowan 1976: Pl. 80:148; Van Buren 1930: Pl. 21:fig. 106), but except for the three examples noted above, the headdress is always different and the rosettes are missing in all cases where preservation is good enough to judge. Moreover, with one exception (Barrelet 1968: Pl. 35:368), the spiked headdress is only found on plaques on which there are also rosettes and vases. These data suggest that the Mashkan-shapir example represents the goddess with rosettes—whoever she may be. When depicted seated instead of standing, she sits on a throne decorated with geese. The data are insufficient establish whether or not the goddess with geese and the goddess with rosettes are one and same, but these plaques do illustrate the complexity of Mesopotamian iconography.

The male figure holding a staff (AbD 88-213) is probably related to figures of gods holding staffs from Isin (Hrouda 1977: Pl. 24:IB331) and Nippur (Legrain 1930: Pl. 38:203, 205). Without the preservation of the head and headdress, it is impossible to tell whether this plaque depicted a god; another example from Nippur (McCown and Haines 1967: Pl. 135:9) shows a mere mortal in similar pose.

The only other plaque from Mashkan-shapir with a clearly religious theme (AbD 88-223) depicts a god wearing the horned crown with his hands in front of his face. A plaque from Isin shows a deity in a similar position (Hrouda 1977: Pl. 24:IB375), but the complexity of the hair in the latter example suggests a goddess rather than a god. Since both the Mashkan-shapir and the Isin plaques are quite fragmentary, we do not have an understanding of the whole scene.

The fragmentary nature of two other plaques from Mashkan-shapir also prevents us from establishing whether they represent divine or human figures. One shows no more than a pair of feet and a skirt (AbD 88-194). These are virtually identical to an example from Girsu (Barrelet 1968: Pl. 27:282). The second, AbD 88-181, shows a human head—probably male—that either wears a sort of wimple-like headdress or blends into the rear of a cushion-shaped plaque. No good parallels can be found for this example.



Fig. 53. Terracotta plaques (reproduced at 75%). Nude female: AbD 87-1, AbD 88-229, AbD 90-357; Nude male: AbD 88-178, AbD 90-467; Presentation scenes: AbD 87-208, AbD 90-328; Religious: AbD 87-57, AbD 88-223; Male with staff: AbD 87-252, AbD 88-213; Unusual male: AbD 88-181; Lion: AbD 87-23.

Our single example of a lion plaque (AbD 87-23) is simpler than the more elaborate examples known from Girsu (Barrelet 1968: Pl. 51:235), Nippur (Opificius 1961: Pl. 122:649; McCown and Haines 1967: Pl. 142:8–10), and Ishchali (Hill, Jacobsen, and Delougaz 1990: Pl. 38a–c), but resembles less common exemplars from Girsu (Barrelet 1968: Pl. 51:536), Larsa (Barrelet 1968: Pl. 57:600–602) and Ur (Woolley and Mallowan 1976: Pl. 91:251).

There are two examples of plaques with seated figures at Mashkan-shapir (fig. 54). One (AbD 90-282) is a quite typical representation of a divine couple, similar to examples from Girsu (Barrelet 1968: Pl. 49:515-524), Ur (Woolley and Mallowan 1976: Pl. 83:171), Uruk (Ziegler 1962: Pl. 10:165), and Tell Yelkhi (Bergami 1984: 239, fig. 69). On the other (AbD 88-257) there is an animal, perhaps a dog, in profile at the feet of the frontal seated figure, who is presumably divine. Similar plaques from Nippur and Uruk have been published. These are sometimes without accompanying animals (McCown and Haines 1967: Pl. 133:7), sometimes accompanied by geese or ducks (Legrain 1930: Pl. 40:212; Ziegler 1962: Pl. 11:180), and sometimes by lions (McCown and Haines 1967: Pl. 133:8). Our example, however, is peculiar in that no arms are visible, despite good preservation almost to the shoulders.

In sum, it would appear that types quite rare elsewhere, such as nude male plaques and presentation scenes, were popular at Mashkan-shapir, while other forms, such as the Humbaba mask and the shrouded god, were unusually rare. The unique characteristics of the iconography of some of the Mashkan-shapir plaques and the size of the city itself would lead one to suspect that plaques were manufactured on site, and the discovery of a mold (AbD 88-290) confirms this. The mold in question would produce a nude female plaque with a somewhat unusual hair treatment.

Model Beds, Boats, Chairs, and Chariots (figs. 54–55)

Models, while not particularly common, are found at all Old Babylonian sites with substantial artifact inventories. Model boats and beds fall into a limited number of types, whereas the elaborately decorated model chairs and chariots exhibit more diverse iconography. Model chariots were unexpectedly abundant at Mashkan-shapir. Only at Kish, where approximately 50 were found in the course of extensive, multi-season excavations, has a comparable inventory been found. Otherwise, these objects are rare at Old Babylonian sites (Stone 1993).

The limited types of model beds (fig. 54) include those with various kinds of matting, with female figures, with couples, and with combinations of the above. Individual sites appear to favor particular types: e.g., all beds from Kish seem to have couples on them (Moorey 1975: 91); and both female figures and matting are depicted on beds from Ishchali (Hill, Jacobsen, and Delougaz 1990: Pl. 37), etc. The six model bed fragments found in the Mashkan-shapir survey are similar to those found elsewhere. Two (AbD 88-238, AbD 88-292) are plain, with nude female figures on them, similar to a number of examples from Nippur (McCown and Haines 1967: Pl. 144:5, 6; Legrain 1930: Pl. 11a, 11b). The other four—all fragmentary—show patterned bedding material. Two (AbD 88-251, AbD 88-272) display what has generally been interpreted as woven reeds, comparable to examples from Isin (Hrouda 1987: Pl. 23:IB1454), Nippur (McCown and Haines 1967: Pl. 144:3, 4; Legrain 1930: Pl. 63:344, 346, 348, 350), and Diqdiqqa (Woolley and Mallowan 1976: Pl. 88:217, 218). AbD 88-305 is probably a third similar fragment. The last piece, AbD 88-299, also shows a woven pattern, but it is a little more complex and presumably is intended to depict some other type of material. Such representations have also been found on examples from Tell ed-Der (De Meyer 1978: Pl. 28:4) and Nippur (Legrain 1930: Pl. 64:354).

Model boats (fig. 54) are even more standardized than model beds. McCown and Haines (1976: 95) describe them as having a high stern with a curled tip and sometimes a mooring hole bored



Fig. 54. Model beds, boats, chairs, etc. (all reproduced at 75%). Seated figures: AbD 88-257, AbD 90-282; Model beds: AbD 88-238, AbD 88-251, AbD 88-292; Model boats: AbD 88-250, AbD 88-294; Model chair: AbD 87-216.

through the prow. The two examples from Mashkan-shapir fall into this category, one preserving the curled stern (AbD 88-294), seen on examples from Haradum (Kepinski-Lecomte 1992: fig. 157:3, 4), Isin (Hrouda 1977: Pl. 12:IB416) and Nippur (McCown and Haines 1967: Pl. 144:9–11), and the other a pierced prow like examples from Haradum (Kepinski-Lecomte 1992: fig. 157:2) and Nippur (McCown and Haines 1967: Pl. 144:10).

We have argued elsewhere (Stone 1993) that the iconography of model chariots is site-specific, unlike that of other terra-cottas. An examination of model chairs suggests that these objects also exhibit strong similarities in iconography within sites and differences between sites. In the same way that some sites (such as Kish and Mashkan-shapir) have yielded unusually large numbers of model

chariot fragments, so others may have unusual frequencies of model chairs. Ur (if Diqdiqqa is included), Nippur, and Girsu all have larger samples of model chairs than usual. The Nippur examples have the entrances to temples depicted on their backs, and those from both Ur and Girsu are dominated by representations of geese or swans.

Only one complete model chair was found at Mashkan-shapir, and this came from the 1990 excavations and is therefore outside the purview of this work. However, it may not be coincidental that the back of this chair showed the figure of Nergal, holding both the lion sickle and the lion mace, and had a pair of lion sickles on the seat. Three fragments that may be chair backs were found in the survey (fig. 54). One (AbD 87-216) seems almost certain, and this shows very shallow molding. It is similar to an example from Diqdiqqa (Woolley and Mallowan 1976: 88:212) in that it has an architectural facade. Of the other two fragments, one (AbD 88-298) is too worn for any decoration to be made out, and the other (AbD 87-50), of which the identification as a model-chair fragment is the most dubious, shows a line of guilloche. These data are too incomplete to allow any generalizations beyond this.

Even more clearly than the model chairs, decorated model chariot shields seem to express a limited number of designs at each site, which are generally unique to that site.⁵ At Mashkan-shapir, three main designs were identified: (1) the god Shamash, identified by the saw that he carries in his hand, of which eleven examples were found in surface survey (fig. 55: AbD 88-117, AbD 90-8; Stone 1993: fig. 3); (2) a lion-headed mace, of which there were four examples (fig. 55: AbD 88-169, AbD 88-76; Stone 1993: fig. 5); and (3) a pair of lion-headed sickles (fig. 55: AbD 87-107, AbD 87-58, AbD 88-113, AbD 90-580; Stone 1993: fig. 4), of which there were twelve examples. More than one mold was used to produce each of these types and slight variations in the representations of the each type can be seen.

In addition to the three main types, one model chariot shield (AbD 90-296) depicting the god Nergal (fig. 55), identified by the lion sickle and lion mace that he is carrying, was found in the course of the survey, and some other unique designs were found in the course of our excavations (Stone 1993: fig. 6). However, all of the designs found in the surface collection can be related either to the titular deity of Mashkan-shapir, Nergal, or Shamash, the god of Mashkan-shapir's sister city, Larsa. Of these designs, only the lion-sickle appears elsewhere—on the only chariot shield from Tell ed-Der. The association with that site is unexplained, unless the principal deity of Sippar-Amnanum could also be represented by a lion sickle (i.e., either of the gods associated with lion sickles—Nergal or Ishtar; Stone 1993: 93).

Five chariot shields have no visible decoration. In four of these cases, the shield is so eroded that no decoration could be made out even if it had once been present, but in the fifth (AbD 87-49) there is no doubt that the inside face is blank. This is the only published example of a blank chariot shield from this period, but since it is a surface find, it is possible that painted decoration, or perhaps appliqué, as on a piece recovered from excavation (Stone 1993: fig. 6d), has been cleanly removed.

In addition to the decorated shields, more than 50 bases of model chariots were found during the survey (fig. 56). A few of these preserved the bottoms of decorated shields. In addition, a total of 183 small terra-cotta wheels were found. These were the most common objects deemed worthy of recording individually, and many of these presumably once belonged to model chariots. Their distinctive shape made the wheels exceptionally easy to distinguish from the general ceramic scatter, which probably explains their high rate of recovery. They ranged in diameter from 6.5 to 12 cm.,

^{5.} The details of this argument been published elsewhere in an article that also includes the excavated materials from Mashkan-shapir (Stone 1993).



Fig. 55. Model chariots (photos reproduced at 75%; drawing at 25%). Shamash: AbD 88-17, AbD 90-8; Lionheaded mace: AbD 88-76, AbD 88-169; Lion sickles: AbD 87-58, AbD 87-107, AbD 88-113, AbD 90-580; Nergal: AbD 90-296; Undecorated: AbD 87-49.



Fig. 56. Model wheels and model chariot bases (all drawings at 33%). Chariot base: AbD 88-209, AbD 88-252; Small wheels: AbD 87-48, AbD 90-14, AbD 90-597, AbD 90-636; Large wheels: AbD 88-89, AbD 90-639.

and had hole diameters that matched the axle holes found on the chariot bases, between 0.5 and 1.8 cm. There were a further 22 wheels whose axle holes were substantially larger, some as much as 4 cm. or more in diameter. These wheels tended to have applied hubs, and one especially large example (AbD 88-89) also had a black painted band around it. We do not know what kinds of object these wheels might once have been attached to, but it seems impossible for them to have be-longed to the kinds of model chariot bases that have been recovered to date.

At Ur, wheels with the usual pronounced hubs but also with scalloped edges were apparently found (Woolley and Mallowan 1976: Pl. 90:244) and discs with similar edges were also found at Haradum (Kepinski-Lecomte 1992: fig. 158:1, 2), where they were interpreted as spindle whorls. No wheels or discs with scalloped edges were recovered from Mashkan-shapir.

Rattles (fig. 62)

Two rattles were recovered in the course of the Mashkan-shapir survey. One, AbD 88-152, had a bird shape, typical of examples from Ur (Woolley and Mallowan 1976: Pl. 90:237), Haradum (Kepinski-Lecomte 1992: fig. 158:8, 9), Uruk (Ziegler 1962: Pl. 44: 553–556), and Tell al-Dhiba'i (Mustafa 1949: Pl. 4:1). Close parallels to the other example, AbD 90-75, are more difficult to identify. Though similar in style to the pig rattles from Nippur (Legrain 1930: Pl. 43:310–311) and the sheep rattle from Bismaya (Banks 1912: 312), it seems to depict a bovid and is generally better modeled. It is complete and still rattles.

The rattles recovered from other Old Babylonian sites come from temples and shrines, palaces, and domestic areas. They may well have been no more than children's toys, but their presence in shrines, temples, and, to a lesser extent, palaces suggests that ritual use is the more likely interpretation.

Statuary (figs. 57–61)

Remains of terra-cotta statues of nearly life-sized humans and animals have been found at a number of Old Babylonian sites, and Mashkan-shapir is no exception. Only lions have so far been found at the smaller sites of Khafajah, Tell Harmal, and Haradum, whereas representations of humans and other animals were recovered in quantity at Isin. A single human foot fragment suggests that Nippur (Gibson 1978: fig. 17: 2) might yield similar material when excavations are conducted in the appropriate area and level.

The Mashkan-shapir examples are for the most part fragmentary but were found in such numbers and variety that they constitute an assemblage comparable to the Isin group. Isin has examples of humans, dogs, lamassu figures, and lions. The 80 fragments from the surface of Mashkan-shapir represent parts of humans, lions, horses, and perhaps dogs.

At both sites, the largest number of fragments are of feet and miscellaneous limbs. The latter are only occasionally identifiable specifically as, for example, a shin. Thirty-nine parts of limbs were recovered, all hollow on the inside (as were many of the Isin fragments; see, e.g., Hrouda 1977: Pl. 8:IB47). In some instances, one end was smoothed off, as though the limb was originally made of several pieces and fitted together over an internal framework, perhaps of wood. Similar evidence of these statues being made in sections is seen, for example, on the lip on the lion from Haradum (Kepinski-Lecomte 1992: fig. 152:1, 3), the flattened back on the head from Isin (Hrouda 1977: Pl. 9:IB634), and the straight lower edge of a head that, though purchased, probably also came from Isin (Abada 1974: object 2).

At Isin, twelve foot fragments belonging to a minimum of eight different anthropomorphic statues were found (Hrouda 1977: 40–41, Pl. 8; Hrouda 1992: IB1814), and at Mashkan-shapir ten human feet from at least seven figures were found. The feet varied considerably in quality of workmanship and size. AbD 87-279 (fig. 57)—and AbD 87-276 (fig. 58), which is probably the badly damaged right foot of the same statue—was beautifully formed, with the toenails, toes, and even joints clearly shown. This piece is unusual in neither resting on a plinth, as the Isin examples commonly do, nor having a flat base. Its bottom is as carefully modeled as its top, with a well developed arch. Three other pieces that include the toes (AbD 87-274, AbD 87-278, AbD 88-9) are cruder, with little attempt to show such details as toenails. A fourth, (AbD 88-159) is truly awful. All four



Fig. 57. Terra-cotta statuary (reproduced at 50%). Human foot: AbD 87-279; Human hand: AbD 88-216; Human head: AbD 87-270, AbD 87-272, AbD 88-266.

of these had flat bases (fig. 58). AbD 87-278 and AbD 88-159 were on plinths. All were of an adult human size, except AbD 88-9, which was a little smaller. We also recovered five ankle fragments (AbD 87-286 a–e), again with some variability in the sensitivity of the modeling (fig. 58). Of these, two were less than life size and all had flat bases.

Feet and limbs were not the only recognizable fragments of these figures. At Mashkan-shapir, as at Isin (Hrouda 1977: 42, IB149), part of a left hand (AbD 88-216) was found (fig. 57). This indicates that these figures did not always have their hands clasped on their breasts as terra-cotta plaques and figurines normally do. In no case, however, do we have any additional knowledge of the pose.

Parts of three heads were also recovered from Mashkan-shapir (fig. 57), all apparently depicting shaven males. The face, neck, and upper head of one half-size figure was recovered (AbD 87-270). Although the nose and mouth were badly eroded, the modeling on the ear, brows, and eyes suggests that the piece was originally executed with attention to detail. Like some of the feet, there was a hole for attachment to some kind of internal armature. Only part of the left side of the head preserved in a second piece (AbD 87-272), also half life-size. Here, instead of a well-modeled ear, there is only a hole. The third example (AbD 88-266) is only an eroded, but probably originally well-formed, ear of a life-sized head. The last two pieces were originally hollow.



Fig. 58. Terra-cotta statuary (reproduced at 50%). Human foot: AbD 87-274, AbD 87-276, AbD 87-278, AbD 87-286, AbD 88-9, AbD 88-159.

Lions similar to those found at Khafajah (Hill, Jacobsen, and Delougaz 1990: Pls. 59b, 60), Haradum (Kepinski-Lecomte 1992: fig. 152) and Tell Harmal (Baqir 1959: fig. 5) were also present at Mashkan-shapir (fig. 59). A life-sized paw (AbD 87-283) and the back of a leonine head (AbD 88-235) testify to their presence. On the Mashkan-shapir example the representation of the mane is more subtle than on the elaborate lions from Tell Harmal, but it is more carefully made than the example from Isin (Hrouda 1977: Pl. 9:IB 463). A third piece, AbD 87-282, may depict the rear



Fig. 59. Terra-cotta statuary (reproduced at 50%). Lion paw: AbD 87-283, Lion head: AbD 88-235, Dog/lion paw: AbD 87-282, Horse's leg: AbD 87-281, Horse's hoof: AbD 87-280.



Fig. 60. Terra-cotta statuary(reproduced at 33%). Bird breast?: AbD 88-27; "Scapula": AbD 88-53; Body fragment: AbD 88-256.



Fig. 61. Terra-cotta statuary (reproduced at 33%). Horse body fragment?: AbD 87-285a; Other body fragments: AbD 87-284, AbD 88-287.

paw of a small lion on a plinth, but it more closely resembles the representations from Isin that are described as dog's paws (Hrouda 1977: Pl. 9:IB5a–b). This paw is certainly not as obviously feline as the rear paws of the Tell Harmal figures, but neither are the less well-modeled examples from Khafajah and Haradum. Because there are no other fragments consistent with a representation of a dog, it is not unreasonable to assume that a lion was intended. It seems unlikely, however, that this was part of the same figure to which the other paw and the head belonged. The plinth of the mystery paw includes traces of the place where the front paw of this animal was broken off and is at a much smaller scale than the other preserved pieces.

The most impressive figure at Isin is a lamassu statue, of which only a fragment has been recovered (Hrouda 1977: Pl. 9 IB 150). At Mashkan-shapir, the figure of a life-sized horse must also have been quite imposing (figs. 59–61). Two, and possibly three, fragments were found: a leg (AbD 87-281), a hoof on a plinth (AbD 88-280), and perhaps part of the breast (AbD 87-285a; fig. 61). To judge by the hoof and leg, this horse (or horses) probably stood some fourteen hands high and was of very high quality workmanship.

Whether or not the body fragment is correctly identified as part of the horse's breast, there are ten pieces that almost certainly formed part of the bodies of the statues whose limbs and heads have been described above (fig. 61). They were between 1.5 and 3 cm. thick, and the bodies appear to have been hollow, like the lions from Haradum, Khafajah, and Tell Harmal. Some pieces, including the putative horse breast, have smooth exteriors, but others show modeling, perhaps indicating fur or fringes on clothes. Many were pierced, again suggesting that they were designed to be attached to some kind of armature.

Three other nondescript pieces (fig. 60)—neither found near the other fragments of terra-cotta statuary—may also be body parts. One (AbD 88-27) is conceivably the breast of a bird of some kind, with the head broken off, while another (AbD 88-53) resembles nothing so much as a scapula.

The question arises regarding what kind of sample the few preserved pieces of broken ceramic sculpture represent. Counting the numbers of right and left feet, gauging the different scales to which the figures were made, and estimating overall quality of modeling can establish the minimum number of individual statues represented. This process gives a minimum of seven humans, one lion, one lion/dog, and one horse. Given the fragmentary nature of the surface remains, the original assemblage was likely to have been substantially larger, especially if, as seen in other sites, such statues came in pairs.

What did these statues look like when they were whole? The evidence for joins between segments and of holes within the bodies to attach to an internal armature suggests that when on display the terra-cotta may have had some kind of coating to hide the holes and the joints. If so, the bald heads of the Mashkan-shapir human figures might even have had applied hair, beards, and so on. Against this hypothesis are the details of the manes on the lions and occasional traces of paint on examples from sites other than Mashkan-shapir. To modern eyes which consider these as art objects, many seem too crude to have been used to decorate and guard the entrances to temples, but to the Mesopotamians, they were probably more important for their symbolic significance, which can transcend our standards of beauty.

Miscellaneous Objects (fig. 62)

There were a number of less common and, in some instances, curious pieces among the surface finds, of which perhaps the most interesting were two baked clay axes. One (AbD 88-39) is a small double axe similar to examples mentioned (but not illustrated) from Nippur (McCown and Haines 1967: 102). At least one fragment from Nippur came from a level dating to the Old Babylonian period. Another double axe from Tello (de Genouillac 1934-36: Pl. 44:3c) is said to come from an Uruk-period context. The second Mashkan-shapir piece (AbD 88-32) is a single axe with a large curved blade. Its closest Old Babylonian parallel comes from Isin (Hrouda 1977: Pl. 45:IB1811), but the Isin example has a larger blade and greater separation between the haft hole and the springing of the blade. In shape, our piece more closely resembles 'Ubaid examples from Tell Uqair (Lloyd and Safar 1943: Pl. 29). Other Old Babylonian clay axes have been reported from Ishchali (Hill, Jacobsen, and Delougaz 1990: 147, 142; not illustrated). It is apparent that baked clay axes were manufactured in Mesopotamia over a period ranging from the fourth millennium to the second millennium, and thus we cannot date our examples confidently. However, given the number of reports of clay axes from Old Babylonian contexts compared to their relative infrequency in the Uruk period, and the overwhelmingly Old Babylonian composition of the Mashkan-shapir assemblage generally, it seems most likely that they date to the second-millennium occupation there.

Too few examples of baked clay axes have been recovered in context to understand their associations, but these objects must surely have had cultic significance. Even though they are well fired, they can hardly have been utilitarian. Since weapons of various kinds are associated with gods, perhaps these axes were used to represent particular deities under certain circumstances.

The other miscellaneous baked objects are more mundane. Five spindle whorls were recovered from Mashkan-shapir: three (AbD 90-301, AbD 88-28, and AbD 90-622) lentoid and two (AbD 90-584, AbD 87-236) plano-convex. All five have counterparts at Nippur (McCown and Haines 1967: 111). A sherd (AbD 88-242), carefully chipped into a circle and pierced with a hole drilled through the middle, may also have been used for spinning. The inside of the hole showed signs of wear. There were also two baked clay discs, one with a single hole on one side (AbD 87-128), and the other with at least two (AbD 88-270). Two similar pieces found at Nippur are described as



Fig. 62. Miscellaneous terra-cotta objects (reproduced at 33%, except as noted). Rattles: AbD 88-152, AbD 90-75; Clay axe: AbD 88-32, AbD 88-39; Spindle whorl: AbD 87-236, AbD 88-28, AbD 90-584; Disc: AbD 87-128; Kiln spacer: AbD 90-557 (reproduced at 50%); Sickle: AbD 87-29.

loom weights, but the records do not indicate whether they were made of stone or baked clay (Stone 1987: 167 [3D226], 176 [3D621]).

There are two additional enigmatic baked clay finds. One (AbD 88-141) was probably a weight of some kind. Conceivably it is an unusual, biconical spindle whorl, but the small size of the hole that pierces the object—less than 1 mm. in diameter—would argue against this interpretation. Normally, holes through spindle whorls range from 4 mm. to 9 mm., and the hole through the pierced sherd was 2 cm. The second object (AbD 88-258) resembles nothing so much as a terracotta pulley or a model wheel with a split rim. No similar object has been reported elsewhere, and there is nothing to suggest its function.

Metals

It is more difficult to date metal objects than terra-cottas because copper and bronze continued in use in the Partho-Sasanian period, at least for decorative objects and coins. Nevertheless, since iron was the common material for tools in Partho-Sasanian times, we are probably safe in assuming that most copper/bronze tools and weapons date to the Isin-Larsa/Old Babylonian occupation of the site. Indeed, because the majority of remains from the site come from the second millennium, it is highly likely that most of the copper/bronze jewelry recovered dates from that period as well.

Although analyses of metals from Mashkan-shapir have been conducted (see chapter 5), of necessity these were based on fragments, and we cannot say whether any of the particular pieces discussed below are of copper or bronze. The analysis of the copper fragments, which was conducted by MASCA, indicates that both copper and bronze were in use at the site, with some pieces showing an intermediate level of tin, perhaps due to the process of melting together both copper and bronze scrap (see chapter 5, table 3). Analyses of slag samples suggest that most workshops were remelting previously smelted metals, although we recovered one partially melted ore fragment.

Most classes of metal objects known from other Old Babylonian sites have been found on the surface of Mashkan-shapir, with the exception of a few rare and fragile types, such as scale pans or tweezers, which are unlikely to have survived surface exposure in a recognizable form. A few metal objects from Mashkan-shapir have no good parallels elsewhere.

Copper/Bronze Vessels (fig. 63)

Complete or nearly complete profiles of three copper/bronze bowls were recovered in the course of the survey, and other thin flat pieces of copper may be remains of similar vessels. Two of the reconstructable forms are shallow bowls similar to examples at other contemporary sites. One is extremely shallow (AbD 87-256) and resembles bowls from Ur (Woolley and Mallowan 1976: Pl. 100:1) and Tell ed-Der (De Meyer: 1984: Pl. 26:D2301, D2503). The second is slightly deeper, with a thickened rim (AbD 87-132). This has parallels at Ur (Woolley and Mallowan 1976: Pl. 100:2), Nippur (McCown and Haines 1967: Pl. 108:5, 6) and Tell ed-Der (De Meyer 1984: Pl. 26:D2505). Most of the rim and all of the base of the third piece (AbD 87-306) were preserved, with a small gap in between, which cannot be bridged. This is a closed vessel of a less common form, but its base finds a parallel at Uruk (Strommenger 1963: Pl. 29e) and the entire bowl was probably similar to one from Tell ed-Der (De Meyer 1984: Pl. 26:D4189).

Copper/bronze vessels have rarely been found in domestic contexts in Old Babylonian Mesopotamia. A number were excavated in the large temple at Ishchali, and others come from palaces or graves associated with less exalted members of the community. Thus, all members of society appear to have had access to these goods, which were probably meant as much for show as for their utilitarian qualities, but in the context of either large public institutions or interment of the dead. Clearly there are issues of preservation to be considered. Copper/bronze vessels are very delicate and only likely to survive under optimal conditions. Since the best preservation tends to be in graves, it is most likely that our bowls came from such contexts.

Bracelets (fig. 64)

A number of bracelet fragments were found on the surface of Mashkan-shapir, most no more than portions of a copper/bronze circle about the size of a human arm. Only one was nearly complete (AbD 88-92), and it displays corroded finials in the form of snake or lion heads. Similar brace-lets have been found at Tell ed-Der (De Meyer 1984: Pl. 27:c1).

One copper/bronze bracelet fragment (AbD 90-700) is quite different from the others and is perhaps associated with the later occupation of the site. Around a central bar small links were applied, making an attractive herringbone pattern. Such intricacy is seen in the second millennium in



Fig. 63. Copper/bronze vessels (reproduced at 100%).

gold and other precious metals, but this would be by far the most elaborate copper-bronze piece of the era if it were Old Babylonian. Since we have no parallels for either the second millennium B.C. or the first millennium A.D., it cannot be dated with any confidence.

Rings (fig. 64)

Copper/bronze rings are at least as common at Mashkan-shapir as at other Old Babylonian sites. Twenty-two were found in the survey, fifteen of which were either complete or nearly complete. The vast majority of the the complete rings had internal diameters between 1.4 and 1.6 cm., with only one as large as 1.8 cm. These sizes suggest that they were designed to be worn by women on their fourth fingers, since even if human stature was lower then than today, it is unlikely that the finger sizes of laboring men would have been much smaller than 2 cm. There were, however, two

examples of much smaller rings, one with an inside diameter of 0.8 cm. and the other of 0.6 cm. It is possible that these rings were designed to be worn by children.

Like examples from other sites (McCown and Haines 1967: Pl. 153:6; De Meyer 1984 Pl. 27: C4b, B6, B7), all of the copper/bronze rings were made in the shape of a spiral, with the ends slightly overlapping. Analysis of the Tell ed-Der examples revealed that the majority were made of bronze (De Meyer 1984: 109–11), although a few were of pure copper.

Earrings (fig. 64)

A number of fragments of bent copper/bronze wire resembling pieces described as earrings elsewhere (McCown and Haines 1967, Pl. 151:5) were recovered. Three examples were quite plain (AbD 87-186, AbD 90-551, AbD 90-651), but the fourth (AbD 90-633) was very well preserved and had wire wrapped around both ends. Its excellent condition and unusual type suggest that this may date from the later, Partho-Sasanian, occupation of the site or perhaps even later, especially since it was found in the vicinity of a late canal.

Pins (fig. 64)

Pins with decorated ends are common artifacts at Old Babylonian sites, and the five found at Mashkan-shapir belong to the simpler types of such objects. Two (AbD 87-149a and b) have plain round ends like examples from Ur (Woolley and Mallowan 1976: Pl. 98:U17634) and Nippur (McCown and Haines 1967: Pl. 152:7). The other three (AbD 90-256, AbD 90-376, and probably AbD 90-709) have more squared off ends, similar to one found at Haradum (Kepinski-Lecomte 1992: Pl. 164:9).

Other Decorative Pieces (fig. 64)

Several pieces of worked metal were found on the surface of Mashkan-shapir, most of which have no parallels elsewhere. These include: a copper/bronze ball (AbD 87-163) without attachments; a pierced, diamond-shaped finial (AbD 87-90); the remains of a crescent (or perhaps a ring) that had been attached to some larger item (AbD 90-658); some twisted copper wire (AbD 87-190); and two copper/bronze beads (AbD 90-39 and AbD 90-746). While most Old Babylonian beads were made of stone or shell (see below), there are two examples of copper/bronze beads published from Haradum (Kepinski-Lecomte 1992: 383). Both are described as cylindrical, however, whereas our examples are both more or less spherical.

Four small flat discs with tangs (AbD 88-162, AbD 88-322, AbD 90-293, and AbD 90-316) are not datable. Were it not for the tangs, we would have assumed that they were the copper/bronze coins used for small change in the Partho-Sasanian period and later. They may have been pieces of jewelry, but no examples of such items have been recovered from other Old Babylonian sites.

Clearly dated to the second millennium B.C., is a small figurine of a seated dog (AbD 90-234) for which there are parallels from post-Old Babylonian levels at both Nippur (Gibson 1978: fig. 16:3) and Isin (Hrouda 1977: Pl. 12:IB101; Hrouda 1981: Pl. 27:IB800, IB1233, IB779, IB1047). At both sites, these objects are associated with temples dedicated to Gula. The presence of this copper/bronze dog, together with the figurine holding his head and stomach (AbD 88-297) suggest that Mashkanshapir also had a Gula temple.

The most ornate piece of bronze sculpture that we found, a complete bust of a woman (AbD 87-294), 8 cm. in height, remains something of a mystery since it has no parallels in either the second



Fig. 64. Copper/bronze decorative objects (photographed objects at 50%). Bracelet: AbD 88-92, AbD 90-700; Ring: AbD 87-141, AbD 87-176, AbD 90-524, AbD 90: 589; Earring: AbD 90-633; Pin: AbD 87-149; Decorative: AbD 87-90, AbD 87-190, AbD 90-39, AbD 90-658; Disc with tang: AbD 88-322; Dog figure: AbD 90-234; Human figure: AbD 87-294; Coin: AbD 87-148; Silver ring: AbD 87-158.

millennium B.C. or the first millennium A.D. The object is unbroken, with a hollowed-out back. Either this is the front section of a whole bust made in two parts, or it was designed to be attached to something. The figure rests on a small plinth beneath the breasts and could possibly have been attached to a piece of furniture. On the basis of its style, it seems most likely that this bust should be dated to the later occupation of the site (presumably pre-Islamic), but the absence of anything remotely similar from either Dura Europos or Seleucia suggests that it would be unusual even then. Its presence at a small rural settlement of the sort represented by Tell Abu Duwari in the first millennium A.D. also seems peculiar. Thus, both the dating and significance of this piece remain a mystery.

Piercing Tools (fig. 65)

Most surviving tools from Old Babylonian sites seem to have been made of copper or bronze. Especially common at Mashkan-shapir were various kinds of spatulas and chisels. Three examples, designated spatulas, were broad at one end (AbD 87-175, AbD 87-117, AbD 88-176), gently tapering to form a sharp edge. The four pieces where the working end was not broadened (AbD 87-174, AbD 87-184, AbD 90-363, AbD 90-306), designated chisels, were all beveled from a single side. Another piece (AbD 90-655) is similar, except that the shaft is somewhat curved and very slightly broadened. Its extraordinarily good condition may be an indication that some alloy not commonly used in the second millennium is involved here and that this piece should be dated to the later occupation of the site.

Another piece (AbD 87-240) may be the blunt end of a chisel, although the object is larger than the other chisel-like pieces recovered from Mashkan-shapir and finds no parallels from other Old Babylonian sites. It tapers slightly toward a flaring, blunt end, which seems to be designed to receive the blows of a mallet. In form, this is similar to an object from Ur (Woolley and Mallowan 1976: Pl. 98:U6686), except that the end is blunt rather than sharp on the Mashkan-shapir piece.

Other clearly identifiable tools include a complete awl (AbD 87-171), similar to one from Haradum (Kepinski-Lecomte 1992: fig. 164:10), and most of a needle (AbD 90-520). Needles of much the same size and design have been found at a number of other Old Babylonian sites, notably Haradum (Kepinski-Lecomte 1992: Pl.164:7), Nippur (McCown and Haines 1967: Pl. 153:29, 30), Khafajah (Hill, Jacobsen, and Delougaz 1990: Pl. 65g–k) and Uruk (Strommenger 1962: Pl. 18d). We also recovered five fragments with pointed ends representing either the points of similar needles or nails. Eleven fragments of the shafts of various kinds of spatulas, chisels, awls, and needles were also found. They vary from 0.5 to 1 cm in diameter, some circular in cross-section, some square, and some going from one to the other. One is slightly curved, but the rest are straight. In addition to these more substantial fragments, numerous pieces of copper/bronze, some doubtless parts of similar objects, were collected as part of our general recovery program of copper/bronze from the surface of the site. Where the form was deemed indeterminate, these fragments were simply weighed on a square-by-square basis.

Blades (fig. 65)

Blades of various kinds constituted another major category of copper/bronze tools. Most of the identifiable pieces preserved the end where the blade was attached to a haft, usually by means of a number of rivets that pierced the blade itself. Seven such pierced-blade fragments were recovered, and they find good parallels with examples from Uruk (Strommenger 1962: Pl. 18e) and Nippur (McCown and Haines 1967: Pl. 155:6). These parallels suggest that the Mashkan-shapir examples were once part of knives or daggers.

Another type of metal blade common in the early second millennium B.C. was the sickle, of which we found five fragments (AbD 88-34, AbD 88-199, AbD 88-296b, AbD 90-308, AbD 90-571). They are parts of blades of a type known from Tell Sifr (Moorey 1971: Pl. 86:32, 33), Khafajah (Hill, Jacobsen, and Delougaz 1990: Pl. 63f) and Haradum (Kepinski-Lecomte 1992: fig. 162:3), which were not hafted in the same manner as knives.

There is only one example (AbD 88-296a) of a third type—a long, thin blade. While this superficially resembles an object from Khafajah (Hill, Jacobsen, and Delougaz 1990: Pl. 65e) described as a chisel, our example lacks a chisel tip. Perhaps there are better parallels to be seen in the straight portion of curved blades reported from Haradum (Kepinski-Lecomte 1992: fig. 165, 5) and



Fig. 65. Copper/bronze tools (reproduced at 33%). Spatula/chisel: AbD 87-240, AbD 90-306, AbD 90-363, AbD 90-588, AbD 90-655; Awl/needle: AbD 87-171, AbD 87-291, AbD 90-69, AbD 90-520; Blade: AbD 88-34, AbD 88-179, AbD 88-296; Hinge?: AbD 87-295; Beer filter?: AbD 90-344; Spade: AbD 87-74, Rivet: AbD 90-596; Cotter pin: AbD 90-640; Misc: AbD 90-387.

Tello (de Genouillac 1934–36: Vol II, Pl. 93:2). The preserved part of our blade does not appear to have been sharpened, but if it were indeed part of such an object, perhaps only the now missing curved portion had a cutting edge.

There were seven pieces of flat copper—some composed of smaller, joining pieces found in close proximity—plus a much larger number of smaller fragments that were simply collected or weighed. Some of these may have been from blades, but individually they were indistinguishable from pieces of copper/bronze vessels or spears.

Fishing Equipment (fig. 66)

Copper/bronze harpoons and fishhooks were also recovered. Both of the fishhooks (AbD 87-237 and AbD 88-115) had unpierced, flattened ends for attachment to the line, similar to an example from Nippur (McCown and Haines 1967: Pl. 153:16). On AbD 87-237 and the Nippur hook, the broad side of the flattened surface was on the same plane as the curvature of the hook; on AbD 88-115, it was perpendicular. Only on AbD 88-115 was the barb preserved.

The two harpoons (AbD 87-75 and AbD 88-102) were more standardized. AbD 87-75 has well-formed barbs and is similar to examples from Haradum (Kepinski-Lecomte 1992: fig. 153:5)



Fig. 66. Copper/bronze weapons (all reproduced at 50%). Fish hook: AbD 87-237, AbD 88-115; Harpoon: AbD 87-75, AbD 88-102; Arrowhead: AbD 87-221; Spearpoint: AbD 87-51, AbD 88-246, AbD 90-50, AbD 90-529.

and Ur (Woolley and Mallowan 1976: Pl. 98:U17619). AbD 88-102's streamlined form more closely resembles another example from Ur (Woolley and Mallowan 1976: Pl. 98:U17616).

Weapons (fig. 66)

Both arrowheads and spear points were discovered in the surface survey. The two arrowheads (AbD 87-221 and AbD 88-268) are quite small, resembling examples from Nippur (McCown and Haines 1967: Pl. 154:12). The seven spear points are also quite simple. Three (AbD 87-51, AbD 90-50, AbD 90-529) even lack a central ridge, like the most basic examples from Khafajah (Hill, Jacobsen, and Delougaz 1990: Pl. 64i) while the others (AbD 87-109, AbD 87-120, AbD 88-246, AbD 90-340) conform to a type of plain spear point with a central flange (Hill, Jacobsen, and Delougaz 1990: Pl. 64g).

Miscellaneous Copper/Bronze Fragments (fig. 65)

A number of other pieces of copper/bronze tools discovered are unique examples, sometimes with and sometimes without clear parallels elsewhere. One may be the remains of a hinge (fig. 65, AbD 87-295), but if so is quite different from the published hinges from Mari (Parrot 1959: 87–88, Pl. 33: 704–7, fig. 66). Hinges at other sites, such as Ur, were made of stone and are not comparable to this example. The most likely alternative interpretation is that it is an axe, similar to one from Ur (Woolley and Mallowan 1976: Pl. 99: U16699-1), but the metal seems too thin for this purpose, the curved flange too narrow, and the blade does not have the characteristic axe-shape of the Ur example. In spite of its dissimilarity to the Mari examples, we still prefer to consider it a hinge.

A second piece is a thin sheet of copper/bronze rolled into a cone and pierced a number of times from the outside (AbD 90-344). An almost identical object is reported from Tell Owessat (Jacob-Rost, Wartke, and Wesag 1983: Pl. 16), and another possible example is reported from Tello (de Genouillac 1934–36: Vol II, Pl. 93e). A tube whose end was fashioned into a similar cone and then pierced was found at Tell ed-Der (Gasche 1989: Pl. 42:2). Gasche tentatively identifies this object as a tag designed to close the end of a lace or belt, but the absence of depictions of such decorated belt ends in Mesopotamian art makes this interpretation improbable to us. The fracture of both the Mashkan-shapir example and the example from Tell Owessat at the point where the cone begins, and the bending of the Tell ed-Der example at this same point, suggest that these objects might have been metal filters placed on the end of straws for use in beer drinking. This suggestion is strengthened by the Tell ed-Der example, which was found in a kitchen.

AbD 87-74 is probably the remains of a spade blade, similar to examples from Tell Sifr (Moorey 1971: 68–72) and Nippur (McCown and Haines 1967: Pl. 154:23). Although our piece is very fragmentary, it exhibits the typical folded blade and curved outline. AbD 90-596 seems to be a rivet. No rivets from elsewhere in Mesopotamia have been published as such, but many are seen in place on the blades of spades and knives. The remains of a copper/bronze cotter pin (AbD 90-640) has no published parallels, but there is no reason to suppose that the Mesopotamians were incapable of appreciating the utility of such an object.

Other pieces are more enigmatic. A copper bar (AbD 87-151) might have been part of almost anything, and the same can be said of the five fragments of curved copper/bronze rods. Two other pieces (AbD 90-289, AbD 90-387) have tangs that suggest that they were once attached to something else. AbD 90-387 is so well preserved that a post Old Babylonian date seems likely.

Coins (fig. 64)

Some forty small, flat discs were found, all between 8 and 18 mm. in diameter, and between 1 and 3 mm. thick. We assume these to be coins dating to the Partho-Sasanian or later periods, but on only three is there any trace of a design, including AbD 87-148, and in no instance is this clear enough for an identification. The four discs with tabs noted above are of more or less the same size range as these and are probably also coins, but coins that had not been completely finished off.

Objects in Other Metals

A handful of objects were made of metals other than copper/bronze. A lump of lead (AbD 88-107) could be Old Babylonian in date, but the six fragments of iron, the function of none of which is identifiable, are certainly to be dated to the first millennium A.D. occupation of the site. So too is a ring, perhaps of low quality silver, set with a brownish-red stone, perhaps of glass (AbD 87-158, see fig. 64). This object was discovered in a broken slipper coffin by a surveyor placing a stadia rod, so both style and context testify to its late association. Two other pieces, one a small decorative disc (AbD 88-285) and the other perhaps the blunt end of a decorative bronze pin (perhaps of brass; AbD 90-500; fig. 64) are probably of recent manufacture.

Stone

Stone Bowls (figs. 67 and 68)

Although stone bowls are not uncommon at other Mesopotamian sites, they seem to be unusually abundant at Mashkan-shapir. It may be that this seeming high frequency is a result of collection bias: stone bowl fragments are easy to spot on the surface of a site, and we recorded fragments as well as whole vessels, whereas recording generally appears to favor complete vessels at other sites. It is possible, even likely, that some of the stone bowl fragments recovered from Mashkan-shapir date to the Uruk rather than the Old Babylonian occupation. Nevertheless, the recovery of more than 40 diagnostic (rim and base) fragments and some 20 body sherds provides a quite substantial sample, most of which dates to the early second millennium B.C.

By far the most common form was a shallow bowl with plain rim and flat base, similar to examples from Nippur (McCown and Haines 1967: Pl. 107:4). One whole vessel (AbD 88-138), eleven rim fragments, and eight base fragments can be assigned to this type. While there is some variation in whether the sides are straight or curved and some differences in size (rim diameters varied from 12 to 25 cm., base diameters from 3 to 16 cm.), by and large the simplicity of the lines joined these vessels into one group. Related to these is a group of bowls distinguished by steeper sides, to which one complete vessel (AbD 88-160), two rim fragments (AbD 88-160, AbD 90-258), and two base fragments belong. These have rim diameters varying between 8 and 14 cm. and base diameters of approximately 6 to 7 cm. These bowls have some affinities to an example published from Nippur (McCown and Haines 1967: Pl. 107:12).

Also quite common at Mashkan-shapir are deep, straight-sided bowls. Three examples (AbD 87-182, AbD 88-281, AbD 88-320) have plain rims, like bowls from Nippur (McCown and Haines 1967: Pl. 107:13) and Ur (Woolley and Mallowan 1976: Pl. 100, stone bowl examples 7–9). One of the Mashkan-shapir pieces (AbD 87-182) is incised with concentric circles, a type of decoration seen on bowls of different form at Ur (Woolley and Mallowan 1976: Pl. 100, stone bowl 6). Two other examples (AbD 87-2, AbD 90-246) had flaring rims very like a piece from Nippur (McCown and Haines 1967: Pl. 107:11). Three base fragments (AbD 90-1, AbD 90-362, AbD 90-590) once belonged to this deep, straight-sided bowl type.

Mashkan-shapir also yielded a number of pieces with slightly more complex forms that have not been reported elsewhere in Mesopotamia. Four pieces had fine, slightly out-turned rims (AbD 87-68, AbD 87-209, AbD 90-21, AbD 90-94), one of which included a groove beneath the rim (AbD 87-68). One other sherd (AbD 90-648) exhibits the kind of flaring rim associated with the steepsided vessels described above, except that in this case it was on a bowl.

There were also fragments of a few closed vessels. Rare examples of these have been reported from Nippur (McCown and Haines 1967: Pl. 107:7, 8), but this kind of stone vessel was not common in the Old Babylonian period. Of the Mashkan-shapir pieces, one (AbD 90-279) was a pot with a rim similar to a Nippur example (McCown and Haines 1967: Pl. 107:7), while the other was more in the shape of a bottle (AbD 87-258). Enough of the sides of two bases (AbD 90-279, AbD 90-480) have been preserved to indicate that they must have been part of closed vessels.



Fig. 67. Stone bowls (reproduced at 50%).



Fig. 68. Stone vessels (reproduced at 50%).

We also found parts of two platters, one (AbD 87-491) pierced around the rim like a quite different kind of vessel from Ur (Woolley and Mallowan 1976: Pl. 100: stone bowl 2), and the other (AbD 90-21) part of a large basalt bowl. The latter once had three feet and is very close to an example from Haradum (Kepinski-Lecomte 1992: fig. 174:6) and a vessel from Tell ed-Der (Gasche 1989: Pl. 42:1), although the latter has higher feet.

Thus, most stone bowls from Mashkan-shapir are of simple forms that are common elsewhere, although some finer and more unusual forms were also found. Our field identifications, which could doubtless be improved upon by laboratory analysis, indicate that the types of stone in question are, for the most part, not unusual. The majority were of the kind of banded quartzite that is commonly called alabaster. Most common is a yellowish variety that often has brown or orange streaks. All but one of the seventeen examples came from plain bowls with either a deep or shallow profile. Next in popularity is a white variety, where banding, if present, shows up as differences in the degree of translucence. Here, shapes are generally more complex, including the base of one closed vessel, fragments of deep, straight-sided vessels, and the only inscribed piece (AbD 87-10, fig. 103). Only six examples of a third, rose-colored variety of "alabaster" were recovered, and these also show slightly more complex shapes than those in the yellowish stone.

Other stones were less common. There are six exemplars in a black-and-white stone, probably similar to the black-and-white granite reported from Ur. All of the diagnostic pieces made of this stone evidence somewhat greater complexity in rim-form than the yellowish quartzite vessels. The six examples of limestone bowls also show variability in form and include a pierced tray and a bowl with out-curved rim. Our two marble exemplars are closed forms without parallel elsewhere, and the two pieces of steatite are both of quite simple bowls. There were nine pieces of various other kinds of stone—generally quite striking. While some of these have quite simple shapes, the more complex shapes were also associated with these materials.

This quick survey suggests that the most common materials—white and especially yellow/ brown quartzite—were for the most part used for making very simple shapes, while the more exotic stones—especially black and white granite and marble—were reserved for the production of more elaborately shaped vessels, even though they were more difficult to work. This relationship between vessel form and material is shown in Table 4.

Vessel Form	Yellow Quartzite	White Quartzite	Rose Quartzite	Black & White Granite	Limestone	Steatite	Marble	Other
Simple Shallow Bowl	3	2	3	1	1	1		2
Shallow Bowl Base	7			1	1			
Deep Simple Bowl						1		2
Deep Bowl Base					1			
Simple Straight Sided Bowl	1	1						
Straight Sided Base	2	1						
Straight Sided Bowl with Rim		2						
Shallow Bowl with Rim			2	1	1			1
Pot	1							
Closed Vessel							1	
Closed Base		1					1	
Platter							1	
Pierced Rim					1			
Decorated Rim								1
Inscribed Sherd		1						

Table 4. Stone Vessel Forms

Cylinder Seals (fig. 69)

Twenty cylinder seals and seal fragments were recovered from the surface of Mashkan-shapir. They are made of a variety of materials, including hematite, carnelian, lapis lazuli, and steatite. Some, especially those of hard stones like hematite and carnelian, are well preserved, but others are so badly eroded and weathered that no engraving remains. In general, the quality of workmanship of the Mashkan-shapir seals is inferior to that of the best Old Babylonian workshops, such as those at Sippar (al-Gailani Werr 1988: 54). Instead, we find a quite lively style with some unusual characteristics and a few re-cut examples. The Mashkan-shapir seals also tend to be somewhat on the small side. Characteristically for an Old Babylonian group, the majority of the designs are in the general class of presentation scenes, with a smaller number depicting scenes of combat.

On five seals little or no engraving is preserved. Two (AbD 87-202, AbD 90-559) are so completely eroded that it is impossible even to be certain that they are, in fact, cylinder seals. With the



Fig. 69. Cylinder seals (reproduced at 100%). Worship of an enthroned deity: AbD 87-7, AbD 87-213, AbD 90-560, AbD 90-570; God with an extended arm: AbD 87-94, AbD 87-99, AbD 88-56; Combat: AbD 90-516; Nude goddess: AbD 90-455.

others (AbD 90-716, AbD 87-217, AbD 87-214), the few surviving traces of engraving are too worn to reveal any details. AbD 87-214 and AbD 87-217 are made of steatite and the others are of yet softer and more friable stones. Three other seals were so fragmentary that little could be reconstructed of the original design. AbD 87-265, part of a very nicely worked seal of lapis lazuli, is only a chip showing a horned crown and a sickle. AbD 90-582 is also a fragment of what was once a well-engraved hematite seal and shows a pair of legs, presumably belonging to a kilted male figure, with part of an inscription behind him (fig. 108). AbD 87-36 is a somewhat worn chip of a soap-stone seal, on which what may be a monkey can be made out, but little more.

Five seals depicting the worship of an enthroned deity were found—two of crystal, one of chlorite, and two of fine-grained black or dark brown stone, perhaps the calcite described by Collon (1986: 7). The best preserved, AbD 90-560, is quite standard in showing a female deity leading a worshiper, with a crescent moon, monkey, rod, and ball and pot as fill motifs. What is unusual is the inscription. Its two lines, placed in a box, give the names of Shamash and Aya. Though admittedly the most common inscription on Old Babylonian seals, this is the only example in which the name of Aya comes first in a two-line inscription.⁶ Moreover, other examples usually have a lion or dog engraved beneath the inscription (Collon 1986: Pl. 5:3, 9; Pl. 9:69; Pl. 10:96; Pl. 27:367; Porada 1948: Pl. 49:329, Pl. 51:347e; Hrouda 1977: Pl. 22:31), whereas here there is a dancing dwarf, oriented at right angles to the main presentation scene. There is one known instance where the dog is accompanied by such a dwarf, but he is posed the right way up (Porada 1948: Pl. 50: 343).

A second, very worn example of a presentation scene (AbD 87-213) also shows a female deity leading the worshiper into the presence of the seated god. This seal is too poorly preserved for more details to be discerned.

AbD 87-77 and AbD 90-570 also depict the worship of a seated deity, but in this case the more common Old Babylonian design with the suppliant goddess standing behind the worshiper is shown. One fragmentary piece again includes part of a partially preserved inscription (fig. 106). Only the barest traces of whatever was engraved beneath the inscription are preserved. They are not inconsistent with the depiction of a dog, but if so, the animal is facing right, away from the seated god (Collon 1986: Pl. 5:9), instead of the more common position, facing the deity. AbD 87-7 is too badly worn to reveal more than a seated figure facing a standing figure.

Three seals, two of hematite and one of carnelian, feature the god with extended arm (Collon 1986: 25). AbD 87-94 and AbD 87-99 show this god in the ascending posture, not seated, as is more common. Both face a male figure who has generally been interpreted as a king, in view of his short robe and turban headdress, but in neither of these instances does he have the customary royal stance (Collon 1986: 36). Instead, his arm is raised in front of his body. This pose is not unprecedented (Collon 1986: Pl. 23:302), but it is extremely rare. The recovery of two examples (representing 10% of our surface sample), both with the god with extended arm in ascendant position, suggests local particularism. The two seals are otherwise strikingly different from each other. While AbD 87-99 is very simple, with a second figure (perhaps a god) standing behind the "king," AbD 87-94 shows only the two figures, with the rest of the spaced packed with fill figures: human head, fish, frog, dancing dwarf, ball and staff with pot, crescent standard, and even a seated goddess.

AbD 88-56, consisting of two joining fragments found 40 m. apart, may also depict the god with extended arm, but not enough remains to be certain. Of the two preserved figures, one is in royal posture and the other is a deity; they stand back-to-back on the segment we have. The front of the deity is broken off, but the feet of another figure facing him are preserved. It appears that the god was either holding a standard, or else a ball and staff separated the two facing figures. A disc and crescent fill the space in front of the figure in royal position.

Two seals, both probably of chlorite, show scenes of combat. AbD 90-516 exhibits themes familiar from other Old Babylonian seals: a kneeling man and a goat or gazelle, each suffering defeat at the hands of a lion-griffin. This is close to an example in the British Museum (Collon 1986: Pl. 13:132). AbD 87-124 (fig. 105) displays a similar scene but is probably somewhat earlier in date in that representations of a lion defeated by two male figures, one on either side, are commonplace

^{6.} There are rare examples of other seals on which Aya's name precedes Shamash's, such as those from the British Museum (Collon 1986: Pl. 6:23, Pl. 10:85, Pl. 30:402), but in every case the two names are written on a single line.

on Ur III seals (e.g., Porada 1948: Pl. 42:268–272; Collon 1982: Pls. 35–37; Buchanan 1966: Pl. 31: 410–419). Collon (1982: 113) notes that these seals are more likely than others to be inscribed, and our example is indeed inscribed (see chapter 7). There is nothing extraordinary about the presence of an Ur III seal at Mashkan-shapir, given that the site was occupied during the Ur III dynasty.

The nude goddess appears on two seals, both of a fine-grained dark stone, perhaps calcite. AbD 90-455 is complete but badly worn and shows her standing behind a figure in royal position who in turn faces a standing deity, probably once again the god with the arm extended—a design that is replicated on numerous other Old Babylonian seals (e.g., Collon 1986: Pl. 23: 292, 304, etc.; Po-rada 1948: Pl. 67: 483, 484). The fact that the god is shown standing indicates that the Mashkanshapir seal cutters were not operating outside the norms for the southern alluvium as a whole, despite their idiosyncracies. The other piece (AbD 90-593) is more fragmentary, preserving only the nude goddess flanked by a lion mace and the rear part of a male(?) figure. At other sites, the nude goddess is associated with the lion mace (e.g., Collon 1986: Pl. 23:302; Porada 1948: Pl. 67:480), so it is not surprising to see that association here.

Stone Jewelry (fig. 70)

Most stone jewelry from Mashkan-shapir, as from other sites, is in the form of beads. The typology devised by McCown and Haines (1967: 96, Pl. 150:1–5), classifies beads as spherical (type 1), barrel-shaped (type 2), biconid (type 3), cylindrical (type 4), and discoid (type 5). The beads from Mashkan-shapir, separated by material, are listed according to this system in Table 5.

		Type—based on McCown and Haines 1967: 96, Plate 150:1–5								
Material		1A	1B	2A	2B	3B	3C	4 A	5A	Other
Carnelian		12	6	2	1	1		2		2
Hematite				2			1	1		
Lapis Lazuli									1	
Steatite			1							1
Agate				2				1		1
Quartzite	Yellow	1								
	Pink									1
Other	White							1	1	
	Grey		1						8	
	Black	2	1					1	5	
	Red-brown								3	

Table 5. Distribution of Stone Beads by Shape and Material

The very high percentage of carnelian—especially in the smaller bead categories—is to be ascribed in part to its conspicuous color, which makes it more visible in survey than other materials. Nevertheless, it is noteworthy that carnelian beads tend to be spherical, whereas in the next most common material, hematite, beads are preponderantly in larger, more elongated forms. The thin, discoid beads, which must have served as spacers, were almost all of either grey-black or black stone. In necklaces they may originally have alternated with similarly shaped beads of shell (see shell, below) which were also recovered.



Fig. 70. Stone and glass jewelry (reproduced at 75%). Bead: AbD 87-118, AbD 87-160, AbD 87162, AbD 87-211, AbD 90-536; Pendants: AbD 87-11, AbD 88-154; Shell ring: AbD 90-329; Glass bead: AbD 90-42; Glass bracelet: AbD 87-45; AbD 87-195.

Aside from the 57 beads that fit comfortably into the typology of McCown and Haines (1967: 96), there were five that stand apart and lack symmetry. AbD 87-211 is a broken steatite spacer, designed to accommodate multiple threads, similar to examples from Nippur (McCown and Haines 1967: Pl. 150:23) and Mari (Parrot 1959: fig. 72). The others are unique. One (AbD 90-536), of agate, is in the form of a truncated cone. A second (AbD 87-162), of carnelian, is more or less ovoid in shape (but with a greater curvature one side) and has a number of facets cut into it. A third (AbD 87-118), also of carnelian, is roughly plano-convex in shape. The remaining bead (AbD 90-744), of pink limestone, is a flattish, rounded triangle that is pierced from top to bottom. The asymmetry of the majority of these beads suggests that they were intended to be part of designs with specific directionality. Such unusually-shaped beads are not uncommon at other Mesopotamian sites, even if exact parallels to our shapes cannot be found.

In addition to the beads, one round ball (AbD 88-234) of banded agate was recovered, as well as two pendants. One of the pendants (AbD 88-154), of greenstone, is a fragment of indeterminate form, pierced twice. The other (AbD 87-11), of pink quarzite, is in the shape of an animal, al-though exactly what kind of animal is unclear. At first glance, it appears to be a sheep, but it has a collar engraved around its neck and a series of curved lines carved above the eyes, and thus may well have been intended to represent a dog. This object was found on the first day of fieldwork, before the grid or even any benchmarks had been established, and we cannot be more precise about its findspot than to say that it came from the southeast portion of the site. Its closest parallels are with the small stone pendants from the Uruk and Jemdet Nasr periods, but no dogs are mentioned at the major Protoliterate sites treated in Behm-Blanke's (1979) authoritative publication of these objects. There are, however, two examples of representations of dogs, one from the recent Jemdet Nasr excavations (Matthews 1989: 244, fig. 11) and one from Tello (de Genouillac 1934–36: Vol II, Pl. 36:2). These examples share the presence of a collar with ours but have clearly delineated



Fig. 71. Weights (reproduced at 100% except as noted above). Lentoid: AbD 90-482, AbD 90-563, AbD 90-585; Barrel: AbD 87-289, AbD 90-230, AbD 90-432, AbD 90-499; Duck: AbD 90-310; Trapezoidal: AbD 90-451; Ovoid: AbD 87-93; Tear-shaped: AbD 90-441; Anchor?: AbD 88-289.

ears, where ours has none. The discovery of Uruk-style amulets in the form of pigs (also very rare in the Uruk assemblage) in the major Isin/Larsa temples at Ishchali (Hill, Jacobsen, and Delougaz 1990: Pl. 41e) and Isin (Hrouda 1981: Pls. 40, 41:IB 1915, IB 1918) suggests that an archaizing style of amulet might have been produced in the early second millennium B.C. On balance, however, it seems most likely that this object comes from the Uruk occupation of the site.

Balance Weights (fig. 71)

Most balance weights found at Mashkan-shapir were of hematite. Lentoid shapes (AbD 90-482, AbD 90-563, AbD 90-585) find close parallels in similar objects from Nippur (McCown and Haines 1967: Pl. 156:3), Tell ed-Der (Gasche 1989: Pl. 46:5; De Meyer, Gasche, and Paepe 1971: Pl. 26:3) and Haradum (Kepinski-Lecomte 1992: fig. 166:7–8). More common barrel shapes are similar to examples from Ishchali (Hill, Jacobsen, and Delougaz 1990: Pl. 45), Nippur (McCown and Haines 1967: Pl. 147:18, 19), Tell ed-Der (Gasche 1989: Pl. 46:6) and Haradum (Kepinski-

Lecomte 1992: fig. 166:5–6). Only one duck weight (AbD 90-310) was recovered. This was of fine grained limestone and has closest parallels in an example from Nippur (McCown and Haines 1967: Pl 147:16). A hematite barrel weight (AbD 87-102) with one flattened side resembles 3N394 from Nippur (McCown and Haines 1967: 109); and a somewhat trapezoidal weight (AbD 90-451) has similarities to examples from Nippur (McCown and Haines 1967: Pl. 156:5) and Tell ed-Der (Gasche 1989: Pl. 46:7).

Two other weights deserve mention. One, an ovoid (AbD 87-93) is not of hematite but of a black-and-white mottled stone, similar to examples from Nippur (McCown and Haines 1967: 108: 2N716, 2N717) except that it had a cross scratched on it. Linear markings have been noted on other balance weights, such as one from Nippur (McCown and Haines 1967: 109: 3N400). One tear-shaped piece (AbD 90-441), made of creamy alabaster or quartzite, resembles a number of pendants reported from Nippur (McCown and Haines 1967: 99), but is unpierced and thus more likely to have been a weight.

Because weights are often damaged, it is difficult to discern from published weights what the normative units are. The values we obtained, presented in Table 6, suggest a series beginning around 1 gram, with intervals at ca. 1.5 g. and at about 2, 3, 4, 8, and 16 grams.

Object #	Weight	Shape	Material	Comments
AbD 90-563	0.9 gm.	Lentiod	Hematite	Broken in two
AbD 90-230	1.4 gm.	Barrel	Hematite	
AbD 90-482	1.4 gm.	Ovoid	Hematite	
AbD 90-451	1.5 gm.	Barrel	Hematite	
AbD 90-585	1.9 gm.	Lentoid	Hematite	
AbD 90-499	2.0 gm.	Barrel	Grey Calcite	
AbD 90-432	2.9 gm.	Barrel	Hematite	
AbD 87-43	4.3 gm	Barrel	Mottled Grey Stone	Incised X
AbD 87-289	8.2 gm.	Ovoid	Hematite	
AbD 87-102	8.7 gm.	Lentiod	Hematite	
AbD 87-28	16.2	Ovoid	Hematite	Chipped

Table 6. Balance Weights

Other Stone Weights (fig. 72)

Some categories of stone objects we found are rarely reported in the literature on other Old Babylonian sites. One very common artifact at Mashkan-shapir was a donut-shaped weight made out of stone, usually limestone. There were 31 of these, most of which were fragmentary but some whole. Some were very carefully made, while others still retained traces of the shape of the original pebble. They varied in diameter between 7.7 cm. and 14 cm., in thickness from 2.2 to 8.3 cm., with hole diameters between 0.7 and 4.5 cm. Despite this range, the objects were somewhat standardized. 77% had diameters between 8 and 12 cm., thicknesses between 3 and 6 cm., and hole diameters between 1.9 and 2.6 cm. The function of these objects is not entirely clear. Some pierced stones (but not of this shape) have been described variously as loom-weights or fishnet weights (McCown and Haines 1967: 112), but since none of these objects have been illustrated, it is difficult to tell how one was distinguished from another. Only at Haradum are close parallels reported (Kepinski-



Fig. 72. Stone donuts (reproduced at 33%).

Lecomte 1992: 391, fig. 172:3), but they are simply identified as weights. Until better contextual information is obtained for these objects, no more precise interpretations of their function can be offered.

In addition to the stone donuts, several other pierced stones that do not easily fit into known categories were recovered. AbD 87-56 might be a badly damaged mace-head fragment (see the discussion of mace-heads below). AbD 90-383 had the shape of a rounded rectangle, which is not consistent for an identification as a mace-head. Both were considerably smaller than the stone donuts, with smaller holes. A third piece (AbD 88-47) was in the form of a very rough flat square with a small hole in the middle.

A last weight (AbD 88-289, fig. 71) was a large stone in the shape of a somewhat flattened triangle, pierced near the apex. At nearly two kilos, it is much heavier than any other weight that we know of, whether from Mashkan-shapir or elsewhere. It was found near one of the canals, and the form is somewhat like stone anchors from later contexts in the Levant, but it hardly weighs enough for this purpose.

Domestic Tools (fig. 73)

In addition to the numerous terra-cotta spindle whorls discussed above, three examples in stone were also recovered. AbD 87-110 has the typical plano-convex shape of other objects of this type from sites such as Nippur (McCown and Haines 1967: 111), but the others (AbD 88-149, AbD 88-182, AbD 90-627) more closely resemble pierced stone discs. Because they are of approximately the same size, weight, and shape as the lentoid terra-cotta whorls, it seems likely that they served the same purpose.

Another group of objects has been described as whetstones at Nippur (McCown and Haines 1967: 110) and as polisher-sharpeners at Haradum (Kepinski-Lecomte 1992: 398–99, fig. 173: 1, 2, 4). At Mashkan-shapir, we found one indisputable whetstone (AbD 87-245) made of finegrained sandstone. It is neither pierced nor does it have the rectangular section that typifies the objects so described in the Nippur publication (McCown and Haines 1967: 110). Instead, it tapers toward one end, with a number of gentle facets along its length where it was worn down by use. In addition to this, seven objects like those from Haradum and Nippur were recovered, five of fine-grained quarzite and two (AbD 87-86, AbD 90-367) of slightly coarser stone, basalt in the latter case. Where preserved, the tops of all these objects are often slightly hollowed—a feature also seen on the examples from Haradum (Kepinski-Lecomte 1992: fig. 173:4). This suggest that these objects might better be described as palettes—especially the broader, flatter examples made of fine-grained quartzite. The examples of coarser stone, AbD 87-86 and AbD 90-367, were somewhat longer and narrower than the others, closer to the only illustrated example of a "whetstone" from Nippur (McCown and Haines 1967: Pl. 156:8). It is possible that they served as whetstones rather than as palettes, but there is no clear basis for division between the two types.

Ground Stone Tools and Weapons (fig. 73)

Stone mace-heads have been found at most Old Babylonian sites, almost exclusively in religious and palatial contexts. Four were found in the Mashkan-shapir survey (AbD 87-33, AbD 87-225, AbD 87-235, AbD 90-257). They are similar to mace-heads from Nippur (McCown and Haines 1967: Pl. 154: 25, 26) and Ur (Woolley and Mallowan 1976: Pl. 97k-m). Two are noteworthy for the stone of which they are made: AbD 87-235 is of a highly fossiliferous limestone somewhat similar to that identified by Sennacherib as "Anshan stone" in his reliefs at Nineveh (Russell 1991: 99);



Fig. 73. Palettes, whetstones, mace-heads, etc. (reproduced at 50%). Spindle Whorl: AbD 87-110; Whetstone: AbD 87-245; Palette: AbD 87-86, AbD 87-112, AbD 87-127, AbD 87-135, AbD 90-367; Mace-head: AbD 87-225, AbD 87-235, AbD 90-507; Celt: AbD 88-1; Axe: AbD 88-11.


Fig. 74. Chipped stone tools (all at 100%). Obsidian blade: AbD 87-35, AbD 90-248, AbD 90-359, AbD 90-447, AbD 90-576; Flint blade: AbD 90-232, AbD 90-422, AbD 90-462, AbD 90-490, AbD 90-668; Core: AbD 87-42, AbD 88-4, AbD 90-115.

and AbD 90-257 is of a grey stone with white veins. In both cases these decorative qualities were doubtless sought out deliberately to create mace-heads of more than simple utilitarian value.

Ground stone axes pose a problem. Like chipped stone tools (see below), they are normally considered artifacts of pre-Old Babylonian periods, and as surface finds, it is hard to determine whether they are to be associated with an earlier Uruk occupation or are, in fact, to be dated to the second millennium B.C. Stone axes generally come in two forms: simple celts and those with hafting holes. Celts are attested as far back as the 'Ubaid (Lloyd and Safar 1943: Pl. 29; Ziegler 1962: 1953 Pl. 35d, e), but also come from third-millennium levels (Jordan 1928: Pl. 97h; Lenzen 1965: 20e, f) in the bricks of the Sin-kashid Palace (Lenzen: 1966, 44) at Uruk and even from Old

Babylonian levels at Ur (Woolley and Mallowan 1976: 248). Stone axes or hammers, well attested for the third-millennium at Uruk (Lenzen 1974: Pl. 22d, e; 1965: Pl. 20d), have also been reported from first-millennium levels at Nippur (McCown and Haines 1976: Pl. 156:13) and Uruk (Schmidt 1972: Pl. 20k). Although it is possible that all of the late occurrences of stone celts and axes are no more than heirlooms, it must also be considered that stone axes of this type might be a rare but significant tool type manufactured throughout most of Mesopotamia's history. It seems unlikely that the two holed axes (AbD 88-11, AbD 90-507), six celts, and celt fragments all derive from the still-unlocated early occupation of Mashkan-shapir, especially considering that such objects are by no means common in the Uruk period; for example, no such axes or celts were recovered from the Uruk mound at Abu Salabikh (Pollock, personal communication). Unfortunately, there is no way to tell the date of production of a stone tool.

Chipped Stone Tools (fig. 74)

Chipped stone tools present the same dating problem as ground stone tools. In general, they have not been reported at most Old Babylonian sites, but their presence at both Nippur and Haradum suggests they do exist in such contexts, and the possibility that they are coming from earlier levels is ruled out in the latter instance, where there is no reported evidence for occupation prior to the Old Babylonian period. The absence of chipped stone tools in post-second-millennium levels at Nippur (McCown and Haines 1967: 103) suggests that they are not automatically transferred in quantity from early to late contexts and that perhaps they did not go out of use until after the abandonment of Mashkan-shapir. At Mashkan-shapir, the issue is complicated by the fact that the site does indeed have a real, if ill-defined, Uruk component.

The percentage of tools made of obsidian (37%) rather than chert is very high when compared with the single obsidian blade found at Haradum (Kepinski-Lecomte 1992: 401) and absence of any reported obsidian blades at all from Nippur. To a certain extent, factors of recovery may have raised this percentage somewhat in our survey. Black obsidian blades are conspicuous on the surface, whereas the grey to buff-colored chert used at Mashkan-shapir is less easy to distinguish from the millions of pot-sherds.

Most of the tools recovered were blades, which can be divided into plain, retouched, and those with saw-tooth edges. The distribution of these types is given in Table 7. We also recovered two primary cortical flakes (AbD 87-37, AbD 87-43) and four prismatic chert cores (AbD 87-41, AbD 87-42, AbD 88-4, AbD 90-115), plus one core with only a few blades removed on one side (AbD 90-238).

Blade Type	Flint	Obsidian	Total
Unretouched Blade	7	4	11
Retouched Blade	3	4	7
Blade with sawtooth retouch on one side	2	1	3
Blade with sawtooth retouch on both sides	2	2	4
Total	14	11	25

Table 7. Flint and Obsidian Blades

Food Processing Tools (figs. 75)

In addition to the rough grinding stones, usually made of synthetic basalt (see above), which litter the site, we also found some more carefully worked stone tools designed for food preparation. These included five pieces of limestone whose form suggests that they may have been used for grinding grain. AbD 87-166, AbD 90-27, and AbD 90-278 were flattish pieces with wear on one side. One (AbD 87-166) was part of a quern at least 35 cm. in diameter, in the outer edge of which was evidence of a small hole, perhaps for attaching a handle. AbD 90-544 is a square piece of limestone with a hollow worn through it, perhaps the remains of a stone door socket but equally serviceable as a grinding stone or mortar.

We also found six stones that are undoubtedly mortars, most made of limestone. AbD 90-569 had sides that are nearly perpendicular to the grinding surface, whereas sides of the others sloped more and were less well made, having closer parallels to published examples of mortars from Haradum (Kepinski-Lecomte 1992: 392–93, fig. 172:5). Only one obvious pestle fragment was recovered (AbD 88-61). This was well made, of black and white granite, and has a round cross-section. A number of similar pieces that lack the round cross-section and frequently have wear on both ends will be discussed below, under "small grinders," because it is not clear whether they were used with the mortars for food preparation or if they were part of a tool-kit for more complex tasks, such as stone bowl production. Stone grinders and mortars were produced throughout Mesopotamian history, including the Parthian period (Andrae and Lenzen 1933: 13:Abb. 10, 11), and there is no way of knowing how many of these date to the Old Babylonian occupation.

Small Grinders or Weights (fig. 76)

Nearly 70 small, minimally-worked stones, mostly made of quartzite, were sufficiently modified by human activity to merit registration as artifacts. A number of similar but less obviously crafted objects were also found in the surface survey and merely noted. By and large, these categories are not well recorded at other Mesopotamian sites. A number of pounders and polishers were reported at Nippur (McCown and Haines 1967: 112), but not illustrated in any way, so it is difficult to know what they looked like. Stones worked in the manner of ours are published from Tell ed-Der (Gasche 1989: 104, Pl. 46:8–10) where they are described as weights. Only from Haradum is there an extensive publication of such objects (Kepinski-Lecomte 1992: 393–98, Pl. 172:6–8). They were generally described as grinders of one kind or another. But without either a typology of such stone tools, or more complete illustration, it is difficult to determine their exact distribution.

For purposes of discussion, we have divided the small ground stones from Mashkan-shapir into four general categories: cuboids, elongated stones with wear on the ends, discoids, and a more variable category that can be described as other rectilinear grinders with wear on multiple faces.

Cuboids, with 42 examples, are by far the most common, and their variety provides a good indication of the way in which they were made. They began life as small, rounded river pebbles, which were then used in grinding and polishing some fairly hard material, by which means the stone was worn down. First one side would be worn flat, then the opposite side, and eventually the four other faces, so that a cubical shape resulted. The illustrations of similar objects from other sites where they have been reported (Kepinski-Lecomte 1992: Pl. 172:6; Gasche 1989: Pl. 46: 8–10) indicate that this procedure was followed there as well.

The second most common type is oblong and has either a polish or evidence for pounding on one or both ends. Seventeen of these have been found at Mashkan-shapir, none with the circular cross-section that one would expect if it were a pestle. Instead, the cross-section tends to be oval,



Fig. 75. Grinding stones (all reproduced at 50%, except for AbD 90-569, at 25%). Grinding stones: AbD 87-166; Mortar: AbD 87-111, AbD 87-251, AbD 90-569, AbD 90-753; AbD 88-61.



Fig. 76. Small grinders (reproduced at 33%). Cuboid: AbD 87-65, AbD 90-46, AbD 90-392, AbD 90-540; Oblong: AbD 90-239, AbD 90-241, AbD 90-444; Prismatic: AbD 90-56; Discoid: AbD 87-8.



Fig. 77. Miscellaneous stone objects (reproduced at 50% except AbD 90-645 and AbD 90-29, which are at 25%).

rectilinear, or trapezoidal. Where both ends are preserved, there is usually evidence of wear on both, not just on a single working end, as with a normal pestle. The only published examples of similar objects are from Haradum (Kepinski-Lecomte 1992: fig. 172:7, 8).

Six pieces, most of very fine-grained stone, were roughly in the shape of rectangular prisms with multiple facets, each of which had signs of wear or polish. On AbD 90-56, this polish is particularly fine—in fact, it is a sheen. Also of fine stone are five discoids (AbD 87-8, AbD 87-38, AbD 90-55, AbD 90-465, AbD 90-535) showing evidence of polish as well. AbD 90-465 is unique in having polished edges; the others were polished on their broader surfaces. One surface of AbD 90-55 is stained green, perhaps as a result of some association with copper or copper production.

Since all of these grinders were generally found in the same area (see chapter 9), it may be that together they formed a group of tools for the production of vessels and other objects out of stone. While the tools with end wear and the cuboids were probably used in the initial stages of production, those with multiple facets, and perhaps also the discoid grinders, seem to have been used for finishing.

Miscellaneous Stone Objects (fig. 77)

A wide variety of stone objects from the surface of Mashkan-shapir are not easily categorized by type. These include what may be parts of large diorite statues (AbD 87-122, AbD 87-180),

including one fragment of an inscription (AbD 87-4; see chapter 7). We also have trial pieces: a piece of lapis lazuli with drill holes in it (AbD 87-203), a piece of sandstone with worn grooves in all sides (AbD 87-55), and a piece of hematite polished on the edges (AbD 87-32). A rectangular piece of green stone (AbD 87-204) and a roughly circular piece of an orange-pink stone (AbD 90-511) may represent unfinished objects.

Two objects were made of stone deliberately selected for the fossils it contained. AbD 90-273 is a second example of fossiliferous limestone, in this case formed into a flattened oval with chipping on one edge. AbD 90-619, from a different fossil bed, was fashioned into a prism with beveled edges. In neither instance is the function of the item at all clear. Two other pieces are equally enigmatic. Both are carefully made, with indentations in them, but while the indentations are only on the flat side in the case of the hemispherical AbD 90-29, they are found on both sides on the ovoid AbD 90-645. AbD 90-502 is a beautifully made fine-grained cylindrical stone, grooved around one end and broken at the other where the stone had been pierced. Perhaps it was designed as some kind of handle. We recorded one unworked stone (AbD 90-489) in our artifact inventory because its natural concentric layers seem to mimic the iris and pupil of the human eye, and we think it not unlikely that it was brought to the site because of these very qualities.

Shell Artifacts

The absence of bone objects and the relative paucity of shell objects recovered in our survey is probably due more to the difficulty of distinguishing objects of this type from the overall surface scatter of broken animal bones than from their actual absence or infrequency at the site. Among the few beads and rings of shell found, three of the beads (AbD 87-31, AbD 87-80, AbD 87-307) are of the flat, discoid variety (McCown and Haines 1967: 96, Pl. 150:5, Type 5a) and were probably the white counterparts of the grey-black stone beads of this type described above.

Glass and Frit

Apart from two beads of frit that are probably to be dated to the Old Babylonian occupation of Mashkan-shapir, the glass finds from Mashkan-shapir are assumed to belong to the Partho-Sasanian period and later. Places where perceptible amounts of broken glass littered the surface to a large extent coincided with concentrations of glazed ceramics, stylistically late stamped sherds, and copper/bronze coins, thus defining the sectors of the site where this terminal occupation took place. Two limited areas on the main mound were so identified, and there was more such material associated with some of the late canals.

We followed the same collection procedures with glass as with terra-cotta, collecting objects, more complete vessels, and objects with noteworthy decoration. Consequently, the recovery of glass jewelry was probably relatively thorough, whereas with glass vessels it was much more selective.

Glass Vessels

No complete glass vessels were found, but we did recover a number of bases, stems of goblets, necks, and even the more or less complete bodies of some small bottles. Two bases (AbD 90-457, AbD 90-546) find good parallels with Roman vessels from Karanis (Harden 1936: Pl. 17:547). Here, the flared bases of these goblets or bowls have ribs that swirl in the same direction in each instance. We also recovered a molded base for a bowl (AbD 90-32). While somewhat similar

molded bases were common in both the Partho-Sasanian and Early Islamic periods, the only exact parallel we have been able to find comes from Iran (Hasson 1979: 30, No. 55). This example dates to the early Islamic period but is said to be identical to glass drinking bowls of the Sasanian period. The three other bases (AbD 87-201, AbD 87-209, AbD 90-498) are rather nondescript. All come from small vessels, which is presumably why they were preserved intact.

Three goblet stems (AbD 90-231, AbD 90-603, AbD 90-656) were recovered, each with horizontal ridges. While such objects can be dated to the Partho-Sasanian period (Clairmont 1963: Pl. 9: 460–66; Gullini 1970–71: fig. 54: 111–14), they are more common in slightly later periods (Lamm 1930: Vol. 2, Pl. 4:11, 11a; Northedge, Bamber, and Roaf 1988: fig. 53:9). The presence of three examples at Mashkan-shapir should not be taken as indicative that they were a particularly common item; solid stems simply survive better than most other glass objects.

Vessels with tall cylindrical necks were common in both Roman (Harden 1936: Pl. 20:797– 840) and later times, but the two examples from Mashkan-shapir (AbD 90-267, AbD 90-634) with long straight necks with little or no lips find their best parallels with pieces that range in date from Partho-Sasanian to early Islamic at Seleucia (Gullini 1970–71: fig. 49:23, 24, 25, 29), 'Ana (Northedge, Bamber, and Roaf 1988: fig. 53:15) and elsewhere in Iraq (Abdul Khaliq 1976: 276:126).

One piece of cut glass (AbD 88-190) resembles the base of a lamp (Riis and Poulsen 1957: 51, number 127). It is similar to ninth- to tenth-century pieces from Iraq and elsewhere (Abdul Khaliq 1976: 265:90; von Saldern 1980: 163, number 158). AbD 88-277, a bowl rim fragment, and two partial bottle bodies (AbD 87-3, AbD 87-206) could date anywhere in the Partho-Sasanian or early Islamic periods.

The knobs from three glass lids (AbD 88-196, AbD 90-5, AbD 90-304), all of similar design, are identical to Partho-Sasanian examples from elsewhere in Iraq (Abdul Khaliq 1976: 248, number 29) and Syria (Riis and Poulsen 1957: 36, fig. 53). Another lid, without knob (AbD 90-643), and a bottle stopper (AbD 90-5) are too nondescript to date at all.

One other glass object (AbD 90-662) might be a fragmentary glass weight, but if so, it is unusually large, poorly formed, and does not preserve the stamp that is customary for such objects (Balog 1976). It may, in fact, be part of a glass ingot.

Glass and Frit Jewelry

It seems probable that frit does not survive well on the surface of wind eroded sites such as Mashkan-shapir. Only two pieces were found (AbD 87-200, AbD 90-337, both greenish-blue beads, and neither was at all well preserved. Because frit beads were common in the Old Babylonian period (McCown and Haines 1967: 97) these should probably be assigned to the main occupation of the site.

Jewelry made of glass, on the other hand, is to be dated confidently to more recent periods. It falls into two main categories: glass beads, for which published examples are rare; and glass bracelets, which have been the subject of intensive analysis in recent years (Spaer 1988: 1992).

Two basic types of glass beads were found. AbD 88-227 and AbD 90-290 are the multicolored kind that were traded widely around the Near East, beginning in the Roman period but especially during the Islamic era (Engel 1990). These specific beads from Mashkan-shapir have no exact parallels. The remaining eleven beads are of monochrome blue, green, pink, black, or clear glass and may date from almost any period. AbD 88-45, AbD 88-145, AbD 90-42 (fig. 70), and AbD 90-174 all had the same cone shape but differed in color. The remainder show no consistency of any kind, varying in shape from round to discoid to elongated. Almost all of them are broken in some

way. The majority of these beads are probably of the Islamic era, but without a detailed published study of the chronology of glass beads, no further specification can be offered.

This is not the case for the glass bracelets, of which some 37 broken pieces were found. Glass bracelets are very colorful and unlikely to be missed in survey. The bracelets from Mashkan-shapir come in a number of varieties, some of which probably derive from the Parthian to Early Islamic occupation of the site, while others were made considerably later. Of the former, four plain black glass bracelets (AbD 87-46, AbD 87-108, AbD 90-157, AbD 90-364) with a round cross-section are almost certainly early (Spaer 1988: 54), as are the similar examples (AbD 87-195, AbD 90-612) with twisted decoration (Spaer 1988: 58–59).

Two other bracelets (AbD 90-438, AbD 90-719) also had spiral decoration, but in these instances additional trails of contrasting colors, fused or asymmetrical, suggest that they are Islamic, possibly early Islamic, in date (Spaer 1992: 49, Table 2:3–4). The same can be said for AbD 88-57, which was untwisted, of black glass, with a single white stripe around its exterior (Spaer 1992: 55).

The remaining 21 bracelet fragments are to be dated much later, probably to Ottoman times. Thirteen of these, the majority, were relatively simple, having triangular cross-sections and trail or patch patterns in green and orange-brown glass (Spaer 1992: 53, figs. 15, 20). More complex types had turquoise stripes (AbD 90-553, AbD 90-587) or red stripes (AbD 90-513, AbD 90-750) on the outside, or even elaborate multicolored patches (AbD 87-45, AbD 88-170, AbD 90-501, AbD 90-625; Spaer 1992: 54, fig. 22). Given the absence of Ottoman ceramics or any other traces of permanent habitation of the site this late, these bracelets were probably brought to the site by pastoral nomads, whose descendants camp in the vicinity to this day.

Five other curved glass pieces (AbD 88-123, AbD 88-321, AbD 90-729, AbD 90-748, AbD 90-749) might be bracelets, but are more probably handles. All are of translucent glass, which is not usually used for bracelets; four are green and one is blue (AbD 88-321). AbD 88-321 and AbD 90-729 are quite plain, with round cross-sections. AbD 90-748 is twisted. The end of AbD 88-123 loops over itself in such a way that, if it is a handle, it only joined the vessel at one end. AbD 90-749 has a series of flutes, resembling handles from Seleucia (Gullini et al. 1967: fig. 56, number 176) and Hama (Riis and Poulsen 1957: 36, fig. 53). None of these five pieces can be dated with any accuracy, but it seems probable that they, like the glass vessels, belong to the Parthian to early Islamic period.

Chapter 7

A Building Inscription of Sin-iddinam and Other Inscribed Materials from Abu Duwari¹

PIOTR STEINKELLER

A Building Inscription of Sin-iddinam

Introduction

On Friday, January 13, 1989, as E. C. Stone was tracing the city wall of Tell Abu Duwari, she spotted fragments of inscribed baked clay barrels lying on the surface beside what can now be identified as the south city gate.² The fragments, numbering 146 individual pieces, all came from the same location, which was a shallow hole in the ground. The preliminary examination of the fragments, conducted on the site by Stone and P. Zimansky, revealed that the barrels record a building inscription of the Larsa king Sin-iddinam, commemorating the erection of the city wall of Mashanshapir. An additional barrel fragment recording the same inscription was found in the same location during the campaign of 1990.

Given the context of this discovery, the obvious conclusion must be that the barrels had originally been embedded in the city wall, either in the gate itself or in the sections of the wall immediately adjacent to the gate. The fact that the fragments were all found in one location in turn suggests that the barrels were collected in ancient times by some pious (or historically minded) individual—apparently after the wall and the gate had collapsed or had been torn down intentionally—and then reburied by him in their immediate vicinity.

That Mesopotamian public building practices involved the placing of inscribed foundation deposits not only in the substructures of free-standing buildings, such as temples and palaces,³ but also in city walls, particularly during the time of the Larsa dynasty, is proved by the modern discoveries of such pieces *in situ*. A good example in point is the group of texts pertaining to the construction

^{1.} Note the use of the following abbreviations:

NA	Nur-Adad
SI	Sin-iddinam
WS	Warad-Sin

^{2.} For findspot, see discussion on Square 5K, pp. 312-13 below.

^{3.} For foundation deposits in general, see Ellis 1968; Dunham 1986.

of a wall of Ur by king Warad-Sin, which bore the name ^dNanna suhuš ma-da ge-en-ge-en (Frayne 1990: 236–44 WS 18, 19, 20, and 21). These texts are inscribed on four distinctive types of objects: (1) stone and copper tablets (WS 19); (2) clay barrels/cylinders (WS 21); (3) clay cones (WS 20); and (4) stamped bricks (WS 18). At least two of those objects were found in contexts directly associated with the remains of a city-wall: one of the barrels (WS 21 Ex. 2) came "from the NE city wall [of Ur], central section,"⁴ whereas one of the cones (WS 20 Ex. 7) was excavated in the "wall, Larsa pavement, between [Neo-Babylonian] graves 68 and 69."⁵

This point, in fact, is confirmed by contemporaneous written sources. Thus, a text of Nur-Adad (Frayne 1990: 147–49 NA 7), which commemorates the building of a wall of Larsa and is inscribed on clay cones, talks explicitly of the placing of foundation inscriptions (temen, Akk. *temmēnu*) in that structure: ud da-rí-šè mu-mu gá-gá-dè bàd gal-bi temen kug mi-ni-si⁶ dUtu ù-mani sá bí-in-dug₄ mu-šè im-mi-sa₄, "in order to establish my fame forever, I embedded holy foundation inscriptions in that great wall and named it 'The god Utu has achieved his triumph'" (lines 71–76). And, even more informatively, an Old Babylonian inscription (stone tablet) from Meturan (modern Tell Haddād, situated north of Jebel Hamrin) specifically identifies the city gate as a locus of such deposits: *A-ri-im-Li-im* . . . BÀD-*am ša Me-tu-ra-an*^{ki} *i-pu-uš ù* gi^šIG-*tim ir-te i-na* KÁ.GAL*tim tem-me-n[i] iš-ku-un*, "Arim-Lim . . . built the city wall of Meturan and installed (its) doors; in (its) gates he placed foundation inscriptions" (Frayne 1990: 700 Arim-Lim 1:1–11).

Of the 147 Abu Duwari clay fragments, 51 are inscribed, while 16 contain either single signs or meaningless traces of signs. The remaining 80 fragments are uninscribed. With a few exceptions, the surfaces of the fragments are highly eroded and encrusted with salts. This indicates that they must have remained exposed to the elements for an extended period of time.

Only two of the pieces are preserved more or less completely (Sources 14 and 17). Owing to the exceedingly poor condition of their preservation, only a few of the remaining fragments could be joined together. All such "joins" were made by Stone and Zimansky in 1989 (see also below).

^{4.} Sollberger 1965: 17 under no. 77.

^{5.} Sollberger 1965: 18 under no. 81 B.

^{6.} Frayne (1990: 149) translates erroneously "I determined the holy perimeter of this great wall." That bàd-gal-bi is not a patient but an indirect object and that it is, accordingly, to be analyzed as /bàd-gal-bi-e/ is indicated by the locative infix -ni- in the verb. Furthermore, as noted by Dunham (1986: 38), in the Larsa building inscriptions temen invariably means "foundation inscription/deposit," and not "holy perimeter." For the correct translation of this passage, see already Sollberger 1982: 345.

For temen- \emptyset . . . si-(g), see the detailed discussion in Dunham 1986: 40–55. Noting the instances where si-(g) clearly denotes the setting up (or the placing in) of various post-like objects, Dunham demonstrates that this verb has a similar sense when said of temen, meaning something like "to stick into" or "to hammer in." This leads her to the conclusion that, in the contexts where the depositing of temen is described by the verb si-(g), temen means specifically "the foundation peg (or set of pegs)" (Dunham 1986: 51). This suggestion is nicely confirmed by the Nur-Adad inscription in question, since the objects bearing it are all clay cones. [N.B. this inscription apparently was not available to Dunham at the writing of her article, since she says (1986: 53) that no examples of temen- \emptyset . . . si-(g) are found in royal inscriptions after Gudea; see also Dunham 1986: 59, where she speculates that the precise significance of temen- \emptyset ... si-(g) had been forgotten by Larsa times.] Here it should be pointed out, however, that in other contexts temen may describe any type of object inscribed with a foundation text. This is demonstrated, e.g., by the inscription that is preserved on stone tablets and deals with the construction of Ninisina's temple at Larsa (Frayne 1990: 244-45 WS 22:27-31): egir ud-da-aš ár-mu ak-ak-dè temen ár nam-nun-na-gá uru₄-bi /= -bi-e/ ki hé-bí-túm é-gar₈ sikil-bi /= -bi-e/ hé-bí-si, "in order that, in future days, I be praised, I buried (some of the) foundation inscriptions, the praise of my princeship, in its (i.e., of the temple) foundation, (while others) I embedded in its pristine brick wall." Of those temens, the ones buried in the foundation are probably none other than the surviving stone tablets. In contrast, the temens embedded in the wall appear to have been the (now lost) clay cones and barrels that almost certainly formed part of the original deposit. Note one further text (Frayne 1990: 700 Arim-Lim 1; cited below), in which temmēnu very likely refers to the stone tablet on which the inscription is written down.

Because of this, the exact number of the original pieces (barrels) cannot be established with certainty. The distribution of text on the inscribed fragments indicates that there must have been at least nine pieces, possibly as many as twelve.⁷

As can be judged from the appearance of the fragments—especially among them Sources 1, 2, 6, 7, 8, 11, 12, 13, and 92 (see figs. 78, 79, 80, 81, 82, 83, 85, 86, 87, 99, and 100)—the majority of the pieces were barrel shaped. In at least two instances (Sources 14 and 17; see figs. 88, 89, and 91), however, the pieces were nearly spheroid, their shape resembling that of a grapefruit or perhaps a mace-head. As far as I know, this particular shape is completely unique among the objects with building inscriptions that are extant from ancient Mesopotamia.

Sources

As noted above, the total number of fragments is 147, representing at least nine (and possibly as many as twelve) original pieces. Of those fragments, 51 are inscribed, while 16 contain either single signs or traces of signs whose position in the inscription cannot be identified. As far as can be ascertained, all of the pieces bore a two-column inscription. The division of text into columns differs in some sources. In the composite transliteration offered below, the sequence is that of Sources 17 and 21. All of the sources record exactly the same text. The only identifiable textual variant is found in ii 4.

The preliminary transliteration of the inscription was prepared by Steinkeller in 1989, based on the photographs. In January of 1990 he spent a week in the Iraq Museum collating the fragments. Because of the short duration of his stay, he did not make any real effort at that time to look for additional joins (apart from those made by Stone and Zimansky in1989), hoping that this work would be done later. Moreover, it was expected that a number of fragments heavily encrusted with salts, which could possibly provide restorations for some of the lacunae in the text, would be re-baked and cleaned by the Iraq Museum's conservators. Unfortunately, due to the outbreak of hostilities later that year, these plans had to be delayed indefinitely.

Since the preparation of a composite hand-copy of the inscription was felt impractical, photographs of the best preserved fragments are offered instead. In addition, drawings of some of the difficult signs and passages are given in the textual commentary.

Source	Lines	
1+48+85	i 1-10, 40-43, meaningless traces of ii	Fig. 78
2+4+6+10+33	i 4–28, ii 6–26	Figs. 79-80
3	i 1–2, 32–40	
4	Joins 2+	
5+13	i 4–13, 42–43, ii 1–11	
6	Joins 2+	Fig. 81
7+8+9+94	i 1–30, 41–42	Fig. 82
8	Joins 7+	Fig. 83
9	Joins 7+	Fig. 84
10	Joins 2+	
11	i 1-3, 37-40, 41-43, ii 38-43	
12	i 31–42	Fig. 85
13	Joins 5+	Figs. 86-87
14	i 9–20, ii 10–17	Figs. 88-89

7. In making this determination, I was assisted by Miss Tonia Sharlach, whose patient work is warmly acknowledged.

Source	Lines	
15	ii 27–31	Fig. 90
16	i 26–28, ii 24–33	Fig. 91
17	i 1-6, 40-43, ii 1-6, 39-43	
18	i 1–12, ii 1–13	Figs. 92-93
19	i 17–25, ii 13–23	
20	ii 1–16	
21	ii 1-4	
22	i 30–35	
23	Uninscribed	
24	ii 17–18	
25	Meaningless traces	
26	i 23–26, ii 22–29	
27	i 5–10, ii 7–9, 11–16	
28	i 13–23	
29	Uninscribed	
30	ii 18–32	
31	i 30–40, ii 32–41	
32	Uninscribed	
33	Joins 2+	Fig. 94
34	i 34–42, ii 33–42	
35	i 22–25, ii 23–32	
36	Uninscribed	
37	i 26-28 ? (traces only)	
38	Uninscribed	
39	i 26–31	
40	ii 4–8	
41+45	ii 21–39	
42	i 1–7	
43	i 2–6	
44	i 26–35	
45	Joins 41+	
46+89+92	i 15–39, ii 19–31	Fig. 95
47	ii 41-42 ? (individual signs only)	
48	Joins 1+	
49	ii 1–7	
50	i 1-4	
51	i 14–18	
52	i 28–32	
53	ii 32–35	
54	i 24–28 (traces only)	
55	i 2-4	
56	i 26–28 (traces only)	
57	i 25–28	
58	i 11–13	
59	ii 11–15	
60	Uninscribed	
61	Uninscribed	
62	Uninscribed	

Source	Lines	
63	i 14–15, ii 13–16	
64	ii 30–34	
65	Uninscribed	
66	Uninscribed	
67	Meaningless traces	
68	Uninscribed	
69	i 26–30	
70	Uninscribed	
71	Uninscribed	
72	ii 14–20	
73	ii 37–41	
74	ii 8–12	
75	ii 22–24	
76	ii 15–20	
77	Meaningless traces	
78	Uninscribed	
79	Uninscribed	
80	Uninscribed	
81	Meaningless traces	
82	Uninscribed	
83	Uninscribed	
84	Uninscribed	
85	Joins 1+	
86	Uninscribed	
87	i 33–41, ii 37–43	Fig. 96
88	i 23-27 (traces only)	C
89	Joins 46+	Fig. 97
90	Uninscribed	-
91	i 41–42, ii 33–43	Fig. 98
92	Joins 46+	Figs. 99–100
93	ii 35–39	
94	Joins 7+	
95	Uninscribed	
96	Uninscribed	
97	Uninscribed	
98	Uninscribed	
99	Meaningless traces	
100	Uninscribed	
101	Uninscribed	
102	ii 19–21	
103	Uninscribed	
104	Meaningless traces	
105	Uninscribed	
106	ii 42-43 (traces only)	
107	Uninscribed	
108	Uninscribed	
109	i 37–38	
110	Uninscribed	

Source	Lines	
111	Meaningless traces	
112	Uninscribed	
113	Meaningless traces	
114	Meaningless traces	
115	Uninscribed	
116	Meaningless traces	
117	Uninscribed	
118	Individual signs—cannot be located	
119	Uninscribed	
120	i 27–28 ? (traces only)	
121	Uninscribed	
122	ii 12-13 (traces only)	
123	Uninscribed	
124	i 39-43 (traces only)	
125	i 14–16	
126	Meaningless traces	
127	Uninscribed	
128	Uninscribed	
129	Meaningless traces	
130	ii 4–9	
131	Uninscribed	
132	Uninscribed	
133	Uninscribed	
134	Uninscribed	
135	i 35–36 ? (traces only)	
136	i 15–18	
137	ii 9–10	
138	Uninscribed	
139	Meaningless traces	
140	Meaningless traces	
141	Uninscribed	
142	Uninscribed	
143	Uninscribed	
144	Uninscribed	
145	Uninscribed	
146	Uninscribed	
147	ii 17–21	

Text

Transliteration

- i 1 ud en gal ur-sag ^dNergal(KIŠ.UNUG.GAL)
 - 2 uru^{ki}-ni Maš-gán-sabra^{ki}
 - 3 šag₄ gú-bi gi₄-a-na
 - 4 zi-de-eš mu-un-è-a

Translation

1-4 When the great lord, the hero Nergal, in his overflowing heart verily caused his city Mashkan-shapir to rise,

- 5 bàd-bi ki sikil-la
- 6 gal-bi dù-a-da
- 7 ki-tuš-bi dagal-la-da
- 8 inim nu-kàm-me-da-na
- 9 mah bí-in-dug₄-ga-a
- 10 ud-ba ^dSin(EN.ZU)-i-din-na-am
- 11 nita kalag-ga
- 12 ú-a Úrim^{ki}-ma
- 13 lugal Larsam^{ki}-ma
- 14 lugal Ki-en-gi Ki-uri-ke₄
- 15 lú É-babbar é ^dUtu-ke₄
- 16 mu-un-dù-a
- 17 ^{íd}Idigna íd dagal-la
- 18 mu-un-ba-al-la-a
- 19 nidba mah
- 20 ^dA-nun-na-ke₄-ne
- 21 šu gal bí-in-du₇-a-me-en
- 22 a-rá gal-gal
- 23 ki-bi mu-da-kin-kin-gá-aš
- 24 éren dagal-la mu-tùm-tùm-bi
- 25 zi-dè-eš mu-zu-a-mu-šè
- 26 nam-bi-šè ^dNergal
- 27 dumu ^dEn-líl-lá-ke₄
- 28 ^{giš}al ^{giš}tubšig(ÍL) g[á(?)-ra(?) ha(?)-m]a(?)sum(?)-sum(?)
- 29 nam-bi [ha(?)-ma(?)-ta]r-tar
- 30 é $^{\Gamma}GIŠ(?)^{1}[...]^{\Gamma}x^{1}-ta$
- 31 gá-ra ma-^ríl¹ [. . .] DU
- 32 uru^{ki}-ni Maš-gán-sabra^{ki}
- 33 ki kug-ga bàd-bi s[ag(?)] íl
- 34 šag₄ húl-la-ni-ta
- 35 á-ág-ba ha-ma-ni-in-til
- 36 ud-ba igi-4-gál
- 37 ugnim kalam-ma-mu
- 38 um-mi-zi
- 39 iti-da ud 30-ka

- 5–9 (and) with his words that cannot be changed grandly decreed to erect its city wall in a virgin place (and) to expand its dwellings,
- 10 then Sin-iddinam,
- 11 the powerful male,
- 12 the provider of Ur,
- 13 king of Larsa,
- 14 king of Sumer and Akkad,
- 15–16 the one who built Ebabbar, the temple of Utu,
- 17–18 who excavated the Tigris, the broad river,
- 19–21 who greatly perfected the splendid offerings of the Anunnaku gods—this being I,
- 22–23 because I sought all the great things that are appropriate for that place (i.e., Mashkan-shapir),
- 24–25 (and) because I had the true expertise of mustering vast troops,
 - 26 because of that, Nergal,
 - 27 son of Enlil,
 - 28 gave me a hoe and a basket,
 - 29 (and) determined their fate for me.
 - 30 From the temple(?) [...]
 - 31 he raised for me $[(and) \dots]$.
- 32–33 (In order that) the wall of his city Mashkan-shapir, the pure place may raise its head,
 - 34 with joyous heart
 - 35 he made complete the building instructions for me.
- 36–38 Then, having mobilized one-fourth of the armies of my land,
 - 39 for one (whole) month, for thirty days,

 $40 \quad {\rm sig_4-bi\ h\acute{e}-em-mi-du_8}$

- 41 bàd-gal-bi
- 42 ^dNergal kur érim ha-ma-SUM.SUM.KI
- 43 mu-bi-im
- 1 ù-ma mu-bi
 - 2 gal-bi hé-em-mi-^rsa₄¹
 - 3 ud bàd-gal
 - 4 Maš-gán-sabraki mu(-ſun¹)-dù-a
 - 5 á lú 1-e
 - 6 še 4(bán) gur-ta
 - 7 ninda 2 sìla-ta
 - 8 kaš 2 sìla-ta
 - 9 ì 2 gín-ta-àm
- 10 ud 1-^ra¹ ur₅-gim šu ha-ba-an-ti
- 11 ud bala dùg-ga mu šag₅-šag₅-ga-gá-a
- 12 še 3(gur) gur-ta
- 13 zú-lum 10(gur) gur-ta
- 14 siki 15 ma-na-ta
- 15 ì-giš 2(bán)-ta
- 16 ì-šáh 4(bán)-ta-àm
- 17 ganba šag₄ Úrim^{ki} Larsam^{ki}
- 18 ù ma-da-gá-ka
- 19 kug 1 gín-e
- 20 ur₅-gim ha-ba-ra-sa₁₀
- 21 ^dSin-i-din-na-am
- 22 lugal nam-lugal-a-ni
- 23 kur-ra dirig-ga-me-en
- 24 $^{\Gamma}KA(?) DÉ(?) x^{1} uru-na$
- 25 dug₄-ga-ni ^rKAL(?) KI/DI¹-me-en
- 26 ud-ba Maš-gán-sabra^{ki}
- 27 ki dùg-ga
- 28 suhuš-bi hé-em-mi-gi-en
- 29 diri lugal ŠU palil(IGI.DU)-
- 30 mu-ne-šè
- 31 ki-tuš-bi hé-em-mi-dagal
- 32 íd $x x^{1} [...]-la$
- 33 šag₄ uru^{ki}-ba hu-mu-ba-al
- 34 un-un-bi
- 35 a dùg hu-mu-ne-nag

- 40 I made bricks (and built the city wall of them).
- 41–43 The name of the great wall is "Nergal destroys the enemy lands for me."
 - 1–2 In triumph I named it grandly with this name.
 - 3 When the great wall of
 - 4 Mashkan-shapir I erected,
 - 5 each worker the wages (in the amount) of
 - 6 40 liters of barley,
 - 7 2 liters of bread,
 - 8 2 liters of beer,
 - 9 (and) 1 liter of oil
 - 10 daily thus received.
 - 11 During my sweet reign of good years,
 - 12 3 bushels of barley,
 - 13 (or) 10 bushels of dates,
 - 14 (or) 15 pounds of wool,
 - 15 (or) 20 liters of sesame,
 - 16 (or) 40 liters of lard,
 - 17 in the markets of Ur, Larsa,
 - 18 and my whole land,
 - 19 one shekel of silver
 - 20 thus could buy.
 - 21 I am Sin-iddinam,
 - 22 the king whose kingship
 - 23 is the foremost one in (all) the lands.
- 24-25 the . . . whose orders are . . . in his city.
- 26–28 At that time I strenghtened the foundations of Mashkan-shapir, the sweet place.
- 29–31 (And when) I expanded its dwellings more than my . . . royal predecessors (had done it before me),
- 32–33 I excavated the . . . canal in the midst of the city.
 - 34 Its population
 - 35 I provided with sweet water to drink.

ii

- 36 ki-tuš ne-ha
- 37 「NIM(?) URU(?)¹ si hé-em-mi-sá
- 38 ud-ba níg-si-sá
- 39 dug₄-ga hu-mu-ni-sum-ma
- 40 níg-gi-na
- 41 inim-ta hu-mu-ni-gar
- 42 šag₄ ^dUtu lugal-gá-ke₄
- 43 hu-mu-dùg

- 36 A peaceful habitation
- 37 I put in order / set up in the Upper City? .
- 38–39 At that time, (as) I gave equity to (all) the deeds,
- 40–41 I established justice through (my) orders.
- 42–43 (In this way) I gladened the heart of Utu.

Commentary

i 3. The idiomatic expression δa_4 gú-bi-e gi₄-gi₄, "to overflow," denotes the action of an inside part ("heart") returning to and spilling over its outer limits ("neck" or "brim"), meaning specifically the core stream of a river returning to its flood banks, but also referring to the physical sensation of a human heart rising up and choking the throat. Hence its transferred sense "to overflow with emotion, to be overcome by emotion" (see Jacobsen 1987: 388–89 n. 6). The two nuances of this idiom are played on in the following two literary passages:

šag₄ gú-bi nam-gi₄ šag₄ ^dEn-líl-lá gú-bi nam-gi₄ šag₄ gú-bi nam-gi₄ a-gi₆-en-nam mul ní ÍL-ÍL šag₄ ^dEn-líl-lá-ke₄ ^{id}Idigna-àm a dùg-ga nam-de₆, "it did overflow, Enlil's heart overflowed with emotion; it did overflow, the high flood wave laden with shine and terror, Enlil's heart, the very river Tigris, brought in sweet waters" (Gudea Cylinder A i 5–9).

[ì-bí-éš šag₄] gú-bi nam-gi₄ kalam ki-bi hé-em-gi₄ [š]ag₄ ^dEn-[líl]-lá gú-bi nam-gi₄ kalam ki-bi hé-em-gi₄, "[at that time] it did overflow (and) the land was truly restored (to its former condition); Enlil's heart overflowed with emotion (and) the land was truly restored (to its former condition)" (*Enki and the World Order* 446–47 = Benito 1969: 113).

Compare also the following passage: kaš bur-ra gi_4 -a sag_4 gú-bi $[gi_4]$ -a ne-sag é-e-ka kaš b[ur-ra] gi_4 -a ... ù-mu-un ^dAm-an-ki-ke₄ šu [è-ba-šè] sag_4 -bi-šè mu-lu zi-dè gú-[bi mu-un-ši-íb-gi₄] mu-lu zi-dè mu-lu zi-zi-da-ke₄ gú-bi mu-un-ši-í[b-gi₄] ù-mu-un erim₆-ma kur-gal ^dMu-ul-líl gú-bi mu-un-ši-íb-gî nin erim₆-ma ama-gal ^dNin-líl gú-bi mu-un-ši-íb-gi₄, "the beer that has returned to the bowl, that has overflowed it, the first offering of the temple, the beer that has returned to the bowl, ... for (the temple where) Lord Enki offers prayers, the righteous man made it overflow, the righteous man, the most righteous of men, made it overflow; Oh Lord of the Storehouse, Great Mountain Enlil—he made it overflow! Oh Lady of the Storehouse, Great Mother Ninlil—he made it overflow!" (Kramer 1985: 120–21 lines 39–49, photos pls. II–IV).

Further, note the Ur III personal name Sag₄-gú-bi (Limet 1965: 526), which appears to be an abbreviation of *Šag₄-gú-bi-gi₄-a, and the lexical equation sag₄-gú-bi-gi₄-a = MIN (= nasi) sá MIN (= $m\bar{l}l$), "the rising of flood water" (Finkel and Civil 1982: 146 Nabnītu XVI 150).

i 7. Cf. ki-tuš-bi mu-na-an-dagal (Frayne 1990: 162–63 SI 5:18) and [ki]-tuš-bi daga[l-e-dè] (Frayne 1990, 164–66 SI 6:5).

i 8. For kàm(KAD₅), Akk. *nukkuru*, see Brinkman et al. 1980: 160a. For the form nu-kàm-meda specifically, see giri₄-zal nu-kàm-me-da in Römer 1965: 18 line 37, plus the examples and discussions listed ibid., 62 n. 141. **i 15–16.** The rebuilding of the Ebabbar is commemorated in the formula of Sin-iddinam's third regnal year: mu suhuš É-babbar-ra ba-dù. Several of Sin-iddinam's inscriptions (Frayne 1990: 160–69 SI 3, 4, 5, 6, and 9) deal specifically with this event; it is referred to also in Frayne 1990: 175–76 SI 14:6–8.

i 17–18. The excavation of the Tigris gave name to Sin-iddinam's second year: mu ^{id}Idigna ba-ba-al. This project is described in detail in Frayne 1990: 158–60 SI 2 and mentioned in Frayne 1990: 171–72 SI 11:12–19; 175–76 SI 14:12–18.

i 19–21. Cf. nidba dingir-re-e-ne šu du₇-du₇ (Frayne 1990: 177–79 SI 15:47–48) and ní tuku ^dA-nun-ke₄-ne nidba šu du₇-du₇ hé-a ud da-rí-šè (Frayne 1990: 168–69 SI 9:23–25).

i 22–23. For a-rá-ø kin, Akk. *alakta še'û*, "to seek the way," cf. imin-bi a-rá ba-an-zu ki-bi inkin-kin-gá sag na-an-gi ù-mu-un-na-an-sum = *alkakāti sibittišunu lamādu ašrātišunu šite'a ķišamma*, "come here quickly to learn the ways of the Seven and to search out their places" (Thompson 1903: pl. 45 lines 122–124).

i 24. Cf. éren dagal-la-na ù-dùg ku-ku-dè in Frayne 1990: 175-76 SI 14:23-24.

i 28. The line is reconstructed based on: $[g^{is}a]l g^{is}tubsig g^{r}a(?)-...^{1}$ (Source 2+), $g^{is}[...]$ (Source 44), $g^{is}a[1...]$ (Sources 39, 46+, and 69), $g^{is}[a1...]$ (Source 7+), $[...] g^{is}tubsig [...]$ (Source 56), $[...g^{is}tub]sig g[a(?)-...]$ (Source 57), and $[...-m]a(?)-rsum(?)-sum(?)^{1}$ (Source 52). For the reading tubsig of 1L, see Arnaud 1987, 72 line 265': tu-ub-si-ig 1L = tu-up-si-ik-ku.

i 29. The line is reconstructed based on: nam-bi [...] (Sources 39 and 46+), nam-[...] (Sources 7+, 44, and 69), and [...-ta]r-tar (Source 52).

i 30. The line is reconstructed based on: $e^{\text{GIS}(?)^{1}}$ [...] (Sources 39, 44, and 46+), $e^{\text{GIS}(?)^{1}}$ [...] (Sources 7+ and 69), and [...] x^{1} -ta (Source 52).

i 31. The line is reconstructed based on: gá-ra ma-[...] (Source 46), ^rgá-ra ma-íl¹ [...] (Sources 12 and 22), gá-ra [...] (Source 39), gá-ra [...] (Source 44), and [...] DU (Source 52).

i 33. The end of the line is reconstructed based on: [k]i kug-ga bàd-bi s[ag(?) x] (Source 22) and [...] il (Sources 31 and 87).

i 36–40. For this passage, cf. Frayne 1990: 164–66 SI 6:29–37, which describes the mobilization of the work force and the baking of bricks as part of the Ebabbar project: ugnim Larsam^{ki}-ma aš-bi um-mi-tuš/dab₅ á šag₄-gal ì-šeš₄ šag₄ dùg-ga-bi-dè lú-kin-ak-bi-šè ha-ba-sum-sum šag₄ mu 1-ka sig₄-al-ur₅-ra-bi hé-bí-du₈, "after I had assembled the forces of Larsa, I gave to them wages, food (and) anointing oil to make them happy as its (i.e., Ebabbar's) workers. I fired its (i.e., Ebabbar's) baked bricks in the course of one year." Cf. also Frayne 1990: 241–43 WS 21:80–82: muru₄-ba iti 5-àm ba-ra-ab-zal sig₄-bi hu-mu-du₈ bàd-gal-bi hu-mu-til, "in the middle of that (year), (as) the 5th month had passed, I baked the bricks; I completed that great wall." Cf. also Frayne 1990: 374–78 Samsu-iluna 3:61–64; 380–83 Samsu-iluna 5:59–61.

i 42. ha-ma-SUM.SUM.KI. KI is clear in Sources 5+, 17, and 34. Since the semantic indicator KI would be completely unusual in the name of a city-wall, a reading ha-ma-sum-sum^{ki}, "he has given to me (the enemy land)," is probably impossible. Accordingly, one has to assume that KI is part of the verb, which calls for a reading ha-ma-sì-sì-ke /he-mu-a-si(k)-sik-e/. A. R. George, originally in a private communication, and now in print (1996: 367 and n. 9), translates the whole name: "may Nergal parch for me the land of the foe," connecting sì-(k) with the lexical ^rim¹ sì-sì-ke = *ur-ru-u šá šāri* (IM), "to desiccate, of wind" (so George) (Finkel and Civil 1982: 226 Nabnitu XXV 84), and further comparing it with sì-sì-ke = MIN (= *tuh-hu-du*) šá *mer-si*, "to 'enrich,' of date-cake" (Finkel and Civil 1982: 221 Nabnitu XXIII 345). However, a much simpler explanation is that sì-(k) corresponds here to *sapānu*, "to level, to destroy, to devastate, etc." (Brinkman et al. 1984: 158). Although the resuming sign of sì = *sapānu* is usually GI, spellings with KI are also attested. Among those, of special interest is the occurrence in a hymn to Nergal, where sì-(k), as in our ex-

ample, is said of kur: a-m[a-ru] kur sì-sì-ke mu-ni-dug₄-ga, "you (Nergal) have commanded the flood which levels/destroys the lands" (van Dijk 1960: 36 line 18). Compare also the following attestations: uru gul bàd gal bàd-si-bi sì-ke, "the destroyed city, the leveled great wall with its battlements" (Michalowski 1989: 66–67 line 462); bàd im-sì-ke-a-aš, "to (see) how the walls are leveled" (Green 1984: 270 3.20); um-ma ab-ba é-ta nu-è-a izi mu-ni-in-sì-sì-ke-eš, "mothers and fathers who did not leave (their) houses were overcome by fire" (Kramer 1940: 42–43 line 228).

N.b. sì-sì-ke = $urr\hat{u}$ of Nabnitu XXV 84 is apparently the same verb as sì-sì-ke = $sap\bar{a}nu$, with $urr\hat{u}$, "to make barren, to cut down" (rather than "to parch, to desiccate," as translated by George) being understood as a synonym of $sap\bar{a}nu$. If the same Sumerian lexeme is involved in both cases, one should also include here the verb sig₈(GAD.TAK₄.GIŠ), which too is equated with $urr\hat{u}$: s^{i-ig}GAD.TAK₄.GIŠ = ur-ru-u (Finkel and Civil 1982: 226 Nabnitu XXV 85); [si-iq]-qa GAD. TAK₄.GIŠ = mu-ru-u (Hallock 1955: 116 S^b I 230); [si-ig(?) GAD].TAK₄.GIŠ = ur-ru- \hat{u} (Civil, Green, and Lambert 1979: 320 Aa 16:19). Cf. von Soden 1965–81: 1497a under $wurr\hat{u}m$, $urr\hat{u}$ III, $murr\hat{u}$ D. In this connection, note further that both $sap\bar{a}nu$ and $er\hat{u}$ (= $urr\hat{u}$) are given as the equivalents of the verb sù-sù-(g), "to be barren, to make barren" (Brinkman et al.1984: 158; von Soden 1965–81: 247b under $er\hat{u}(m)$ V), which may belong here as well.

ii 3–10. The records of daily wages paid to the workers employed on a given project are a feature that is unique to Larsa building inscriptions. Other examples are Frayne 1990: 147–49 NA 7:64–70; 158–60 SI 2:51–59; 164–66 SI 6:49–57; 239–40 WS 20:40–44; and 241–43 WS 21:96–100.

ii 4. The variant $-^{r}un^{1}$ - is preserved in Source 17.

ii 6. 4(bán) is clear in Sources 5+ and 18.

ii 11–20. The only other Larsa building inscriptions recording current tariffs are Frayne 1990: 147–49 NA 7:57–63; 164–66 SI 6:58–69.

ii 13. 10(gur) is clear in Source 14.

ii 15. 2(bán) is clear in Source 14.

ii 16. 4(bán) is clear in Sources 2+ and 14.

ii 24. The line is reconstructed based on: $[KA(?) DÉ(?) \times uru^{1}-[x]$ (Source 2+), $[KA(?) DÉ(?) \times 1$ [...] (Source 26), $[x x^{1} [x] uru-na$ (Source 46+), [... ur]u-na (Source 16), and [...]-na (Source 30, 41+, and 75). The first two signs appear as in Source 2+, and as in Source 26. The obvious reconstruction of the beginning of the line would be gù dé-a, but it does not yield any good sense.

ii 25. The line is reconstructed based on: dug_4 -ga-ni ^rKAL(?) KI/DI¹-me-en (Source16), $[dug_4]$ -ga-n[i] ^rKAL(?) KI/DI¹-me-en (Source 46+), dug_4 -ga-ni ^rKAL(?) x¹-[x-x] (Source 2+), dug_4 -ga-ni [. . .] (Source 26), dug_4 -[. . .] (Source 35), [. . .]-^rx¹-me-en (Source 41+), and [. . .]-me-en (Source 30). The signs read here as ^rKAL(?) KI/DI¹ are best preserved in Source 46+ (see photograph). I can offer no suggestions for a possible reading.

ii 29. ŠU is clear in Sources 15, 16, and 46+ (see photos). However, unless one interprets it as the Akkadian relative-determinative pronoun δu (which is rather unlikely), δU is redundant in this context. Cf. lugal IGI.DU-na-ne in Frayne 1990: 170–71 SI 10:10.

ii 32. The line is reconstructed based on: id [. . .] (Source 53), id [. . .] (Source 35), [. . .] ^{rx} x¹ [. . .] (Sources 30 and 31), [. . .]-la (Sources 16, 41+, and 64). A possible reconstruction of the line would be id GN id hé-gál-la / gu-la, by analogy with Frayne 1990: 158–60 SI 2:40, 51.

ii 36. Cf. ma-da-na ki-tuš ne-ha tuš-ù-dè (Frayne 1990: 175-76 SI 14:21-22).

ii 37. The line is reconstructed based on: [NIM(?) URU(?)] si [hé-em-mi-sa] (Source 31), [NIM(?) URU(?)] [...] (Source 87), [...] si hé-[...] (Sources 34 and 93), [...-m]i-sa (Sources 41+45), and [...]-sa (Source 73). The first two signs appear as [M] [M] in Source 31, and as

in Source 87. The reading 'NIM(?) URU(?)¹ is only provisional. A reading da(!)-rí, suggested by T. Jacobsen (personal communication), is unlikely.

ii 42–43. Cf. šag₄ ^dUtu ù ^dŠè-ri₅-da-ke₄ hu-mu-dùg (Frayne 1990: 164–66 SI 6:76–78); šag₄ ^dUtu ù ^dDumu-zi-bi mu-un-dùg (Frayne 1990: 175–76 SI 14:34–35).

A Brick Inscription of Amar-Sin

(a) AbD 87-310 = IM 108783. Length 34 cm, width 34 cm—broken.

(b) AbD 87-311 = IM 108783. Length 34 cm, width 34 cm—broken.

(c) AbD 87-312 = IM 108783. Length 34 cm, width 34 cm—broken.

Three incompletely preserved mud bricks stamped with a standard, nine-line building inscription of Amar-Sin. The best preserved is source (a), which shows the whole inscription. Source (b) has the last two lines; source (c) preserves the left section of the first six lines.

The inscription corresponds to the text published by Steible (1991: 218–21 Amar-Suen 2; Frayne 1997: 245–47 Amar-Sin 1).

- 1. ^dAmar-rdSin(EN.ZU)¹
- 2. Nibru^{rki}−a¹
- 3. ^dEn-^rlíl-le¹
- 4. mu ^rpàd-da¹
- 5. sag-ús
- 6. é ^{dr}En-líl-ka¹
- 7. nita kalag-ga
- 8. lugal Úrim/^{ki}-ma
- 9. lugal ^dUb-da / limmu-ba

A Building Inscription of Zabaya

AbD 88-280 = IM 114800. Length 5.9 cm, width 3.2 cm, thickness 1.5 cm. See fig. 101.

Fragment of the head of an inscribed clay cone. No part of the shaft (almost certainly uninscribed) is extant. The surviving portion of the inscription closely parallels one published by Frayne (1990: 111–12), which is a stamped brick recording the building of the Ebabbar temple at Larsa. The present text was previously edited by Frayne (1990: 112 Zabaya 2).

- 1. *Za-ba-a-[a]*
- 2. NITA KALAG.[GA]
- 3. *ra-b*[*i-an* MAR.TU]
- 4. [DUMU Sa-mi-um] (rest destroyed)

Lines 3–4 are restored based on Frayne (1990: 111–12 Zabaya 1), the only other inscription of Zabaya in existence. By analogy with that source, the present inscription may have continued as follows:

- 5. [Building Name]
- 6. [*i*-pu-uš]

For the title rabiān MAR.TU, see in detail chapter 3, p. 35.

Apart from these two inscriptions of Zabaya, there also survives a seal belonging to his servant (Frayne 1990: 112–13 Zabaya 3). In addition, note the possible mention of Zabaya in a fragmentarily preserved early Old Babylonian letter(?) from Girsu (Arnaud 1977: 3–4 AO.4324). Following a listing of slaves and various commodities that were "sent down to Isin" by three(?) individuals $(\ldots u\check{s}-ta-ri-id$ (lines 1'–2'), 1 ÁRAD MU.DU ^dSin(EN.ZU)-b[a(?)-ni(?)] a-na I-si-in^{ki} u\check{s}-ta-r[i-id] (lines 3'–4'), 2 ÁRAD ... 2 SÌLA LÀL 2 SÌLA Ì.NUN 2 SÌLA ^rx¹ ša A.TIR SÁ.DUG₄ ^dBa-ú Ib-^rni(?)¹–[...] a-na I-si-in^{ki} Ì-lí-TAB.BA-e uš-[ta-ri-id] (lines 6'–9')), this document reads: uš-tu Za-ba-a-a be-lí i-na ^{giš}GU.ZA-im uš-bu-ma a-ni-a-am kà-la-ma ^ri-din(?)¹, "since my lord Zabaya sat on the throne, this is all that he has delivered(?)" (lines 10'–12').

Yet another inscription of Zabaya has now been published by Farouk N. H. Al-Rawi, "Tablets from the Sippar Library X: A Dedication for Zabaya of Larsa," *Iraq* 64 (2002) 247–48. It is a Neo-Babylonian copy of a votive inscription for Zabaya's life, which was dedicated to the goddess Nanshe by the diviner Dan-Tutu. Importantly, this text confirms that the Larsa dynasty controlled the province of Girsu/Lagash since the very beginnings of its history (cf. chapter 3, p. 37).

An Old Babylonian Building Inscription of an Unidentified Ruler

AbD 87-134. Diam. 11 cm. See fig. 102.

A fragment of the head of an inscribed clay cone. No part of the shaft is extant. Judging from the curvature of the surviving edge, the diameter of the head was ca. 10 cm (certainly not less than 9.5 cm and not more than 10.5 cm). The inscription, of which only the left section survives, contained no more than 12 lines in a single column. There is no way of telling whether the shaft was also inscribed.

The only thing that is clear about the inscription is that it is written in Akkadian and that it dates to OB times. Very frustatingly, not a single line of it can confidently be restored. The surviving signs may be read as follows:

1'. ^rx x¹ [...]
 2'. DUMU [...]
 3'. BÀD [...]
 4'. ša IŠ(?) [...]
 5'. UG-T[I(?)-...]
 6'. la ^ri(?)¹-[...]
 7'. ^dKIŠ(?).[UNU.GAL(?)]
 8'. ra-[...]
 9'. im-[...]
 10'. i-[pu-uš(?)]
 (probably nothing missing)

It appears that no more than one line is missing at the beginning. The sign DUMU in line 1' could indicate that the inscription began with the name of a ruler. If so, a possible restoration of the beginning could conceivably be: [Ku-du-ur-ma-bu-uk] / a-bu [E-mu-ut-ba-la] / DUMU [Si-im-ti-ši-il-ha-ak], for which cf. Frayne 1990: 267–68 Kudur-mabuk 2:1–3. Unfortunately, no connected restoration of the following lines can be made. It is possible that the cone's shaft was inscribed, too. If so, the present inscription would represent either the beginning or the very end of a much longer text. Lines 4' and 5' possibly constitute a single line.

Miscellaneous Inscribed Fragments

A Fragment of an Inscribed Alabaster Vessel

AbD 87-10 = IM 108805. Length 7.1 cm, width 3.8 cm, thickness 1.0 cm. See fig. 103.

The fragment preserves the middle section of the first line: $[...]^{r}x^{1}GA^{r}x^{1}[...]$

An Inscribed Calcite Fragment

AbD 87-4. Length 3.8 cm, width 1.75 cm. See fig. 104.

The fragment preserves the middle section of the first four lines.

Line 1: [... A]N(?) UR(?) [...]

An Inscribed OB Cylinder Seal

AbD 87-124 = IM 108847. Length 1.65 cm, diameter 0.95 cm. See fig. 105.

1. Ka-na-zu(?)

2. DUMU Ma-x

A Fragment of an Inscribed Cylinder Seal

AbD 87-77 = IM 108854. Width 1.8 cm, height 1.6 cm, diameter 1.8 cm. See fig. 106. The fragment preserves the right section of a two-line inscription.

1. [...]-AB(?)

2. [...]-GA(?)

A Pottery Fragment Impressed with an Inscribed Stamp

AbD 90-573. Width 5.5 cm, height 5.2 cm. See fig. 107.

The impression (in negative?) preserves the right section of a two-line inscription. The upper line possibly reads: É ^d[DN]. The signs in the lower line are illegible.

A Fragment of an Inscribed Cylinder Seal

AbD 90-582. Width 1.3 cm, height 1.1 cm, diameter 0.5 cm. See fig. 108.

The fragment preserves the right section of a two-line inscription. Illegible.



Fig. 78. Fragment #1 (67%).

Fig. 79. Fragment #2 (67%).



Fig. 80. Fragment #2 (67%).



Fig. 82. Fragment #7 (67%).



Fig. 84. Fragment #9 (67%).



Fig. 81. Fragment #6 (67%).



Fig. 83. Fragment #8 (67%).



Fig. 85. Fragment #12 (67%).



Fig. 86. Fragment #13 (67%).



Fig. 87. Fragment #13 (67%).



Fig. 88. Fragment #14 (67%).



Fig. 89. Fragment #14 (67%).





Fig. 90. Fragment #15 (67%).

Fig. 91 (right). Fragment #17 (67%).



Fig. 92. Fragment #18 (67%).



Fig. 93. Fragment #18 (67%).



Fig. 94. Fragment #33 (67%).



Fig. 95. Fragment #46 (67%).



Fig. 96. Fragment #87 (67%).



Fig. 97. Fragment #89 (67%).



Fig. 98. Fragment #91 (67%).



Fig. 99. Fragment #92 (67%).



Fig. 100. Fragment #92 (67%). Fig. 103. AbD 87-10 (67%). Fig. 102. AbD 87-134 (67%).



Fig. 105. AbD 87-124 (133%).



Fig. 106. AbD 87-77 (133%).



Fig. 104. AbD 87-4 (133%). Fig. 107. AbD 90-573 (133%).





Fig. 108. AbD 90-582 (133%).

Chapter 8 Locational Data

In this chapter we review the basic survey data on a hectare-by-hectare basis, with facing maps and images in which findspots of small finds, scatters of surface debris, and architectural remains are plotted. The limitations of our imaging procedures are discussed in general terms in chapter 4. In this chapter, discussion will be limited to a description of each square, an explanation of how aerial images and surface observations were integrated, and comments on specific problems with individual images. We also note where particular objects are associated with identifiable surface scatters and suggest possible interpretations for them. Where more specificity in locational information is needed, we have utilized the same system of designators that we used in our excavations, the division of the square into a hundred sub-squares, designated Units 0 to 99 (fig. 110), numbered from left to right and from top to bottom. In essence, the discussion is a supplement to the maps and images, which carry the primary information.

The maps were compiled by comparing the kite photographs with the notes of the individuals who walked each quarter hectare. These are essentially complementary sources, and in most cases they are in harmony. However, the surveyors sometimes recorded features that do not appear in the aerial photograph, and at other times the aerial photograph shows something that the surveyor missed. Moreover, in spite of our efforts at consistency in the survey notes, individual surveyors had their own idiosyncracies, and some squares, especially some of those surveyed in 1987, provide less detail than we would have liked. The primary purpose of the text is to explain our reasons for drawing the map as we did. The maps have been drawn using the same conventions throughout (figs. 109–110). A series of aerial photographs were taken of part of the site one day after a rain. A plan based on them is found at the end of the chapter (fig. 281), and two examples (figs. 112, 144) have been added in the text where needed to match the text with the appropriate images. A list of object numbers organized by the square they were found in is included in Appendix 4.

Square 6B (fig. 111)

This square, the northwesternmost surveyed, is the only one for which we have no photographic images at all. Thus, the map is entirely drawn from the records of ground survey. The northwestern quadrant was not included in the survey because it appeared to be off site, and the conventions used for this area are extrapolations from the northeast and southwest quadrants. In retrospect, it seems likely that, had this quadrant been surveyed, one or two artifacts might have been found and, more significantly, it might have been possible to gain a better understanding of the alignment of the city wall, traces of which were picked up in the southwest quadrant.

The square as a whole is dominated by Canal A, which slices through the northern portion of the site. In view of its alignment with first-millennium A.D. sites in the area, we date this canal to the Parthian, Sasanian, and Early Islamic periods. Evidence that Old Babylonian occupation extended north of where this canal was later cut is seen in the extensive surface scatter of ceramics and

Key for Plans of Survey Squares

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High Density Sherds	⊶	Model Bed with Nude Female	◙	Pierced Ceramic Object
Medium Density Sherds	Î	Female Figurine	¢	Miscellaneous Ceramic Object
Low Density Sherds	Å	"Snowman" Figurine		Spindle Whorl
High Density Bricks	ج	Figurine in Pain		Stone Bowl
Medium Density Bricks	%− ∧	Animal Figurine		Stone Jar
Low Density Bricks	ᡘ᠆᠕	Horse and Rider Figurine	F	Cylinder Seal
Overfired Clay	Å	Incised Figurine	00000	Stone or Shell Bead
Pithos Sherds	Î	Nude Female Plaque	\bigtriangleup	Stone Amulet
Glass and Glazed Sherds		Elaborate Nude Female Plaque		Stone Cuboid
Sand	K	Nude Male Plaque	\bigcirc	Hexagonal Grinder
Fine SiltCanal Bed	Å	Clothed Male Plaque	D	D-shaped Grinder
Normal Tell Surface	<u>እ</u> የ ነ	Presentation Scene Plaque		Synthetic Basalt Grinder
Kiln Wasters	<u>}</u>	Lion Plaque	Ĭ	Flattened Grinder
Mud Brick	怱	Religious Plaque	\boxtimes	Miscellaneous Grinder
Cuprous Slag		Miscelleneous Plaque		Whetstone
Modern Disturbance		Model Chair with Architecture	0	Stone Donut
Car Track	XX	Model Chair with Figure	\bigcirc	Balance Weight
Baked Brick Wall	XX	Model Chair with Couple	0	Duck Weight
Mud Brick Wall	(* *)	Ceramic StatuaryHuman Head	00	Pierced Stone Weight
Ceramic Bowl		Ceramic StatuaryLion Head	\bigcirc	Stone Palette
Ceramic Jar	L,	Ceramic StatuaryHuman Foot	QD	Stone Macehead
Ceramic Goblet	K	Ceramic StatuaryHorse Foot	\Box	Stone Mortar
Pithos Jar	M	Ceramic StatuaryHuman Hand	\square	Stone Pestle
Ceramic Incense Burner		Ceramic StatuaryAnimal Paw	\bigcirc	Stone Anchor
Ceramic Bottle Stop	ñ	Ceramic StatuaryLimb	0	Stone Axe
Ceramic Potstand	Ô	Ceramic StatuaryBody Fragment	Ũ	Stone Blade
Ceramic Lid	•	Miscellaneous Ceramic Statuary	Û	Stone Core
Ceramic Table	(\mathbb{D})	Barrel Cylinder	\bigstar	Miscellaneous Stone Tool
Undecorated Model Chariot Shield	Ţ	Inscribed Clay Nail	Ø	Stone Disc
Chariot Shield with Lion Sickle		Inscribed Brick	_	Sling Stone
Chariot Shield with Lion Mace	9	Ceramic Axe	Δ	Cone
Chariot Shield with Shamash	()	Ceramic Rattle	滋	Miscellaneous Stone Object
Chariot Shield with Nergal	Y	Ceramic Trinod		Synthetic Basalt Chunkj
Model Chariot Base	\bigcirc	Ceramic Loom Weight		Rock
Small Model Wheel	RA	Ceramic Mold	0	Copper/bronze Ring
Large Model Wheel		Ceramic Sickle	\bigcirc	Copper/bronze Bracelet
Model Boat			\bigcirc	Copper/bronze Earring
Model Bed with Springs		Brick	Q	Miscellaneous Jewelry

Fig. 109. Key for maps in chapter 8.

Key to Survey Square Maps Cont.

Ð	Copper/bronze Disk	Ϊ	Copper/bronze Hinge or Buckle	Ō	Glass Vessel
\sim	Copper/bronze Vessel	Ģ	Copper/bronze Spade	$ \mathbf{O} $	Glass Bead
$\hat{}$	Copper/bronze Sickle	€	Copper/bronze Blade	O	Miscellaneous Glass Object
Ŷ	Copper/bronze Needle	\bigcirc	Miscellaneous Flat Copper/bronze Object	Ċ	Islamic Pipe
Δ	Copper/bronze Chisel	*	Miscellaneous Copper/bronze Object	0	Late Pot or Bowl
ى	Copper/bronze Fishhook	✦	Iron Object	ж	Miscellaneous Late Object
1	Copper/bronze Harpoon	☆	Lead Object	\Box	Slipper Coffin
	Copper/bronze Spear or Arrowhead	0	Shell Ring	\square	Bathtub Burial
×	Copper/bronze Nail or Pin	0	Glass Bracelet	C	Late Grave
				علد	Camelthorn

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

Divisions of Survey Squares



٢ \bigcirc \odot (\mathbf{D}) \odot \bigcirc \bigcirc ¢ \odot

Fig. 111. Map 6B.

in the presence of objects such as chariot wheels and, more diagnostically, a chariot base and cuboid grinder. A bathtub burial found to the north and the glass weight or ingot (AbD 90-662) from south of the canal are evidence of later activities.

The areas of denser sherd concentration both north and south of Canal A include a certain amount of slag, particularly in one location, perhaps indicating that the edge of the Old Babylonian city was used for the production of ceramics or synthetic basalt. It may not be coincidental that a ceramic table fragment was found in this area.



Fig. 112. Aerial photograph taken after rain with a street and associated mud-brick architecture visible.

In general, this square represents the northwest corner of the site, which was badly disturbed when Canal A was cut. The two parallel lines of mud brick in the southwest are almost certainly part of the ancient city wall, which, unfortunately, cannot be traced farther to the north and east. Surface evidence suggests the presence of some workshops in this area, and the model chariot fragments may be indicative of other activities as well.



Fig. 113. Map 7B.

Square 7B (figs. 113–114)

Only the northeastern portion of this square was photographed, and the image quality is low because it comes from the edges of negatives. There is also a faint scanning line in the bottom right.

As in 6B, the dominant feature of this square is Canal A, near which there are some late ceramics mixed in with the Old Babylonian materials. The density of the latter is greater in the



Fig. 114. Photo, Square 7B.

northwest than in the northeast, suggesting a location for the edge of occupation. No traces of the city wall can be detected in the image. A dense brick and sherd scatter north of the canal toward the east probably represents the remains of a baked brick building, of which the details are unclear. The surveyors noted more over-fired material than is usually associated with areas of high sherd density, especially in the southeast quadrant.



Chapter 8

Fig. 115. Map 8B.

Square 8B (figs. 115-116)

Only the southern half of this square was surveyed, since there were no signs of habitation in the north. The map of the northern portion is therefore based entirely on the aerial photographs. Two scanning lines run northeast to southwest in the image; the other white lines represent modern tracks. Where we have both survey data and imagery, no discrepancies can be observed between the two sources.

This square is also dominated by Canal A. The baked-brick mounds along its northern bank (in Units 72–74) may be the remains of construction, but it is not clear how they are to be dated since



Fig. 116. Photo 8B.

little in the way of late ceramics—and no late objects—were found in this square. To complicate our interpretation, the aerial photographs suggest that these baked-brick mounds may even be partially within the bed of Canal A. They are more or less opposite, and perhaps related to, a higher mound on which there is a baked-brick structure along the border with Square 8C (in 8B Units 92–93, 8C Units 2–3) that is itself almost certainly late but is built on what may be the remains of an earlier structure. Thus, the baked-brick mounds might be the remains of Old Babylonian buildings sufficiently sturdy to stand up to the erosional actions of the canal, or more likely, later structures associated with a bridge or other crossing of Canal A.


Fig. 117. Map 5C.

Square 5C (figs. 117–118)

Two faint, curved scanning lines are visible in this image, running more or less east-west. Although much of this square was obscured by a large sand dune, the edge of dense settlement running from Units 7 to 70 can be easily made out. Paralleling this in Units 8, 17, and 26 is a line, visible only from the air, which is almost certainly the remains of the city wall. Numerous car tracks and the sand dune obscure this feature further to the southwest.

The furrow marks of ancient fields can seen in the western part of the square where they are not hidden by dunes, and they are also visible in small patches south of the primary sand dune.



Fig. 118. Photo 5C.

Feeder channels one meter wide can be identified, and the furrows themselves are 60 cm. apart. The latest date to which they can be assigned is the early Islamic period, since there is no evidence for water in this part of the desert afterward. This is consistent with the evidence of field scatters collected by Wilkinson (see Appendix 2).

Apart from the traces that we interpret as the city wall, the surveyor's observations correspond well with the aerial photographs. The small number of objects—and their variable date—is consistent with the peripheral nature of this area.



Fig. 119. Map 6C.

Square 6C (figs. 119–120)

The northern portion of this square was inadequately photographed, and the distortion that is very apparent where automobile tracks cross lines between aerial photos is a consequence of the curvature at the extreme edges of imagery taken with a 28 mm. lens.

By and large, sherd scatters were thin in 6C, appearing only in patches where the surface was not obscured by dune, although there was slightly more consistent sherd scatter in the south. The



Fig. 120. Photo 6C.

most notable feature is the remains of a baked-brick building located in Unit 44. Within it, the tops of a number of vessels were seen breaking the surface, an indication that the floor of this building is perhaps no more than 20 cm. below. It is possible that more of the building is preserved beneath the sand of the dune that was intruding on its walls when the photograph was taken. The artifacts recovered from this square were fairly mundane, although there was a good deal of surface copper.

Chapter 8



Fig. 121. Map 7C.

Square 7C (figs. 121–122)

Much of the north-central part of 7C was not photographed, and the survey notes indicate that it was of no particular interest. Evidence for denser settlement appears in the east, where the remains of baked-brick architecture was found, most notably the probable remains of a baked-brick building in Unit 99.

There was little inconsistency between the survey data and the aerial photography. The exception was the area of denser sherd coverage in the southwest which was not recorded during the survey. It was, however, noted in the survey of the adjoining square (6C) and is clearly visible in the photograph.



Fig. 122. Photo 7C.

The objects from this square are all typically Old Babylonian and include a damaged cylinder seal, stone bowls, and model chariot fragments.

Square 8C (figs. 123–124)

There was good aerial coverage of this square, but some scanning lines appear in the composite image of the northern half, running northwest–southeast. Except in the northeastermost corner, the whole square shows evidence of quite heavy, consistent occupation. The only major feature not recognized during the survey—though visible in aerial photographs—is a strip of dense sherds in Units 22, 31, 32, and 41.



Fig. 123. Map 8C.

The building on the border with 8B is located on one of the highest parts of the site, a steep rise that reaches 5 m above the level of the plain. There is no artifactual evidence to date this structure to the later occupation of the site, but its location on the edge of Canal A, which we believe to be late, and the peculiar color of its baked bricks (purple and light green) argue against an Old Babylonian date. In any case, it may overlie an important early building, and the canal may well have been placed where it is because this mound was a substantial obstacle. In the northeast of the square, Old Babylonian sherds thin out 10 m or so south of Canal A, indicating that the canal was dug along the edge of an existing mound. The ridge of sherds noted from the air and described above is apparently the remains of a street dating to the Old Babylonian period. This headed directly toward the mound, which was probably already an important feature when it was built. The



Fig. 124. Photo 8C.

baked brick remains on the far side of Canal A in Square 8B may also have been connected with this road and not with the canal. With neither post Old-Babylonian artifacts nor concentrations of late ceramics and glass in evidence, no occupation can be associated with Canal A in this square.

There are numerous brick features in 8C but, with the exception of one structure in Unit 81 and another in Unit 51 beside the road, they cannot be resolved into actual buildings. Scattered concentrations of pithos sherds appear to mark the locations of graves, and there are several clusters of ceramic slag and kiln wasters.

The artifacts from this square are all typically Old Babylonian: model chariot wheels, pots, a clay plaque, etc. Some craft activities are suggested by the surface scatters, two ceramic tables and a cuboid stone.



Fig. 125. Map 9C.

Square 9C (figs. 125-126)

Aerial coverage of the southwestern portion of this square was not good, and there are pronounced differences in contrast between spliced images. Faint scanning lines appear in the image of the southern portion of the square, where there is also considerable distortion, as well as in the northeast corner.

Dense occupation is concentrated in the southwestern portion of 9C, and the northeast quadrant was not surveyed because it appeared to be off of the site. By and large, the only significant



Fig. 126. Photo 9C.

feature in this square is the high sherd density just south of Canal A. In this there was a concentration of slag with a pile of kiln wasters beside it, which must represent an ancient kiln of uncertain date. Apart from a brass rod found by the canal, there is no evidence for any late occupation here. One pithos jar and several concentrations of pithos sherds in the southwest of the square may indicate the presence of Old Babylonian graves. The other objects are primarily utilitarian.



Fig. 127. Map 3D.

Square 3D (figs. 127–128)

This square was not surveyed. The plan is based entirely on aerial photographs, and the surface objects recorded in it are chance finds rather than the fruits of deliberate collection. Three canals converge in this square: B, D, and G, although the actual intersection between Canals B and G lies just outside of it, in Square 4D. Beyond the site, Canal B is marked by a line of vegetation along which sand has accumulated. The intersection of Canals B and D is complicated: the vegetation associated with Canal B continues uninterrupted as it crosses Canal D. This leaves the immediate impression that Canal D is cut by and therefore precedes Canal B, but this is not necessarily the



Fig. 128. Photo 3D.

case. The enhanced growth of modern vegetation would follow the line of the deeper canal, whether or not it had been cut by a later canal. Although it would be necessary to excavate this intersection to be certain, it seems probable that Canal D was contemporary with the late occupation of the city, whereas Canal B seems indubitably Old Babylonian in date. It is, however, also possible that Canal D formed a moat around the site and was in fact contemporary with the second-millennium occupation.

The edge of the mound is marked by evidence of late occupation and was drawn from the information in the aerial photograph and survey data from Squares 4D and 3E.



Fig. 129. Map 4D.

Square 4D (figs. 129–130)

In this square, the path of the canals, somewhat obscured by sand, was less clear on the ground than from the air. Both sand and the general wash from the high mound in the southwest make it difficult to establish how they relate to each other. Canal B, which flows more or less west to east, crosses Canal G. In view of the slope of the land and the location of the main river, the latter must have run northwest to southeast. We would not expect canals built at the same time to cross each other in this way, and the overall layout of Canal B suggests that it post-dates the rest of Mashkanshapir's canal system. However, its relationship to Old Babylonian roads and architecture within the site are all indicators that it formed part of the early second-millennium canal system. In this case,



Fig. 130. Photo 4D.

the aerial images cannot resolve which channel cuts which, and only future geomorphological testing can settle the issue.

Although the survey notes indicate the presence of late ceramics in all parts of this square, it seems likely that only the high area in the southwest represents actual Partho-Sasanian occupation, and the sherds to the north and east originate from that mound. The dense baked-brick and sherd scatters in the southern half of the site are probably the remains of Partho-Sasanian buildings.

Five coins were recovered in the square, but there were also Old Babylonian objects, including parts of model chariot wheels. The Partho-Sasanian occupation was thus founded on a preexisting Old Babylonian settlement area.



Fig. 131. Map 5D.

Square 5D (figs. 131–132)

The main features in this square are Canal B and Canal G, the latter obscured in places by the sand accumulating over its bed. Sherd density is low in the center and especially in the eastern portion of the square, where the modern track runs. While it is possible that the track represents an area where a late, Partho-Sasanian canal ran through the site, there is no trace of the levees that one



Fig. 132. Photo 5D.

would expect to find if this were the case. The sand dunes and camelthorn, though, are typical of low-lying areas. A thin scatter of late debris was noted, too sparse to justify considering this an area of late occupation. The surface objects, with the exception of one coin, all date to the Old Baby-lonian period or earlier and do verify an early second-millennium occupation in this square—albeit a thin occupation.



Fig. 133. Map 6D.

Square 6D (figs. 133-134)

Photographic coverage of the southwestern part of 6D was somewhat limited, but there are no major difficulties with the image other than the usual scanning lines. Like Square 5D, this square shows evidence of dense settlement on both sides of Canal B and a broad area with little evidence for occupation to the south of it. The remains of one baked-brick building was identified in Unit



Fig. 134. Photo 6D.

67, perhaps associated with a copper workshop in view of the associated concentration of copper and copper slag.

Stone bowls and model chariots fragments testify to early second-millennium B.C. occupation. There were also glass bracelet fragments, which appear to be part of the same concentration that appears in 7D.



Fig. 135. Map 7D.

Square 7D (figs. 135-136)

In this square, a branch canal, Canal C, runs southwestward from Canal B. The ridges formed by the levees on both sides of this channel were noted in the ground survey. To the east of this, in Units 18 and 19, there is evidence of dense, baked-brick architecture on the south levee of Canal B, although no structures could be made out from the bricks. In the aerial photographs, traces of narrow ridges of high sherd density can be seen running both parallel and at right angles to Canal G, and, as noted above, such features are almost certainly streets. In Units 55, 56, 65, and 66 traces of a quite sizeable building aligned along one of the streets were visible from the air.



Fig. 136. Photo 7D.

The area between the streets and the canals was covered with ceramic slag and kiln wasters, including two large concentrations of slag that are probably the remains of kilns. It may be that Canal C was dug to provide water for ceramic production since this association between the remains of ceramic production and a small canal has also been observed in Squares 5J to 7J.

The artifacts from this square fall into two categories. On the one hand, there are typical Old Babylonian objects—balance weights, chariot fragments, cuboids and the like. Second, a series of glass bracelets was concentrated in the southwestern part of the square. In the absence of other evidence of late occupation, such as characteristic sherds or glass, and given the very late, Ottoman date of these bracelets, they are more likely to have been left by nomads than by permanent settlers.



Fig. 137. Map 8D.

Square 8D (figs. 137–138)

Apart from a scratch in the negative in the southwestern part of the square, the image is of good quality. The most significant feature of this square is Canal B, along which sherd density is high. Noteworthy are two sets of baked-brick features on either side of the canal in the northeast quadrant of the square (Units 16 and 19, respectively). A little to the south of the easternmost, in Units 29 and 39, is another baked brick-feature. It is not at all certain what these represent. In some ways,



Fig. 138. Photo 8D.

they look like a gate complex, but there is no trace of the city wall in this area. Camelthorn growing in its bed suggests that the canal was deep here, so it is possible that some or all of these features, as well as a similar group in 10D, are the remains of water control devices.

Most of the finds from this square were Old Babylonian. They include the remains of a number of pithoi that might have served as burial jars. Traces of a baked-brick building were encountered in Unit 81, and the area of high sherd density near the center of the square in Units 35–36 and 45–46 is probably the remains of a mud-brick building.



Fig. 139. Map 9D.

Square 9D (figs. 139–140)

The density of sherds east of the baked brick features built on either side of Canal B in Square 8D testifies that the Old Babylonian site extended into this area. It is greatest near the canal, but there are also pockets of high sherd density further south. Evidence for ceramic manufacture in the form of thinly scattered kiln wasters and slag was seen on both sides of the canal. A kiln could be seen immediately to the north of the canal in Unit 29 and extending into Square 10D, but the only kiln wasters are found on the other side of the canal, in Units 42 and 43. Fragments of five ceramic tables were also found, and it is possible that these objects have something to do with pottery manufacture.



Fig. 140. Photo 9D.

Evidence for ceramic production thins out as one moves southward in the square, but traces of both baked brick and mud brick buildings were observed there. The high density scatter of baked bricks seen in the northwestern part of the square probably reflects the recording practices of an individual surveyor, although this corner clearly did display remains of baked brick construction on both sides of the canal.

Square 10D (figs. 141-142)

Though much of this square is covered by one image, that image is of poor quality—a badly scratched negative with very low contrast and pronounced darkening of the corners.



Fig. 141. Map 10D.

Only in the westernmost part of the square is there much evidence for occupation and the rest seems to be off site. The large kiln located to the north of the canal in Square 9D extends into Unit 20 of this square. Canal B is still visible, but as it leaves the settlement area, it is marked not by a silty area with levees on both sides, but by a line of camelthorn as in Square 3D. At the boundary of the settled area in Units 22, 32, and 42, there is a pair of bricky mounds on both sides of the canal, perhaps the remains of a water gate of some kind.

Immediately outside this "water gate" are the traces of a small canal, Canal E, which runs SSE from Canal B. Neither the aerial photograph nor the survey notes give any indication that this channel continued to the north. This poses a distinct problem. This canal is clearly quite late because in Square 11F it is seen to cut across another canal which is probably Partho-Sasanian, suggesting a



Fig. 142. Photo 10D.

probable early Islamic date. If so, however, we would expect it also to cross Canal B which seems to be unequivocally Old Babylonian. Since it served as a feeder canal for an irrigation system on the eastern edge of the ruins of the Old Babylonian mound, it may be that the increased elevation in this area made irrigation further north impractical. The alluviation associated with this irrigation system has probably obscured the city wall which has not been found in this area, but we assume that it ran more or less along the line marked by Canal E.

Few objects and sherd scatters were found outside the city wall, but where we do have such scatters they may be the remains of individual homesteads. Finds were very sparse in this square, and there is no evidence for late occupation associated with the late irrigation system.



Fig. 143. Map 11D.

Square 11D (fig. 143)

Only the southwestern quadrant of this square was surveyed, and no objects were recovered. There is no photographic image. By and large this square is off site, and its main feature is Canal B, represented as a line of camelthorn. The southwestern quadrant was surveyed because it included the northern tip of a small, Old Babylonian mound, Sector VII, which is primarily located in Square 11E, and will be discussed there.



Fig. 144. Aerial photograph of 1990 excavations in 3H and 4H taken after rain with a large wall and mud-brick architecture visible.

Square 3E (figs. 145–146)

The northwest quadrant of this square was not surveyed, but even in the three quadrants that were studied on the ground, many features were identified only from the aerial photographs. The map of this square is drawn from basic survey data, features visible only from the air, and extrapolation from the survey results of neighboring squares. For example, the line of mud-brick–almost certainly the traces of the city wall–running southwest from the area of late occupation in the



Fig. 145. Map 3E.

northeast was invisible from the ground. The concentration of ceramic slag in the southern portion of the site (in Units 95–97), is an extension of one observed in Square 3F.

The main features of this square are the edge of the mound with late occupation in the northeast quadrant; traces of what appears to be the city wall running through Units 47, 57, 66, 76, 85, and 94; and Canal D along the western edge of the site. The latter is the same mentioned in the discussion of Square 3D, which the balance of the evidence inclines us to view as late.

Most of the small finds in this square-glass vessels and bracelets and coin-are late, but there are also several objects of Old Babylonian and even earlier date.



Fig. 146. Photo 3E.

Square 4E (figs. 147–148)

Square 4E was fully surveyed and the image data are relatively complete, but there are interpretive difficulties nevertheless. We have coded much of the eastern part of the square as the kind of find grained silt with few sherds generally found in the fill of ancient canals. Its broad expanse would suggest a harbor. This area was not recognized as distinctive on the survey sheets, although the surveyors did note the absence of surface scatters. A depression, into which small drainage channels (such as the one in Units 56, 57, 67, 76) run, is visible from the air and also appears on the contour map. The soils are certainly compatible with water-lain deposits and the west canal debouches



Fig. 147. Map 4E.

into this area in Square 5F. This area can be seen as a lighter zone in the satellite imagery and we are thus reasonably confident in postulating that it was once open water.

Complicating this interpretation are a number of small brick features which were noted within this area. There was a certain amount of wash of material from the higher mounds in the vicinity, which would explain the presence of the few objects found here, as well as the occasional scattered brick, but this cannot account for the remains of actual walls. Since there were late mounds to the east and west of this square, it may well be that the wall traces date to the late occupation, rather than the Old Babylonian period to which we date the harbor. They could also represent islands or other structures within the harbor.



Fig. 148. Photo 4E.

The rest of the square is dominated by the continuation of the area of late occupation in the northwest, which probably included a large building near the west edge of the square in Unit 40. To the south is an area of Old Babylonian occupation in which a few baked brick structures are visible, one immediately beside the harbor (Unit 33) and the other in the southwest corner of the square (Unit 90).

The objects show the expected mixture of late material (iron, glass, etc.) with typical Old Babylonian finds (female plaques, model chariots, stone bowls, etc.). Model chariot shields and other chariot fragments, which are common farther south in the west portion of the site, begin to appear in quantity here.



Fig. 149. Map 5E.

Square 5E (figs. 149–150)

Most of this square was taken up by the large low silty area with few sherds which we are interpreting as a harbor, so it is not surprising that few objects were found here. By and large the map follows the survey data, although the edges of the harbor were marked clearly only in the northeastern quadrant and somewhat more tentatively in the southwestern one. This harbor was devoid of features except for sand dunes, which tend to build up on any low-lying area. There were a few sherd mounds to the south, whose significance escapes us at present, and some traces of construc-



Fig. 150. Photo 5E.

tion in the west in Units 40 and 30. These traces suggest either later occupation in this area, or a "harbor" more complicated than a simple expanse of open water. Most of architecture, however, was in the southwest corner of the square, where a quite substantial building was apparently located near the water's edge (Units 60, 61, 70 and 71) and in the southeast, where extensive baked brick remains from construction in 6E extended into the square. The sherd mounds in the northeast may have served to separate the harbor from the central canal, thus restricting entrance to the harbor, as was the case with the other harbor located in Square 8G.



Fig. 151. Map 6E.

Square 6E (figs. 151–152)

Although this square was completely surveyed, few details were recorded for its northern part, so much of the information on surface scatter comes from the image, as does the evaluation of the boundaries of Canal G, which is the main feature of this square. It was connected to the harbor in Squares 4E and 5E, and can be seen running from northwest to southeast across the middle of 6E.



Fig. 152. Photo 6E.

South of this canal was one of the group of mounds with evidence for late occupation in this part of the site. In addition, traces of baked brick structures and other features probably dating to the Old Babylonian period can be identified on the basis of their associated ceramics. The concentration of kiln wasters near the edge of the canal in Units 51, 61, 63, and 73 may be indicative of ceramic production, but no actual kilns have been found to go with them.


Fig. 153. Map 7E.

Square 7E (figs. 153–154)

This square is rather empty, as is typical of this part of Sector II. The main features are the modern track and the line of Canal G, which was not observed by the surveyor but is quite clear from the air. Only in the east do we see the mounded, sherded surface which typifies most of the site. While the finds included a little glass, there were a number of clearly Old Babylonian pieces, including a cylinder seal and part of a model chair.



Fig. 154. Photo 7E.



Fig. 155. Map 8E.

Square 8E (figs. 155–156)

This part of Sector II shows evidence of quite dense occupation, especially in the southeast quadrant. In the far southeastern corner, however, this is less conspicuous, and we find the late Canal F dug through the remains. Traces of architecture and pithos burials were quite common, and



Fig. 156. Photo 8E.

large amounts of fragmentary copper objects were also found here, especially in the southeast. The clearest architectural traces were in Units 8 and 19 where there may be the remains of a baked brick building. The apparent abundance of bricks in the southwest probably reflects more the recording habits of an individual surveyor than any real difference in frequency.



Fig. 157. Map 9E.

Square 9E (figs. 157–158)

The main feature of this square is Canal F, which must be dated to the late occupation of this area since it connects with Canal E. It was only partially observed from the ground but is quite clear from the air. Apart from imparting details of the placement of the canal, the aerial photograph added little to the information collected on the ground. The evidence for occupation is found more



Fig. 158. Photo 9E.

to the north and west of this canal than to the south and east of it, although there is still some evidence of living debris in the latter area. Most architectural traces were in the northeast. Given the presence of occupational debris on either side, it seems unlikely that Canal F could have been used for irrigation. Perhaps it was merely designed to bring fresh water closer to the residents of the late mounds in this vicinity.



Fig. 159. Map 10E.

Square 10E (figs. 159–160)

The main feature of this square is Canal E, which runs along the eastern edge of the site. This canal was noted in the surface survey, but Canal F, which is connected to it was not. The sherd and brick mounds associated with Canal E suggest the possibility that this canal may have been following the line of the Old Babylonian city wall. This is certainly where we would expect to find the wall, since it marks the edge of dense occupation and the sherds that make up these concentrations are characteristically Old Babylonian. Except for the occasional coin and glass object, there is no evidence to indicate late occupation in this area.



Fig. 160. Photo 10E.

The baked brick foundations of a quite large building could be seen in Units 43 and 44. The top of a large jar, apparently *in situ* was found in an area of high density sherd scatter which might reflect the presence of a room or court.

Square 11E (figs. 161–162)

This square is entirely off the main site of Mashkan-shapir, but its western half was included in the survey because of the existence of a small Old Babylonian mound which we have designated Sector VII. Unfortunately, we only have the edges of aerial photographs for this area, so the image was of no help in mapping. All information on the map therefore derives from the surface survey



Fig. 161. Map 11E.

notes. Except for this mound, and a small pile of baked bricks in Unit 62, this square was virtually empty.

This small mound occupies most of the northwest quadrant and is somewhat elongated. Like most of the main occupation mound it rises a meter or so above plain level. If it can be argued that similarity in height suggests similarity in time of occupation, it was probably occupied for as long as Mashkan-shapir maintained urban status. Its main feature is the remains of a kiln of some kind, but most of the mound would seem to have been a structure of baked and mud brick, now decayed.

It is difficult to understand the purpose of this mound, located nearly a hundred meters away from the main occupation of the site. While the kiln suggests a specialized manufacturing area,



Fig. 162. Photo 11E.

there were plenty of kilns on the site itself so this is no justification for a separate location. There is also evidence for domestic activities in the form of a large quern made of slag, and one chariot shield was found. Given the evidence for temples immediately outside the city walls of other Mesopotamian cities, such as festival houses, or *akitu* houses, used in the important New Year ceremonies and the Eshmah temple at Nippur (Kramer 1963, between 64 and 65) it is not out of the question that Sector VII is the location of such a structure. An excavation of this mound would be of great interest.



Fig. 163. Map 2F.

Square 2F (figs. 163–164)

This square was not surveyed, and only its eastern half was photographed. It is possible–even likely–that were the entire square photographed, traces of Canal D, which follows the western boundary of the site, might have been located. The map is based entirely on the aerial photographs of the east side, where the only visible feature is the line of mud brick which we believe to represent the city wall. There was no systematic search for objects here, but one glass bead was found by chance.



Fig. 164. Photo 2F.

Square 3F (figs. 165–166)

Apart from the line of what we believe to be the city wall running between Units 4 and 80, everything in the map was noted by the surveyors. Scanning lines are visible in the northwestern part of the image, and in the south. There is evidence of dense occupation immediately inside the city wall, and the entire eastern half of the square is filled with occupational debris. In the large area of mixed sherds and slag in Units 5, 6 and 7 slag density was relatively low except in one spot,



Fig. 165. Map 3F.

and that did not look like a kiln. It is possible that this material was being reworked rather than produced here.

There was a considerable amount of baked brick architecture centered around Units 56, 57, 66, and 67, apparently representing a single building complex. One possible interpretation of the aerial photographs is that these architectural fragments were but part of a large building complex in this area that extended for at least 50 meters from northwest to southeast and perhaps 100 meters from northwest to southwest and continued into the northwestern portion of Square 4F. Other parts of



Fig. 166. Photo 3F.

Sector III have provided evidence of administrative activities associated with relatively abundant remains of model chariots. Since such model chariots are also common in this area, it is possible that a single large administrative building may have dominated this area. It should be noted, however, that elsewhere in Sector III, such administrative activities have been associated with complexes of related buildings rather than large single structures (Stone and Zimansky 1994).

Besides model chariot fragments, the only other objects of note were two pieces of a single cylinder seal, found forty meters apart, and part of a clay rattle.



Fig. 167. Map 4F.

Square 4F (figs. 167–168)

The general outlines of the map are as described in the surface survey notes, although the image has been used to fill out some of the details of the distribution of sherds over the surface. Many of the wall traces in the northwestern portion of this square are in the same alignment as the building in square 3F, which is why we think that they may be part of the same complex. Although there were no chariot shields found here, one wheel was encountered. The most dense occupational de-



Fig. 168. Photo 4F.

bris is in the southeastern quadrant, where there are concentrations of brick, identifiable wall traces and a number of clusters of pithos sherds. Whole pithoi and sherds therefrom suggest the presence of burials-perhaps in association with domestic structures. This square offers less evidence of model chariot fragments than other parts of Sector III, and perhaps only the northwest corner is linked with administrative activities. The objects are more characteristic of residential areas: copper implements, balance weights and the like.



Fig. 169. Map 5F.

Square 5F (figs. 169–170)

The major feature of this square is Canal M, which was both recognized in the survey and is clearly visible from the air. Some details of the surface scatter were derived from the aerials alone, but by and large the survey observations correspond well with the image. To the north we see the broadening of the watercourse as it joins the harbor located in Square 5E. Baked brick wall traces are visible along the canal, by far the most prominent of which form a sizeable baked brick platform in Unit 90, perhaps associated with the parallel walls seen in Unit 80. Since this platform lies op-



Fig. 170. Photo 5F.

posite another baked brick structure on the bank of Canal M in Square 5G, it has the appearance of some sort of installation to facilitate crossing–a quay or a bridge emplacement. A few model chariot fragments and a cylinder seal were recovered from the west side of Canal M, while more domestic items like stone tools of various kinds, beads, plaques and a balance weight were found to the east. On the eastern edge of the canal a fragment of what must have originally been a much larger cuneiform inscription carved into calcite (AbD 87–4) was found.



Fig. 171. Map 6F.

Square 6F (figs. 171–172)

By and large image and survey data are consistent here, with only minor details added on the basis of the aerial photograph. The northern two-thirds of this square are covered by an area of late occupation, so identified on the basis of sherds and glass fragments rather than any objects recovered. On this mound were scatterings of baked brick, some of which could be resolved into actual



Fig. 172. Photo 6F.

architectural features. It is to be assumed that one or more large baked brick structures dating to the Partho-Sasanian occupation of the site were located in this area. To the south of this there was evidence for Old Babylonian settlement, although the sherd scatter was not particularly dense. Few objects were found in this square.



Fig. 173. Map 7F.

Square 7F (figs. 173-174)

As in 6F, the most conspicuous feature here is a late occupation mound. In this case it overlies the bed of Canal G, providing clear evidence that the canal was filled in by the Partho-Sasanian period. The canal itself is barely visible in the image of this square and was not noted by the surveyor, but it stands out quite clearly in images of Squares 6F and 8F so there is no doubt about its course. Most of the features drawn on the map were recognized in the survey and clarified by the aerial photographs. The late mound was marked by baked brick features, like the mound in Square 6F, but in this instance none of them could be resolved into clear architecture. The only object asso-



Fig. 174. Photo 7F.

ciated with this late occupation is a fragment of a horse or horse and rider figurine; other objects found in the square were chariot wheels, stone donuts, and stone tools.

Square 8F (figs. 175-176)

While the surveyors identified Canal G, they failed to recognize Canals F and H, which have been added to the map on the basis of the aerial images. It appears that the levee to the north of Canal G served as an endpoint to Canal F in Unit 42. Canal F joins Canal E which is clearly associated with the later occupation of the site. Given that Canal G lay under the Partho-Sasanian occupation mound in 7F, it seems probable that this canal predated Canal F, and that its levees were



Fig. 175. Map 8F.

deemed not worth the trouble of excavating when the latter was dug. It is possible that there was another, later, canal-perhaps contemporary with the late mounds 6F and 7F-which ran more or less along the modern track where there is a light colored area lacking surface ceramics. If so the traces of this canal from the air are much less clear than is the case with other canals. No clear edges can be made out and the fact that Canal F continued across this area until it ran up against the levee would also argue against there having been a canal in this area.

In the southeastern corner of the square, Canal H clearly did connect with Canal G, and must therefore have been contemporary with it.



Fig. 176. Photo 8F.

In general, evidence for second millennium occupation in this area was sparse, with few objects and modest density sherd scatters reported. Throughout this area there is evidence for some late activity in the form of a thin scatter of glazed sherds and glass. Whether this is merely material transported from the nearby Partho-Sasanian settlement mound in 7F or if it represents more extensive but low level late settlement is difficult to determine without excavation. The few objects that were recovered from this area included a glass bracelet fragment as well as a stone ax, a chariot wheel and a stone bead.



Fig. 177. Map 9F.

Square 9F (figs. 177-178)

The surface scatter over this square was thin and the area was quite flat and without character. The only features-visible only from the air-are the small off-take channels from Canal G, designated Canals H and I. Since Canal G would seem to be Old Babylonian, it is possible that this area was not densely occupied but instead used for some kind of cultivation in that era. Perhaps, like the "central park" shown in the Kassite map of Nippur (Kramer 1963, between pp. 64 and 65), it was an area of date groves within the city walls. We have not been able to identify the city wall in this



Fig. 178. Photo 9F.

part of the site, however, and the possibility that 9F lies immediately outside the Old Babylonian city cannot be ruled out. We regard this as less likely, because there is little late occupation to obscure any remains so one would expect the wall have been visible in the numerous aerial photographs if it were present in this area or west of it. The sparse sherd cover is matched by the paucity of objects found here. Apart from a single glass bracelet fragment, the remains seem to be Old Babylonian.



Fig. 179. Map 10F.

Square 10F (figs. 179–180)

Like Square 9F this square had low sherd density and few features. The canals in the northeast and southeastern corners, E and N respectively, seem to be post Old Babylonian, although the possibility that Canal E more or less followed the line of the Old Babylonian city wall was noted above. Canal N is a large watercourse that connects with Canal A in the open country east of the site and is part of a large scale Parthian to Early Islamic system.

Small finds in Square 10F were a mixture of Old Babylonian and late objects, in neither case numerous. In general, the surface scatter had more evidence of late material in the form of fragments of glazed ceramics and glass towards the southeast. These materials might have been spread by manuring fields, as in the larger system discussed by Wilkinson in Appendix 2.



Fig. 180. Photo 10F.

Square 11F (figs. 181–182)

This square was not included in the surface survey, so the map is based entirely on the aerial photographs and on extrapolation from neighboring squares. The objects in the northern part of the square were recovered when Square 11E was surveyed rather than in systematic coverage of 11F. The key feature of this square is the unequivocal evidence that Canal E crosses Canal N, even though the latter is probably Partho-Sasanian in date. The fact that Canal E cuts through the levee of this canal would probably make it Early Islamic and also provides a date for its off-take channel, Canal F. As indicated in our discussion of Square 10F, Canal N is almost certainly part of the large complex of canals mostly located to the north and west of the site, which includes Canal A.

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Fig. 181. Map 11F.

Square 2G (figs. 183–184)

This square was not surveyed, so all features drawn on the map are derived from the aerial photographs or extrapolation from neighboring squares. The one chariot shield recovered from this square was an accidental find. Three major features in this square are extensions of features seen elsewhere. In the southwest, the bed of the Canal O is visible, if not particularly easy to see. Canal O joins Canal M and serves to divide significant sectors of the Old Babylonian city, and is therefore interpreted as being of that date. The beginning of the northern levee of this canal can be seen in the southeast corner, near the parked vehicle in the aerial image. In the northeast part of the square, the end of the mud-brick feature interpreted as the city wall can just be made out in Units 7, 8, 17, 18, 27 and 28.



Fig. 182. Photo 11F.

Much of the square, however, is filled with linear features whose outlines were only visible from the air. Under these circumstances it is impossible to tell their composition. It happens that we put two small trenches this area, seen in Units 73 and 84 on the aerial photograph, at the beginning of the 1990 season. These were not formal excavations but an attempt at latrine digging in an area that we believed to be well off the site, but the soil proved so hard that the project was abandoned with the holes were no more than 50 cm. deep. The soil was composed of very hard clay with no artifacts or sherds. While it is not impossible that the trenches were within a wall, we did not see any clear bricks in the profile and tempering material was not in evidence.



Fig. 183. Map 2G.

Our best guess at interpretation is that this feature might have been some kind of fortification added to the city wall at the strategic point where it ran up against the Canal O. But there are no parallels for this kind of construction at other Mesopotamian sites, nor have similar features been found at other points where Mashkan-shapir's city wall meets a canal.

Square 3G (figs. 185–186)

The northwestern part of this square is quite barren and was probably a relatively empty area between the settlement and the city wall. In the rest of the square the surface scatter includes numerous small mounds covered with bricks, sherds or ceramic slag. The map of this square and of



Fig. 184. Photo 2G.

many others in this part of the site, was created with good balance between survey data and aerial photographs. A surface this complex was difficult to record with precision in a surface survey designed to sketch remains rather than map them in. The image, on the other hand, provides an accurate view of the location of mounds but not on whether they are made up of bricks, ceramic slag or sherds. The map for Square 3G therefore represents a distribution map based on the image and classification of the material involved based on the survey data. In the process it is possible that there may have been slippage in the association between mounds sketched in the course of the survey and those seen in the imagery. Nevertheless, the overall view that this square was covered with debris made up of sherds, bricks and ceramic slag is valid even if any one particular location is miscoded.



Fig. 185. Map 3G.

The remains of the mud-brick wall running between Units 9 and 94-well inside the city wallapparently separated an area of large, complex buildings from one in which the architectural units are smaller and more haphazard. Although not visible from the ground, this wall can be easily made out from the air. We can see these differences because Square 3G is one of several squares in which a series of aerial photographs taken immediately after a rain revealed patterns of mud-brick architecture which were not visible in the drier conditions under which most of the squares were photographed (see figs. 112, 144, 281). The mud-brick architecture west of the wall consisted of small, not particularly regular rooms of the kind most often associated with domestic structures. To the



Fig. 186. Photo 3G.

east, in contrast, the rooms and buildings are much larger, baked brick walls more common, and the architecture more regular. The architectural traces would thus suggest that this wall served to separate distinct functional areas.

The inventory of artifacts found in this square is large, and includes an unusual abundance of model chariot shields, wheels and bases. Other objects include pots, copper tools-mostly sickles and knives-and even a baked clay axe. By and large, items most closely associated with domestic activities like spindle whorls, balance weights, pins, and beads, were absent here.



Fig. 187. Map 4G.

Square 4G (figs. 187–188)

While most features in this square were recorded in the survey data, the end of the large mud brick wall in Unit 0, the sherd ridges located to the east and west of Canal M, and details of the levees on both sides of that canal were drawn from the images. Our excavations in 1990 (Stone and Zimansky 1994) established that the sherd ridge between Units 55 and 92 is a street, and the ridge east of Canal M between Units 79 and 98 would also appear to be a street given the general similarity of its form.

The most prominent architectural feature in this square is a building with baked brick foundations centered in Unit 52. We designated this Building 1 and swept the tops of its foundations clear



Fig. 188. Photo 4G.

in 1987 to reveal the entire ground plan. We also made a small sounding in one of its rooms (see Appendix 1) which demonstrated that the base of the foundations was approximately one meter below the modern surface. A door sealing found beside a doorway in this sounding suggests the building had an administrative function.

Much of the rest of the architecture in the square was visible only in the aerial photographs taken after a rain, and presents a picture of large, well planned buildings west of the canal. The architectural traces on the east bank are less clear.

Eleven model chariot wheels and fragments were found to the west of the canal, and two to the east. Scatters of pithos sherds and the remains of the jars themselves *in situ* may indicate the presence of burials or storage activities in the eastern part of the square.


Fig. 189. Map 5G.

Square 5G (figs. 189–190)

As was the case with Square 3G, the 5G survey data were very complex, making it difficult to exactly match what was sketched in the survey with patterns visible from the air. Meanwhile, some of the major features of this square–especially the ridges of high density sherds which almost certainly represent streets—were only visible from the air.

This entire square was photographed after a rain, so many elements of mud-brick architecture are visible, in addition to the baked brick walls which were observed in survey. Among the note-worthy architectural features are the pair of baked brick platforms located on either side of Canal M in Units 0 and 11. As mentioned in our discussion of Square 4F, we interpret these as either quays or bridge supports, marking a crossing point for the canal. This interpretation is strengthened



Fig. 190. Photo 5G.

by the sherd ridge-or street-which runs through the square from the baked brick feature in Unit 11 to Unit 97.

The visible architecture in this area suggests the presence of more domestic structures than on the west side of the canal. An inscribed clay nail (AbD 87–134) found in Unit 35 may indicate the presence of a public building here as well. Otherwise the finds from this area are mostly domestic–jewelry, cylinder seals, and tools–while model chariot fragments were rare.

Slipper coffins in the southeastern portion of the site indicate that a Parthian graveyard was dug into the remains of the Old Babylonian city. A group of these graves is found in Units 65, 66, 76, 77, and 87 of this square. Similar burials appear in neighboring squares. Except for these burials, virtually all of the materials found in 5G are Old Babylonian.



Fig. 191. Map 6G.

Square 6G (figs. 191–192)

This is another complex square where meshing the features sketched in the survey and those seen in the aerial photographs was difficult, especially in the south. There are numerous Parthian burials in the southwestern part of the square. In some instances, mostly further to the west around Unit 83, the actual slipper coffins can be identified; to the east, around Unit 86, the small baked



Fig. 192. Photo 6G.

brick mounds probably indicate the coverings of similar graves. Otherwise there are few features of note in this square. In part this is because it lies outside the area photographed from the air after rain. Wall traces in the northeast may indicate the location of a building with baked brick foundations. The objects from the square are mostly fairly ordinary Old Babylonian objects–pots, pithos lids, cylinder seals and a few chariot fragments and other terra-cottas.



Fig. 193. Map 7G.

Square 7G (figs. 193–194)

The data collected in the course of the surface survey were closely matched by that visible in the aerial photographs. Even the edge of the eastern harbor in Units 29, 29, and 49 was noted on survey, although its location was clarified by the aerial photographs. The most significant features of this square were the ceramic table fragments in Units 0, 1, 10 and 11. Their high concentration



Fig. 194. Photo 7G.

here suggests that they were used in some manufacturing process, even if we do not know what that process actually was (see Chapter 6). Otherwise this square yielded little of interest. To the south we found somewhat higher sherd density and a number of pithos jars. The latter may indicate the location of Old Babylonian graves or they may represent large scale storage. In the northern part of the square some late sherds and glass were observed, presumably wash from the late occupation in Square 7F.



Fig. 195. Map 8G.

Square 8G (figs. 195–196)

The survey data and aerial data agreed very closely. Much of this square was taken up by the eastern harbor and was characterized by silty, largely sherd-free soil with scattered camel thorn and sand dunes. Cores augered to a depth of 4 and 6 meters from the surface in Unit 48 indicated to Lisa Wells that this had been an area of open water. Canal G cuts across the northeast corner of the square, and between this and the "harbor" there is a ridge of higher ground with sherds on it. Since



Fig. 196. Photo 8G.

there is little evidence for late sherds along this ridge, it would appear that the canal and harbor were separated one from the other here—as was the probably also the case with the western harbor. Finds were few in this square since the area of actual occupation was modest. No large baked brick structures comparable to those bordering the west canal were found here, but the area of high density sherds which penetrates into the harbor from the west is difficult to understand and would be a priority for future excavation.



Fig. 197. Map 9G.

Square 9G (figs. 197–198)

Although the surveyors did a good job of identifying surface scatters, a modern track obscures traces of the various canals which crossed this square, all of which were mapped in from the aerial photograph. Running through the square from northwest to southeast is Canal G. Canal I comes off of this in Units 34 and 35, heading northeast and is crossed by the modern track. Since Canal G appears to be Old Babylonian, Canal I would be also.

Canal N, which cuts across the southeast quadrant of the square, is another matter. All of the evidence suggests that north of the road we are dealing with a Partho-Sasanian canal, but south of it the same line continues in a recutting of an Old Babylonian channel. There are several reasons



Fig. 198. Photo 9G.

for positing the existence of this earlier canal. Old Babylonian architecture in the central mound is found to parallel its bed, which suggests that it served as a structuring feature of the Old Babylonian city. The types of Old Babylonian finds on both sides of this canal differ sufficiently that it seems probable that this was demarcation line of some significance in the early second millennium city. The Old Babylonian site would have presented a formidable obstacle to later canal diggers and it would be quite understandable for them to follow an earlier depression.

Surface small finds were relatively rare-not surprisingly given the complex of water courses in this square-and the little late material is concentrated in the east. The complex levee system beside Canal N is drawn on the map largely by extrapolation from the neighboring square.



Fig. 199. Map 10G.

Square 10G (figs. 199-200)

The surveyors noted most of the features recorded on this map. They recognized the small canal paralleling the north levee of Canal N as a feature, but did not identify it as a channel. From the air it seems certain that it had this function and was, presumably, contemporary with Canal N. Canal G cuts across the southwest corner of the square. Although this area is disturbed by the modern track, it appears that this channel had a series of brick and sherd mounds in its midst. The only



Fig. 200. Photo 10G.

other watercourse in this square is a small offtake canal in Unit 99. This canal seems almost certainly Partho-Sasanian in view of the analysis of surface ceramics in this area by Tony Wilkinson (Appendix 2).

In general the only late finds were found around Canal N, so the area of medium sherd density beyond the canal in the south central portion of the square probably represented early second millennium occupation. This interpretation is consistent with the associated artifacts-chariot wheels, stone beads and a stone bowl.



Fig. 201. Map 11G.

Square 11G (figs. 201-202)

The map records only the western half of this square, which was all that was photographed. The survey covered one more quadrant, the southeast, but nothing was found in it. The most conspicuous feature of the square is Canal N, which can be seen running through the northeast corner. Most of the sherd scatter on either side is from the spoil heaps created in the digging of that canal and therefore dating to the Partho-Sasanian occupation of this area. The two small channels seen in the south are small off-take canals from Canal G. They too probably date to the later occupation of the site. The significance of the series of small mounds of sherds along the south of the square is



Fig. 202. Photo 11G.

obscure. Since no glazed wares or decoration characteristic of later periods were noted, there is nothing to suggest that these are other than Old Babylonian, and the discovery of a model chariot wheel by one of them would tend to corroborate this dating.

Square 2H (figs. 203-204)

In retrospect, it is unfortunate that only the southeastern quadrant of this square was surveyed, since the aerial photographs indicate the presence of significant remains, including baked brick architecture, in the northeast. These are presented here from the evidence of the photographs alone.



Fig. 203. Map 2H.

The major feature of the square is Canal O, which seems quite narrow in this area and does not stand out clearly. Traces of aligned baked bricks and sherd mounds suggest that a large building was located just south of this canal, at the edge of the settlement. To the south we find additional testimony to extensive building in this area in the form of more baked brick associated with typical Old Babylonian artifacts such as figurines and model chariot parts. A linear feature running more or less east-west across the southern portion of the site can be seen in the aerial photographs. It may be no more than a modern track, but does not look like other tracks. It was not noted by the surveyor.



Fig. 204. Photo 2H.

Square 3H (figs. 205–206)

There is a great deal of information on this square because a relatively large number of aerial photographs were taken of it, including some taken in the conditions that recovered mud brick architecture (figs. 112, 144, 281). It was in this area that we did our most extensive excavations, including six 10×10 meter squares in 1990, as well as a smaller sounding in 1989 (Stone and Zimansky 1994). In the map presented here, only the walls visible before excavation and the objects found on the surface have been included. Apart from the large mud-brick wall in the northwest part of the square and the mud-brick walls that showed up after a rain, the aerial photos add little to what was observed in surface survey.



Fig. 205. Map 3H.

Most of this square is in the southeast corner of Sector III, north of the juncture of Canals M and O. Only small fractions of Sectors IV and VI are included. To the west of the large wall some traces of mud-brick walls appear in the post-rain aerials, but these do not seem to represent sub-stantial construction. The remains of model chariots were numerous in the square generally, and three fragments were found to the west of the large wall. Most of the architectural remains and small finds lie to the east, however, where extensive baked brick foundations are visible. The sounding of 1989 demonstrated that these were no more than a course or two deep, although mud-brick architecture was found following roughly the same orientation immediately below (see Appendix I). The baked brick traces are part of a group of structures that extends into the area excavated in 1990. There numerous unbaked clay sealings, together with tablets, tablet fragments, and broken enve-



Fig. 206. Photo 3H.

lopes (Stone and Zimansky 1994) testify to the administrative nature of this complex. Surface finds other than model chariot fragments finds were rare, although a plaque and a several whole vessels were found in this area.

Square 4H (figs. 207–208)

Four of the ten 10×10 m squares excavated in 1990 lie in the northwest corner of this square, so there is information to augment surface survey and aerial photography, as there was in 3H. A 5 \times 5 m sounding was also made in Unit 95, the middle of the southern edge of the square (see Appendix I). This is a square where the surface remains were dense and varied, and the aerials were



Fig. 207. Map 4H.

especially important in defining the location of scatters noted by surveyors. As in Square 3G, there may be instances where the constitution of a particular surface scatter is misidentified, but generally the mix of deposits is accurately represented.

The northwestern corner of square, separated from the rest by the bed of Canal M, is part of Sector III, characterized by regular architecture and a large number of model chariot remains. The northeast appears to be a more residential area, with traces of buildings along a street manifested as a ridge of high density sherds. The southern half of the square is heavily mounded, partly because of the height and complexity of the surviving Old Babylonian remains and partly because local bed-ouin have dug several pits in the area. A clear boundary marked off by a large mud-brick wall can



Fig. 208. Photo 4H.

be seen in the aerial photographs of taken after rain (Units 38 and 49). South of this artifacts abound, the most conspicuous of which are grinding stones of various kinds, stone palettes, beads, copper/bronze weapons, and especially baked clay sickles. The latter have been found in many parts of the site and must date to a fourth millennium occupation of the site. Their concentration in this part of the mound suggests that the soil has been more turned over here.

Human bone protruding from one of the bedouin pits and the large number of ribbed pithos fragments indicate that this is an area of second millennium B.C. interments. No burial was found in the sounding we excavated in this area, but the ceramics demonstrated that its latest occupation dated a century and an half earlier than the final abandonment of Mashkan-shapir.



Fig. 209. Map 5H.

Square 5H (figs. 209–210)

The southwestern corner of the 5H is marked off by the wall noted in Square 4H and characterized by the pattern of numerous sherd mounds, pithos sherds, etc. which are indicative of burials. In the rest of the square there are traces of both baked brick and mud-brick architecture. A sherd ridge which probably represents a street crossed the northeast corner. Neither the small finds nor the architectural traces are distinctive.



Fig. 210. Photo 5H.



Fig. 211. Map 6H.

Square 6H (figs. 211–212)

Most of the features seen on the aerial photographs of this square were also noted by the surveyors. The street noted in Squares 5G and 5H crosses 6H as a line of mounds of higher sherd density running roughly east-west. To the south are traces of quite substantial baked brick structures, one associated with a pair of brick tombs. The walls of one of these tombs were quite clearly visible



Fig. 212. Photo 6H.

because it had been cleaned out in the not too distant past. The other survived as a mound of bricks lying beside a pair of baked brick walls. In the north central part of the square there were Parthian burials in the form of either small baked brick mounds or the actual remains of slipper coffins and, in one instance, a bathtub sarcophagus. Otherwise artifacts, mostly whole pots and the occasional figurine, were not particularly abundant.



Fig. 213. Map 7H.

Square 7H (figs. 213-214)

For this square only minor details were added to the survey data as a result of the analysis of the aerial photographs. Traces of the Canal N can be seen in the southeast corner, and a significant concentration of both cuprous slag and copper-bronze fragments was identified in the center of the



Fig. 214. Photo 7H.

square. It is noteworthy that the alignment of the wall traces in this square is not parallel/perpendicular with the bed of Canal M, as it was in 5H, but rather with Canal N. Objects were not particularly abundant in this square.



Fig. 215. Map 8H.

Square 8H (figs. 215-216)

The image of this square adds little but precision to the information collected in the course of the surface survey. The square was dominated by Canal N. To the southeast are a series of high dirt piles that apparently represent the spoil heaps piled up when the canal was re-excavated in the



Fig. 216. Photo 8H.

Partho-Sasanian period. On the northwest side of the canal the levees are no higher than they are for the other Old Babylonian canals. Finds near the canal include both early second millennium objects and materials contemporary with the later re-excavation. Of the Old Babylonian objects, the most notable are the three baked clay table fragments.



Fig. 217. Map 9H.

Square 9H (figs. 217-218)

The aerial photographs and the survey data correspond quite closely, except that the former pick up a series of light colored lines running roughly from south-southwest to northeast in the southeastern corner and the north central part of the square. Although these are not as obviously canals as other linear features, they seem to originate in Canal G, so they are shown as water-lain deposit on the map. This interpretation may be confirmed in new (2002) Aster Terra imagery of the area.



Fig. 218. Photo 9H.

Recent cultivation has so raised the water table that the ancient canals are now clearly visible as heavily vegitated areas. These lines are similarly vegetated. The large, curved, sand dune in the center of the square fills a modern drainage channel, which is not aligned with these features.

The bed of Canal G crosses the northeast corner of the square and, as in 8H, large spoil heaps from its re-excavation are located to the south. These contain some late ceramics and glass, which become increasingly rare as one moves away from the canal. Otherwise finds are quite sparse: one model chariot shield and several types of grinding stones.



Fig. 219. Map 10H.

Square 10H (figs. 219-220)

The major surface scatters of bricks, sherds, etc. were recognized in the surface survey, as was the Canal G, but the small off-take channel, Canal J, and the peculiar linear features toward the southwest were only visible from the air. Sherd density was generally low in this square, especially



Fig. 220. Photo 10H.

in the east, and by and large, Old Babylonian in date. While this does appear to have been a settlement area, it may be that it was only occupied quite briefly and its deposits eroded away. Both finds and architectural traces were few.



Fig. 221. Map 11H.

Square 11H (figs. 221–222)

The surface scatter was clear in the survey, but traces of the watercourses had to be reconstructed on the basis of aerial photographs. The surveyor even missed Canal G because its path was obscured by the car tracks running along it. The off-take canals seen in the northwest corner are apparently part of the Partho-Sasanian irrigation system, and here there is no trace left of the Old Babylonian canal—it has been completely replaced by the later Partho-Sasanian cut.



Fig. 222. Photo 11H.

The large baked brick mound in Unit 94 may have been part of the Old Babylonian fortification system since it lies at the end of the traces of the city wall seen in Square 11I, but alternatively, it cannot be ruled out that it was related to the late canal. The line of mud-brick seen on survey in the east of the square is probably the remains of the city wall, but unfortunately aerial coverage did not extend far enough east to confirm this.



Fig. 223. Map 21.

Square 21 (figs. 223-224)

Only the eastern half of the square was surveyed, and the available images provide a poor picture of the western half of the site. Under these circumstances we cannot tell whether there were traces of a city wall in the western sector-certainly none is visible in the data available to us.

The edge of settlement runs more or less north-south through this square. To the east are a series of low mounds which represent areas of dense occupation. In addition to materials of the early second millennium, especially female plaques and animal figurines, there were a number of Parthian burials in this area, seen in the remains of the slipper coffins themselves as well as occasional fragments of glass jewelry and vessels.



Fig. 224. Photo 21.

Square 31 (figs. 225–226)

This is another of the squares in which the very complexity of the features makes it difficult to correlate the mounds sketched in and defined by the surveyor with their counterparts on the aerial photograph. As was the case with Squares 3G and 4H, it is possible that some mounds seen in the aerials have been misidentified, but the overall picture of complex mounding of sherds and bricks should nevertheless be accurate. The only features mapped entirely from aerial photographs were the locations of the Canals O and M in the northeast corner, whose boundaries are obscured on the ground by the modern track.


Fig. 225. Map 31.

This square was dominated by the high baked brick platform located in Units 62-64 and 72-74. Although it consists largely of baked bricks, many of which are not *in situ*, flat surfaces on its top and edges make it apparent that this was originally a platform of solid masonry. Excavation is necessary to resolve the question of whether anything remains of the structure that it once supported.

This platform apparently served as the focus of a Parthian burial ground, the edge of which was noted in Square 2I. A few of the numerous slipper coffins were well enough preserved to reveal glaze and decoration. The platform itself, however, does not appear to have been Parthian. The brick sizes are characteristically Old Babylonian and not Parthian, and it is located immediately to the north of, and may have formed part of a larger complex with, a major mud-brick platform



Fig. 226. Photo 31.

which is indubitably assigned to the early second millennium on the basis of both brick sizes and associated terra-cotta statuary. It is possible that the Parthians chose to use this area as a burial ground because they recognized the features of this platform as evidence of an earlier religious site.

Traces of baked brick foundations were numerous in the northwest corner of the square. A sounding was dug here in 1988–89, and associated floors were found to be quite close to the surface (see Appendix 1). Another building complex characterized by scattered baked bricks and the remains of baked brick walls was located between the baked brick platform and the canal.

Apart from a few late objects presumably associated with the Parthian burial ground, the objects from this square were mostly terra-cottas: figurines, plaques, model beds and model chariots.



Fig. 227. Map 41.

Square 4I (figs. 227–228)

The only major feature not recognized in the survey was Canal O, which runs through the southwestern portion of the square. In addition, the mud brick architecture in the northeastern part of the square was seen only in the aerial photographs taken after a rain. No such photographs exist for the area to the south.

As in Square 4H, the numerous concentrations of sherds, bricks or pithos sherds are probably both the remains of ancient graves and the result of recent digging by Bedouin. Some mounds do not fall into this category, however. The baked brick circle in Unit 16 was probably a well, and some of the mounds towards the south appear to have been part of the levee beside Canal O.

There is a distinct difference between the artifacts found north and south of the canal respectively. Terra-cottas-animal figurines and parts of model chariots-were found in the south, while



Fig. 228. Photo 41.

pots, stone bowl fragments, copper and stone jewelry, cylinder seals, and large numbers of baked clay sickles comprised the small finds north of Canal O.

Square 51 (figs. 229–230)

Like Squares 3G, 4H and 3I, there were many features in this square making it difficult to accurately link data derived from the survey with those from the aerials. The mud brick traces in the northern part of the square are derived from the aerials taken after rain.

The abundant evidence for burials seen in 4H was also present in this square. Survey records note the presence of ceramics with combed decoration, which are more typical of mid Isin-Larsa assemblages than early Old Babylonian ones. This reinforces the evidence of the sounding in 4H that suggested that settlement ended early in this area.



Fig. 229. Map 51.

A significant feature of this square is the large mud-brick wall in Units 6, 16, 27 and 34, which was also seen 4H and 5H. Were our aerial coverage following the rain more extensive, it might have been possible to trace this wall farther eastward. It is probably not coincidental that the numerous mounds of sherds, bricks and pithos sherds, as well as more complete pithoi are found to the south and west of this wall. If, as we suspect, most of this square was a cemetery in the Old Babylonian period, this may well be its perimeter wall.

Four kilns were found in Units 12, 13, and 24, respectively. These were preserved at a higher level than the rest of the debris and seems to sit on top of it. One was cleared by Pamela Vandiver and found to date to the Parthian era. The elongated shape of these kilns seems suited for firing slipper coffins, which are too bulky and fragile to have been transported far from their place of manufacture, and they are located between the two concentrations of Parthian burials.



Fig. 230. Photo 51.

The high density sherd mound in the southeastern part of the square is the beginning of a high mound located in Square 5J (see below). Traces of Canal N appear in southeast corner of the square.

A wide variety of objects were recovered from this part of the site, including mace-heads, copper vessels, copper and stone jewelry, stone bowls and the ubiquitous baked clay sickles. Also common were stones, especially querns and grinders. These are quite different from the slag grinders found in the excavated areas and on the surface in areas which we believe are residential. Saddleshaped grinders of a pink conglomerate were especially common in the northeastern sector of the square. These, like the other objects found in this area, may have been associated with the graves, but until some have been excavated *in situ*, this cannot be confirmed.



Fig. 231. Map 61.

Square 6I (figs. 231–232)

The bed of Canal N is the dominant feature of this square. The surface scatter to the north and west is much less complex than in the neighboring Square 5I, with sherds for the most part evenly distributed and few other features of note. The area of dense ceramics in the south of the square is



Fig. 232. Photo 61.

one of a series of what we think are spoil heaps from the re-cutting of Canal N. Objects were neither plentiful nor distinctive. No architectural traces were found in this square, but it would appear that all of this area was residential.



Fig. 233. Map 71.

Square 7I (figs. 233–234)

Aerial coverage of this square was poor and a large number of photographs had to be combined to form this image. The northwestern corner was particularly bad, with the dark corner coming from the single low-quality photo available. Partly as a consequence and partly because of the relative simplicity of the surface scatter in this square, the map relies heavily on the notes taken in the surface survey.

The main feature is Canal N, which runs across the northern part of the square. North of this, there is a relatively featureless area. The few objects from this area—a duck weight, copper bracelet and pot stand—suggest a residential function.



Fig. 234. Photo 71.

South of the canal are large spoil heaps which we think are associated with the re-excavation of Canal N. The area around the canal is characterized by a thin scatter of glazed sherds and glass, which diminishes with distance from the canal. South of the spoil heaps, there is a large slag concentration (Units 35, 45), which is perhaps indicative of manufacturing in the area. Stones of various kinds were common in the area south of Canal N, including odd pebbles, chipped stone tools, and polished stone tools including querns, blades, cores and axes. Other objects were rare.



Fig. 235. Map 81.

Square 8I (figs. 235–236)

The map of this square follows the survey data quite closely, although the locational information provided by the imagery was especially important here. Canal N just nicks the northwest corner, but otherwise this square lies entirely in Sector V. The areas of high sherd density in the north of the square are spoil heaps containing late ceramics and glass, associated with the Partho-Sasanian use of Canal N. These late ceramics are not present in the southern portion of the square, where the



Fig. 236. Photo 81.

surface scatter revealed sherds with combed decoration, false spouts, and other characteristics which would date them to the mid Isin-Larsa period.

The most conspicuous feature in the southern part of the square is a large kiln surrounded by slag. Only a few misshapen sherds, rather than the expected piles of associated kiln wasters, were associated with it. It is possible that large slag blocks, of which there is a concentration in the southwestern corner of the square, were produced here. Other artifacts were fairly nondescript: a cylinder seal, stone bowl fragment, figurine and several bone rings.



Fig. 237. Map 91.

Square 91 (figs. 237–238)

For this square the map follows the survey data quite closely, with the exception of the traces of two small late canals, which were only clearly visible from the air. The main evidence for settlement was in the north, where the surface ceramics appear to date more to the Isin-Larsa than Old Babylonian period. The early ceramics in this area may indicate that the site reached its maximum extent during the reign of Rim-Sin-the city's time of greatness-and then the area of occupation shrank somewhat under Hammurabi and Samsuiluna. Alternatively, the edge of settlement may have been very abrupt here, leading to increased erosion of the later periods of occupation than oc-



Fig. 188. Photo 4G.

in 1987 to reveal the entire ground plan. We also made a small sounding in one of its rooms (see Appendix 1) which demonstrated that the base of the foundations was approximately one meter below the modern surface. A door sealing found beside a doorway in this sounding suggests the building had an administrative function.

Much of the rest of the architecture in the square was visible only in the aerial photographs taken after a rain, and presents a picture of large, well planned buildings west of the canal. The architectural traces on the east bank are less clear.

Eleven model chariot wheels and fragments were found to the west of the canal, and two to the east. Scatters of pithos sherds and the remains of the jars themselves *in situ* may indicate the presence of burials or storage activities in the eastern part of the square.



Fig. 189. Map 5G.

Square 5G (figs. 189–190)

As was the case with Square 3G, the 5G survey data were very complex, making it difficult to exactly match what was sketched in the survey with patterns visible from the air. Meanwhile, some of the major features of this square–especially the ridges of high density sherds which almost certainly represent streets—were only visible from the air.

This entire square was photographed after a rain, so many elements of mud-brick architecture are visible, in addition to the baked brick walls which were observed in survey. Among the note-worthy architectural features are the pair of baked brick platforms located on either side of Canal M in Units 0 and 11. As mentioned in our discussion of Square 4F, we interpret these as either quays or bridge supports, marking a crossing point for the canal. This interpretation is strengthened



Fig. 190. Photo 5G.

by the sherd ridge-or street-which runs through the square from the baked brick feature in Unit 11 to Unit 97.

The visible architecture in this area suggests the presence of more domestic structures than on the west side of the canal. An inscribed clay nail (AbD 87–134) found in Unit 35 may indicate the presence of a public building here as well. Otherwise the finds from this area are mostly domestic–jewelry, cylinder seals, and tools–while model chariot fragments were rare.

Slipper coffins in the southeastern portion of the site indicate that a Parthian graveyard was dug into the remains of the Old Babylonian city. A group of these graves is found in Units 65, 66, 76, 77, and 87 of this square. Similar burials appear in neighboring squares. Except for these burials, virtually all of the materials found in 5G are Old Babylonian.



Fig. 191. Map 6G.

Square 6G (figs. 191–192)

This is another complex square where meshing the features sketched in the survey and those seen in the aerial photographs was difficult, especially in the south. There are numerous Parthian burials in the southwestern part of the square. In some instances, mostly further to the west around Unit 83, the actual slipper coffins can be identified; to the east, around Unit 86, the small baked



Fig. 192. Photo 6G.

brick mounds probably indicate the coverings of similar graves. Otherwise there are few features of note in this square. In part this is because it lies outside the area photographed from the air after rain. Wall traces in the northeast may indicate the location of a building with baked brick foundations. The objects from the square are mostly fairly ordinary Old Babylonian objects–pots, pithos lids, cylinder seals and a few chariot fragments and other terra-cottas.



Fig. 193. Map 7G.

Square 7G (figs. 193–194)

The data collected in the course of the surface survey were closely matched by that visible in the aerial photographs. Even the edge of the eastern harbor in Units 29, 29, and 49 was noted on survey, although its location was clarified by the aerial photographs. The most significant features of this square were the ceramic table fragments in Units 0, 1, 10 and 11. Their high concentration



Fig. 194. Photo 7G.

here suggests that they were used in some manufacturing process, even if we do not know what that process actually was (see Chapter 6). Otherwise this square yielded little of interest. To the south we found somewhat higher sherd density and a number of pithos jars. The latter may indicate the location of Old Babylonian graves or they may represent large scale storage. In the northern part of the square some late sherds and glass were observed, presumably wash from the late occupation in Square 7F.



Fig. 195. Map 8G.

Square 8G (figs. 195–196)

The survey data and aerial data agreed very closely. Much of this square was taken up by the eastern harbor and was characterized by silty, largely sherd-free soil with scattered camel thorn and sand dunes. Cores augered to a depth of 4 and 6 meters from the surface in Unit 48 indicated to Lisa Wells that this had been an area of open water. Canal G cuts across the northeast corner of the square, and between this and the "harbor" there is a ridge of higher ground with sherds on it. Since



Fig. 196. Photo 8G.

there is little evidence for late sherds along this ridge, it would appear that the canal and harbor were separated one from the other here—as was the probably also the case with the western harbor. Finds were few in this square since the area of actual occupation was modest. No large baked brick structures comparable to those bordering the west canal were found here, but the area of high density sherds which penetrates into the harbor from the west is difficult to understand and would be a priority for future excavation.



Fig. 197. Map 9G.

Square 9G (figs. 197–198)

Although the surveyors did a good job of identifying surface scatters, a modern track obscures traces of the various canals which crossed this square, all of which were mapped in from the aerial photograph. Running through the square from northwest to southeast is Canal G. Canal I comes off of this in Units 34 and 35, heading northeast and is crossed by the modern track. Since Canal G appears to be Old Babylonian, Canal I would be also.

Canal N, which cuts across the southeast quadrant of the square, is another matter. All of the evidence suggests that north of the road we are dealing with a Partho-Sasanian canal, but south of it the same line continues in a recutting of an Old Babylonian channel. There are several reasons



Fig. 198. Photo 9G.

for positing the existence of this earlier canal. Old Babylonian architecture in the central mound is found to parallel its bed, which suggests that it served as a structuring feature of the Old Babylonian city. The types of Old Babylonian finds on both sides of this canal differ sufficiently that it seems probable that this was demarcation line of some significance in the early second millennium city. The Old Babylonian site would have presented a formidable obstacle to later canal diggers and it would be quite understandable for them to follow an earlier depression.

Surface small finds were relatively rare-not surprisingly given the complex of water courses in this square-and the little late material is concentrated in the east. The complex levee system beside Canal N is drawn on the map largely by extrapolation from the neighboring square.



Fig. 199. Map 10G.

Square 10G (figs. 199-200)

The surveyors noted most of the features recorded on this map. They recognized the small canal paralleling the north levee of Canal N as a feature, but did not identify it as a channel. From the air it seems certain that it had this function and was, presumably, contemporary with Canal N. Canal G cuts across the southwest corner of the square. Although this area is disturbed by the modern track, it appears that this channel had a series of brick and sherd mounds in its midst. The only



Fig. 200. Photo 10G.

other watercourse in this square is a small offtake canal in Unit 99. This canal seems almost certainly Partho-Sasanian in view of the analysis of surface ceramics in this area by Tony Wilkinson (Appendix 2).

In general the only late finds were found around Canal N, so the area of medium sherd density beyond the canal in the south central portion of the square probably represented early second millennium occupation. This interpretation is consistent with the associated artifacts-chariot wheels, stone beads and a stone bowl.



Fig. 201. Map 11G.

Square 11G (figs. 201-202)

The map records only the western half of this square, which was all that was photographed. The survey covered one more quadrant, the southeast, but nothing was found in it. The most conspicuous feature of the square is Canal N, which can be seen running through the northeast corner. Most of the sherd scatter on either side is from the spoil heaps created in the digging of that canal and therefore dating to the Partho-Sasanian occupation of this area. The two small channels seen in the south are small off-take canals from Canal G. They too probably date to the later occupation of the site. The significance of the series of small mounds of sherds along the south of the square is



Fig. 202. Photo 11G.

obscure. Since no glazed wares or decoration characteristic of later periods were noted, there is nothing to suggest that these are other than Old Babylonian, and the discovery of a model chariot wheel by one of them would tend to corroborate this dating.

Square 2H (figs. 203-204)

In retrospect, it is unfortunate that only the southeastern quadrant of this square was surveyed, since the aerial photographs indicate the presence of significant remains, including baked brick architecture, in the northeast. These are presented here from the evidence of the photographs alone.



Fig. 203. Map 2H.

The major feature of the square is Canal O, which seems quite narrow in this area and does not stand out clearly. Traces of aligned baked bricks and sherd mounds suggest that a large building was located just south of this canal, at the edge of the settlement. To the south we find additional testimony to extensive building in this area in the form of more baked brick associated with typical Old Babylonian artifacts such as figurines and model chariot parts. A linear feature running more or less east-west across the southern portion of the site can be seen in the aerial photographs. It may be no more than a modern track, but does not look like other tracks. It was not noted by the surveyor.



Fig. 204. Photo 2H.

Square 3H (figs. 205–206)

There is a great deal of information on this square because a relatively large number of aerial photographs were taken of it, including some taken in the conditions that recovered mud brick architecture (figs. 112, 144, 281). It was in this area that we did our most extensive excavations, including six 10×10 meter squares in 1990, as well as a smaller sounding in 1989 (Stone and Zimansky 1994). In the map presented here, only the walls visible before excavation and the objects found on the surface have been included. Apart from the large mud-brick wall in the northwest part of the square and the mud-brick walls that showed up after a rain, the aerial photos add little to what was observed in surface survey.



Fig. 205. Map 3H.

Most of this square is in the southeast corner of Sector III, north of the juncture of Canals M and O. Only small fractions of Sectors IV and VI are included. To the west of the large wall some traces of mud-brick walls appear in the post-rain aerials, but these do not seem to represent sub-stantial construction. The remains of model chariots were numerous in the square generally, and three fragments were found to the west of the large wall. Most of the architectural remains and small finds lie to the east, however, where extensive baked brick foundations are visible. The sounding of 1989 demonstrated that these were no more than a course or two deep, although mud-brick architecture was found following roughly the same orientation immediately below (see Appendix I). The baked brick traces are part of a group of structures that extends into the area excavated in 1990. There numerous unbaked clay sealings, together with tablets, tablet fragments, and broken enve-



Fig. 206. Photo 3H.

lopes (Stone and Zimansky 1994) testify to the administrative nature of this complex. Surface finds other than model chariot fragments finds were rare, although a plaque and a several whole vessels were found in this area.

Square 4H (figs. 207–208)

Four of the ten 10×10 m squares excavated in 1990 lie in the northwest corner of this square, so there is information to augment surface survey and aerial photography, as there was in 3H. A 5 \times 5 m sounding was also made in Unit 95, the middle of the southern edge of the square (see Appendix I). This is a square where the surface remains were dense and varied, and the aerials were



Fig. 207. Map 4H.

especially important in defining the location of scatters noted by surveyors. As in Square 3G, there may be instances where the constitution of a particular surface scatter is misidentified, but generally the mix of deposits is accurately represented.

The northwestern corner of square, separated from the rest by the bed of Canal M, is part of Sector III, characterized by regular architecture and a large number of model chariot remains. The northeast appears to be a more residential area, with traces of buildings along a street manifested as a ridge of high density sherds. The southern half of the square is heavily mounded, partly because of the height and complexity of the surviving Old Babylonian remains and partly because local bed-ouin have dug several pits in the area. A clear boundary marked off by a large mud-brick wall can



Fig. 208. Photo 4H.

be seen in the aerial photographs of taken after rain (Units 38 and 49). South of this artifacts abound, the most conspicuous of which are grinding stones of various kinds, stone palettes, beads, copper/bronze weapons, and especially baked clay sickles. The latter have been found in many parts of the site and must date to a fourth millennium occupation of the site. Their concentration in this part of the mound suggests that the soil has been more turned over here.

Human bone protruding from one of the bedouin pits and the large number of ribbed pithos fragments indicate that this is an area of second millennium B.C. interments. No burial was found in the sounding we excavated in this area, but the ceramics demonstrated that its latest occupation dated a century and an half earlier than the final abandonment of Mashkan-shapir.



Fig. 209. Map 5H.

Square 5H (figs. 209–210)

The southwestern corner of the 5H is marked off by the wall noted in Square 4H and characterized by the pattern of numerous sherd mounds, pithos sherds, etc. which are indicative of burials. In the rest of the square there are traces of both baked brick and mud-brick architecture. A sherd ridge which probably represents a street crossed the northeast corner. Neither the small finds nor the architectural traces are distinctive.



Fig. 210. Photo 5H.


Fig. 211. Map 6H.

Square 6H (figs. 211–212)

Most of the features seen on the aerial photographs of this square were also noted by the surveyors. The street noted in Squares 5G and 5H crosses 6H as a line of mounds of higher sherd density running roughly east-west. To the south are traces of quite substantial baked brick structures, one associated with a pair of brick tombs. The walls of one of these tombs were quite clearly visible



Fig. 212. Photo 6H.

because it had been cleaned out in the not too distant past. The other survived as a mound of bricks lying beside a pair of baked brick walls. In the north central part of the square there were Parthian burials in the form of either small baked brick mounds or the actual remains of slipper coffins and, in one instance, a bathtub sarcophagus. Otherwise artifacts, mostly whole pots and the occasional figurine, were not particularly abundant.



Fig. 213. Map 7H.

Square 7H (figs. 213-214)

For this square only minor details were added to the survey data as a result of the analysis of the aerial photographs. Traces of the Canal N can be seen in the southeast corner, and a significant concentration of both cuprous slag and copper-bronze fragments was identified in the center of the



Fig. 214. Photo 7H.

square. It is noteworthy that the alignment of the wall traces in this square is not parallel/perpendicular with the bed of Canal M, as it was in 5H, but rather with Canal N. Objects were not particularly abundant in this square.



Fig. 215. Map 8H.

Square 8H (figs. 215-216)

The image of this square adds little but precision to the information collected in the course of the surface survey. The square was dominated by Canal N. To the southeast are a series of high dirt piles that apparently represent the spoil heaps piled up when the canal was re-excavated in the



Fig. 216. Photo 8H.

Partho-Sasanian period. On the northwest side of the canal the levees are no higher than they are for the other Old Babylonian canals. Finds near the canal include both early second millennium objects and materials contemporary with the later re-excavation. Of the Old Babylonian objects, the most notable are the three baked clay table fragments.



Fig. 217. Map 9H.

Square 9H (figs. 217-218)

The aerial photographs and the survey data correspond quite closely, except that the former pick up a series of light colored lines running roughly from south-southwest to northeast in the southeastern corner and the north central part of the square. Although these are not as obviously canals as other linear features, they seem to originate in Canal G, so they are shown as water-lain deposit on the map. This interpretation may be confirmed in new (2002) Aster Terra imagery of the area.



Fig. 218. Photo 9H.

Recent cultivation has so raised the water table that the ancient canals are now clearly visible as heavily vegitated areas. These lines are similarly vegetated. The large, curved, sand dune in the center of the square fills a modern drainage channel, which is not aligned with these features.

The bed of Canal G crosses the northeast corner of the square and, as in 8H, large spoil heaps from its re-excavation are located to the south. These contain some late ceramics and glass, which become increasingly rare as one moves away from the canal. Otherwise finds are quite sparse: one model chariot shield and several types of grinding stones.



Fig. 219. Map 10H.

Square 10H (figs. 219-220)

The major surface scatters of bricks, sherds, etc. were recognized in the surface survey, as was the Canal G, but the small off-take channel, Canal J, and the peculiar linear features toward the southwest were only visible from the air. Sherd density was generally low in this square, especially



Fig. 220. Photo 10H.

in the east, and by and large, Old Babylonian in date. While this does appear to have been a settlement area, it may be that it was only occupied quite briefly and its deposits eroded away. Both finds and architectural traces were few.



Fig. 221. Map 11H.

Square 11H (figs. 221–222)

The surface scatter was clear in the survey, but traces of the watercourses had to be reconstructed on the basis of aerial photographs. The surveyor even missed Canal G because its path was obscured by the car tracks running along it. The off-take canals seen in the northwest corner are apparently part of the Partho-Sasanian irrigation system, and here there is no trace left of the Old Babylonian canal—it has been completely replaced by the later Partho-Sasanian cut.



Fig. 222. Photo 11H.

The large baked brick mound in Unit 94 may have been part of the Old Babylonian fortification system since it lies at the end of the traces of the city wall seen in Square 11I, but alternatively, it cannot be ruled out that it was related to the late canal. The line of mud-brick seen on survey in the east of the square is probably the remains of the city wall, but unfortunately aerial coverage did not extend far enough east to confirm this.



Fig. 223. Map 21.

Square 21 (figs. 223-224)

Only the eastern half of the square was surveyed, and the available images provide a poor picture of the western half of the site. Under these circumstances we cannot tell whether there were traces of a city wall in the western sector-certainly none is visible in the data available to us.

The edge of settlement runs more or less north-south through this square. To the east are a series of low mounds which represent areas of dense occupation. In addition to materials of the early second millennium, especially female plaques and animal figurines, there were a number of Parthian burials in this area, seen in the remains of the slipper coffins themselves as well as occasional fragments of glass jewelry and vessels.



Fig. 224. Photo 21.

Square 31 (figs. 225–226)

This is another of the squares in which the very complexity of the features makes it difficult to correlate the mounds sketched in and defined by the surveyor with their counterparts on the aerial photograph. As was the case with Squares 3G and 4H, it is possible that some mounds seen in the aerials have been misidentified, but the overall picture of complex mounding of sherds and bricks should nevertheless be accurate. The only features mapped entirely from aerial photographs were the locations of the Canals O and M in the northeast corner, whose boundaries are obscured on the ground by the modern track.



Fig. 225. Map 31.

This square was dominated by the high baked brick platform located in Units 62-64 and 72-74. Although it consists largely of baked bricks, many of which are not *in situ*, flat surfaces on its top and edges make it apparent that this was originally a platform of solid masonry. Excavation is necessary to resolve the question of whether anything remains of the structure that it once supported.

This platform apparently served as the focus of a Parthian burial ground, the edge of which was noted in Square 2I. A few of the numerous slipper coffins were well enough preserved to reveal glaze and decoration. The platform itself, however, does not appear to have been Parthian. The brick sizes are characteristically Old Babylonian and not Parthian, and it is located immediately to the north of, and may have formed part of a larger complex with, a major mud-brick platform



Fig. 226. Photo 31.

which is indubitably assigned to the early second millennium on the basis of both brick sizes and associated terra-cotta statuary. It is possible that the Parthians chose to use this area as a burial ground because they recognized the features of this platform as evidence of an earlier religious site.

Traces of baked brick foundations were numerous in the northwest corner of the square. A sounding was dug here in 1988–89, and associated floors were found to be quite close to the surface (see Appendix 1). Another building complex characterized by scattered baked bricks and the remains of baked brick walls was located between the baked brick platform and the canal.

Apart from a few late objects presumably associated with the Parthian burial ground, the objects from this square were mostly terra-cottas: figurines, plaques, model beds and model chariots.



Fig. 227. Map 41.

Square 4I (figs. 227–228)

The only major feature not recognized in the survey was Canal O, which runs through the southwestern portion of the square. In addition, the mud brick architecture in the northeastern part of the square was seen only in the aerial photographs taken after a rain. No such photographs exist for the area to the south.

As in Square 4H, the numerous concentrations of sherds, bricks or pithos sherds are probably both the remains of ancient graves and the result of recent digging by Bedouin. Some mounds do not fall into this category, however. The baked brick circle in Unit 16 was probably a well, and some of the mounds towards the south appear to have been part of the levee beside Canal O.

There is a distinct difference between the artifacts found north and south of the canal respectively. Terra-cottas-animal figurines and parts of model chariots-were found in the south, while



Fig. 228. Photo 41.

pots, stone bowl fragments, copper and stone jewelry, cylinder seals, and large numbers of baked clay sickles comprised the small finds north of Canal O.

Square 51 (figs. 229–230)

Like Squares 3G, 4H and 3I, there were many features in this square making it difficult to accurately link data derived from the survey with those from the aerials. The mud brick traces in the northern part of the square are derived from the aerials taken after rain.

The abundant evidence for burials seen in 4H was also present in this square. Survey records note the presence of ceramics with combed decoration, which are more typical of mid Isin-Larsa assemblages than early Old Babylonian ones. This reinforces the evidence of the sounding in 4H that suggested that settlement ended early in this area.



Fig. 229. Map 51.

A significant feature of this square is the large mud-brick wall in Units 6, 16, 27 and 34, which was also seen 4H and 5H. Were our aerial coverage following the rain more extensive, it might have been possible to trace this wall farther eastward. It is probably not coincidental that the numerous mounds of sherds, bricks and pithos sherds, as well as more complete pithoi are found to the south and west of this wall. If, as we suspect, most of this square was a cemetery in the Old Babylonian period, this may well be its perimeter wall.

Four kilns were found in Units 12, 13, and 24, respectively. These were preserved at a higher level than the rest of the debris and seems to sit on top of it. One was cleared by Pamela Vandiver and found to date to the Parthian era. The elongated shape of these kilns seems suited for firing slipper coffins, which are too bulky and fragile to have been transported far from their place of manufacture, and they are located between the two concentrations of Parthian burials.



Fig. 230. Photo 51.

The high density sherd mound in the southeastern part of the square is the beginning of a high mound located in Square 5J (see below). Traces of Canal N appear in southeast corner of the square.

A wide variety of objects were recovered from this part of the site, including mace-heads, copper vessels, copper and stone jewelry, stone bowls and the ubiquitous baked clay sickles. Also common were stones, especially querns and grinders. These are quite different from the slag grinders found in the excavated areas and on the surface in areas which we believe are residential. Saddleshaped grinders of a pink conglomerate were especially common in the northeastern sector of the square. These, like the other objects found in this area, may have been associated with the graves, but until some have been excavated *in situ*, this cannot be confirmed.



Fig. 231. Map 61.

Square 6I (figs. 231–232)

The bed of Canal N is the dominant feature of this square. The surface scatter to the north and west is much less complex than in the neighboring Square 5I, with sherds for the most part evenly distributed and few other features of note. The area of dense ceramics in the south of the square is



Fig. 232. Photo 61.

one of a series of what we think are spoil heaps from the re-cutting of Canal N. Objects were neither plentiful nor distinctive. No architectural traces were found in this square, but it would appear that all of this area was residential.



Fig. 233. Map 71.

Square 7I (figs. 233–234)

Aerial coverage of this square was poor and a large number of photographs had to be combined to form this image. The northwestern corner was particularly bad, with the dark corner coming from the single low-quality photo available. Partly as a consequence and partly because of the relative simplicity of the surface scatter in this square, the map relies heavily on the notes taken in the surface survey.

The main feature is Canal N, which runs across the northern part of the square. North of this, there is a relatively featureless area. The few objects from this area—a duck weight, copper bracelet and pot stand—suggest a residential function.



Fig. 234. Photo 71.

South of the canal are large spoil heaps which we think are associated with the re-excavation of Canal N. The area around the canal is characterized by a thin scatter of glazed sherds and glass, which diminishes with distance from the canal. South of the spoil heaps, there is a large slag concentration (Units 35, 45), which is perhaps indicative of manufacturing in the area. Stones of various kinds were common in the area south of Canal N, including odd pebbles, chipped stone tools, and polished stone tools including querns, blades, cores and axes. Other objects were rare.



Fig. 235. Map 81.

Square 8I (figs. 235–236)

The map of this square follows the survey data quite closely, although the locational information provided by the imagery was especially important here. Canal N just nicks the northwest corner, but otherwise this square lies entirely in Sector V. The areas of high sherd density in the north of the square are spoil heaps containing late ceramics and glass, associated with the Partho-Sasanian use of Canal N. These late ceramics are not present in the southern portion of the square, where the



Fig. 236. Photo 81.

surface scatter revealed sherds with combed decoration, false spouts, and other characteristics which would date them to the mid Isin-Larsa period.

The most conspicuous feature in the southern part of the square is a large kiln surrounded by slag. Only a few misshapen sherds, rather than the expected piles of associated kiln wasters, were associated with it. It is possible that large slag blocks, of which there is a concentration in the southwestern corner of the square, were produced here. Other artifacts were fairly nondescript: a cylinder seal, stone bowl fragment, figurine and several bone rings.



Fig. 237. Map 91.

Square 91 (figs. 237–238)

For this square the map follows the survey data quite closely, with the exception of the traces of two small late canals, which were only clearly visible from the air. The main evidence for settlement was in the north, where the surface ceramics appear to date more to the Isin-Larsa than Old Babylonian period. The early ceramics in this area may indicate that the site reached its maximum extent during the reign of Rim-Sin-the city's time of greatness-and then the area of occupation shrank somewhat under Hammurabi and Samsuiluna. Alternatively, the edge of settlement may have been very abrupt here, leading to increased erosion of the later periods of occupation than oc-



Fig. 286. Overall baked brick density.

Canal G, and in one instance (in Square 7F) overlying it. The westernmost of these mounds is the most prominent and seems to extend slightly west of the edge of the Old Babylonian mound. The presence of these late mounds needs to be taken into account in evaluating the overall distribution of objects, sherds, bricks and architectural traces.

Perhaps the best general indicator of intensity of human activity is sherd density (fig. 285). We cannot claim that our measurement of this is entirely objective, because clear differences among the individuals who executed the survey and among the groups who worked during the three seasons are apparent. Nevertheless, the aerial photographs provided some control, and the larger patterns in variation of sherd density are reasonably clear.

The highest overall density was in the central mound (Sector IV) and the parts of the east and west mounds closest to it (Sectors III and V). Another main concentration of sherds was found in a swath close to Canal B. Pockets of exceptionally high sherd density were found here and there on the east mound and also in the northernmost portion of the site. Areas with exceptionally low sherd density are found in Sector VI, the mound south of Canal O. In some measure this may be explained by the fact that so much of the surface here is covered by large mud-brick platforms and because the wash from these mounds obscures earlier surfaces. The other major area of low sherd



Fig. 287. Distribution of baked brick architecture.

density is in the eastern portion of both Sectors I and II. By and large the areas of late occupation, with the exception of that in the west, were characterized by quite low sherd density.

The overall distribution of baked bricks and brick fragments gives a similar picture. Disarticulated baked brick remains have a distribution not dissimilar to the sherd scatter (see fig. 286), although baked brick is more strongly concentrated in the central mound (Sector IV), along Canal B, and in Sector I. The late mounds are also characterized by quite dense concentrations of bakedbrick remains, perhaps because the entire Old Babylonian site stood at the disposal of any Parthians who chose to recycle building materials. Other groups of baked bricks are indicators of particular features. For example, there are three identifiable city gates, all on the eastern side of the site. One, mentioned above, straddles Canal B. The best preserved lies south of Canal G. The third, where the building inscriptions of Sin-iddinam were discovered, is immediately south of Canal O. Each of these is represented by baked-brick mounds, and other concentrations of baked bricks near the city wall may be parts of other such structures. The baked-brick platform in Sector VI is associated with other clusters of baked bricks, some of which, but by no means all, may represent collapse from that structure.

The remains of identifiable baked-brick walls, however, do not coincide with the greatest concentration of either baked-brick debris or sherd scatters (see fig. 287). Two areas stand out as having



Fig. 288. Distribution of mud-brick architecture.

relatively conspicuous walls, one in Sector III and the other, where they are more scattered, off the eastern edge of the Sector V. In both cases, large parts of whole buildings can be made out, as well as sections of other walls. The fact that the areas with highest generalized brick concentrations do not coincide with where we find such well preserved baked-brick architecture may be an indication that the key to these features is post-depositional change, whereby some areas—often somewhat higher in elevation—experienced such degradation that most walls have fallen into decay, whereas baked brick in more peripheral and low-lying areas remained below ground and less prone to disturbance.

Traces of mud-brick architecture were generally only observable from the air under very special circumstances. Thus fig. 288, which shows patterns of mud-brick walls on both sides of the west canal and on parts of the east mound, should not be construed as indicating that these were the only areas of mud-brick on the site. Aerial photographs taken after the only substantial rain during the 1990 season, at the crucial time in the drying process when the mud-brick walls retained more moisture that the slightly looser fill of the rooms and streets, revealed architecture near Canal M. The area in which we could trace walls is limited to what we could photograph before the wind picked up, dust began to move, and the walls dried to the same color as their surroundings. In the eastern area, the situation is somewhat different: the surface scatter of sherds has



Fig. 289. Distribution of surface sand.

remained remarkably undisturbed, and the contrast between the absence of sherds in places where mud brick has eroded and their presence within rooms of buildings leaves a clear indication of where the walls once were. Similar conditions prevailed in the west mound in the area that became the focus for excavations in 1990 (Stone and Zimansky: 1994). The traces there show quite regular architecture to the east of the large wall noted above; to the west of this wall and in Sectors IV and V, the less regular architectural patterns that characterize domestic areas in other Old Babylonian sites prevail.

The distribution of dunes is worth discussing, inasmuch as sand obscures our view of the surface of the site and shows a tendency to accumulate in low-lying areas (fig. 289). Sand is found in some of the canals and covers the western portion of Sectors I and II. It is likely that both the low density of sherd scatter and the somewhat lower density of objects observed in the latter areas is a consequence of this factor.

In some cases, sand accumulated in modern drainage channels. Thus the series of linear swaths of sand found especially in the east mound (Sector V) indicate the locations of drainage channels. The one that extends into the eastern edge of the east harbor may be of some importance. At



Fig. 290. Distribution of all objects.

present, no channel to provide access to this harbor can be identified, and it seems likely that the modern drainage channel is located in what was once a small canal leading into the harbor.

The overall distribution of small finds also indicates details of site organization. Fig. 290 shows where objects were found on the surface of the site, omitting a few classes such as graves and the odd brick or door socket. Overall sherd scatter is only slightly predictive of object density. Taken collectively, objects were distributed for the most part quite evenly, with noticeable concentrations in the southern portion of the central mound and the west mound (Sectors III and IV). But if each piece of terra-cotta statuary and each barrel-cylinder fragment is counted, the highest concentration of objects is in Sector VI. These, however, represent unusual processes of deposition. In general, apart from the area near Canal O, Sector VI evidences relatively low object density.

Although the area of Parthian occupation in Sector III exhibits a normal abundance of small finds, object density is low on the late mounds in Sector IV. This may reflect relative poverty of those who produced the debris that obscures the remains of the much richer underlying Old Babylonian city. A similar dearth of objects is seen immediately to the north of Canal G and especially the area near the two small Old Babylonian canals that were dug from Canal G. If one accepts our



Fig. 291. Distribution of Uruk objects.

suggestion that this was a garden area, this is understandable. Otherwise, Sectors I and II have an average object density, including the western part, which had very low sherd density.

Objects firmly dated to the fourth millennium (fig. 291), mostly baked clay sickles, are largely limited to the south portion of Sector IV and Sector VI, where they appear in smaller numbers. The exceptionally high density of baked clay sickles in the southern part of Sector IV may in part be due to the large number of burials in this area, which turned over the ground more. This does not explain the numerous sickles in Sector VI, however. It was noted in chapter 8 that combed ceramics associated more with earlier Isin-Larsa occupation than with the Old Babylonian period were found in survey in the part of Sector IV where the Uruk remains are most apparent. The sounding in this area (see Appendix I) revealed Isin-Larsa levels immediately beneath the surface. The presence of baked clay sickles in some quantity in the same area suggests that this part of the central mound, together with the Sector VI, made up the original settlement in this area, first occupied in the fourth millennium and again in the Akkadian period. There was probably no settlement on the rest of the site until after Sin-iddinam built the city wall. The single auger hole drilled in this area found evidence for occupational debris for the entire 6.3 meters depth below the modern surface, much to our surprise (see chapter 2), indicating a greater absolute depth of the site in this area than was the case in Sector III. We certainly would not expect second- or even late third-millennium remains



Fig. 292. Distribution of Old Babylonian objects.

to be buried so deeply, given that second-millennium watercourses are visible on the surface today. It therefore seems likely that this great depth of deposit includes the remains of an earlier settlement.

Objects dating to the early second millennium (fig. 292) are found on all parts of the site. The number of objects usually drops off sharply at the edge of the densely occupied area, but the southeast is an exception. There the city wall lies well outside the area of settlement delineated by tell accumulation and high sherd density, yet early second-millennium artifacts were found in some quantity in the intervening expanse.

If we exclude large clusters of objects deposited in special circumstances, such as the statuary beside the temple platform, the inscribed cylinders from the Sector VI, and the large group of ceramic tables in Sector IV, object density was highest in the southern portions of Sectors III and IV. Elsewhere, objects were quite evenly distributed, with the notable exception of the southern portion of Sector VI and the area closest to the central canal.

The late objects—mostly glass vessels, bracelets and beads, and the copper/bronze discs that we interpret as coins—were only found in high density on the westernmost of the mounds along Canal G that shows evidence of post-Old Babylonian occupation (fig. 293). For some reason, the other late mounds had little other than sherds and bricks on them. The scatters of late objects in Sectors IV and VI are probably to be associated with the burials in these areas (see below). It is noticeable, however, that none of the late canals shows a correlation with high object frequencies.



Fig. 293. Distribution of Parthian and Islamic objects.

As with distributions of sherds, bricks, and architecture, these generalized object distributions only suggest density of occupation over time and space. Most of the artifacts and features recorded, however, go beyond this to reveal a sense of the functional organization of the site as a whole.

Objects and Features with More Specialized Functions

Features Relating to Pyrotechnology

In chapter 5, we indicated that there were various types of slags on the site's surface, some of which were deliberately manufactured for use as grinding stones (Stone et al. 1998). After we established that we were indeed dealing with a hitherto unknown synthetic basalt industry, we would have liked to recheck each recorded ceramic slag concentration against the more detailed typology of these materials of the 1990 season, but this was not feasible. Fig. 294 shows the distribution of concentrations of slag and of kiln wasters. Where these are found together, as along Canal B and in Sector V (especially near Canal P), we are reasonably confident that we are dealing with ceramic production areas. But in other areas, such as Sector III, we find evidence for slag with few or no associated kiln wasters. The same can be said for some of the slag concentrations in Sector VI. It



Fig. 294. Distribution of ceramic slag and kiln wasters.

may be that these reflect the synthetic basalt industry rather than the ceramic industry. In addition, we are skeptical of the largish area of kiln wasters shown in the southeastern corner of Sector VI. Kiln wasters are recorded in only one fifty-meter square and seem to stop quite abruptly at the edge of the square, suggesting that the information may have been miscoded. Without revisiting the site, we can only present the data as recorded. Certainly, no associated ceramic slag concentration was found here.

A series of kilns found in the southern portion of Sector IV was associated with small numbers of kiln wasters. The one kiln we cleared was dated to the Parthian occupation through associated sherds. The kiln was large and elongated, suggesting to us that it and its companions were used to fire the slipper coffins found on the site.

There is evidence for Old Babylonian ceramic production along Canal P. The presence of two large concentrations of slag without associated kiln wasters to the northeast of this area may locate an area of synthetic basalt manufacture. There is also good evidence for ceramic production, albeit on a smaller scale, along Canal B, especially toward the east. Although some of the slag concentrations in Sector III may be residues of ceramic production, in most cases, the absence of kiln wasters and the thin distribution of these remains suggest some other activity, possibly the shaping of synthetic basalt into useable grinders.


Fig. 295. Distribution of copper and cuprous slag concentrations.

Interpretation of the remains from the southern portion of the site is particularly difficult, because a number of large slabs of synthetic basalt that may once have been used as construction materials were found there. Some of these may have been recorded not as single slabs but as areas of slag concentration.

If the problems of distinction between synthetic basalt and the remains of kilns make the notation of the presence of ceramic slag in the survey notes difficult to interpret, this is not the case for cuprous slag, which was for the most part found concentrated in a few discrete locations. They were often associated with numerous copper fragments and almost certainly mark the location of workshops of copper smiths. Their distribution is shown on fig. 295. Eleven concentrations of cuprous slag were found, six in Sector IV, the central mound. Three of the latter were beside the major street in this area, one other where it seems the street ought to run but we have been unable to follow it, and the remaining two only about 30 meters away. These data suggest that this street must have been the major focus of copper working in the city. The two concentrations found in Sector III might also have been located along this thoroughfare, because a clear crossing point was found associated with Canal M. Moreover, a broad scatter of similar material was found associated with part of the spoil heaps to the east of Canal N, suggesting that the re-digging of this canal in Partho-Sassanian times might have disturbed the remains of yet another of these workshops. It seems likely that this street ran to the main east gate of the city, but data to confirm this are lacking.



Fig. 296. Map showing amount of copper recovered per 50 m square.

Thus, there appears to have been some concentration of copper working along the main street on the central mound, and eight of the eleven concentrations may be aligned along the same axis. However, the large concentrations of cuprous slag and metal fragments in Sector II and that associated with an isolated structure in the southeast of Sector V indicate that neither Sector IV nor this single roadway held a monopoly on this industry.

Neither copper nor copper slag was always found in concentrations. Figs. 296 and 297 indicate the total amount of copper—both fragments and actual artifacts—and cuprous slag recovered from each 50 meter square. Omitted from fig. 296 were the copper disks thought to date to Parthian and Early Islamic periods and the substantial copper bust, also thought to belong to the late occupation (AbD 87-294). By and large, the overall distribution of copper closely mirrors the distribution of Old Babylonian artifacts. It is abundant in all parts of the site except the southern portion of the south mound (Sector VI) and the area around the central canal (Canal G), where harbors and later overburdens render second-millennium objects scarce. Because copper was imported or created from imported materials and can therefore be thought of as something of a luxury, the comparatively even distribution of this material suggests that wealth—and therefore the wealthy—was not concentrated in any particular part of this city.



Fig. 297. Map showing amount of copper slag recovered per 50 m square.

The distribution of copper slag (fig. 297) indicates that copper production was limited to the band across the center of the site noted above. Significant amounts of cuprous slag were also recovered from both the area around the north canal (Canal B) and the rest of the central mound, although no major concentrations were noted there by the surveyors. It is possible that copper production, at least on a small scale, may have been more broadly distributed than the actual concentrations alone would indicate.

Graves

Traces of graves at Mashkan-shapir came in a number of forms, some of which could be more confidently identified as such than others. The clearest were the remains of slipper coffins and bathtub burials. These date to when the site was used as a cemetery around the time of its last occupation. More common are large pithoi, which were often used for burial in the Old Babylonian period. However, when the traces of these are no more than the large rim of a vessel buried beneath the surface, it is difficult to tell a burial jar from one used for large-scale storage. Their function in each case can only be fully established through excavation.



Fig. 298. Distribution of pithos sherds and pithoi.

In addition to the pithoi and slipper coffins themselves, we often encountered concentrations of the sherds of such large vessels. Sometimes these concentrations were associated with burials that had been robbed and sometimes they appear to represent no more than the result of centuries of erosion. Fig. 298 shows the distribution of both large jars and concentrations of large sherds. The pithoi themselves were most abundant in the southern portion of the central mound, immediately to the south of the large mud-brick wall observed in aerial photographs. It must be noted, however, that pithoi were found in all other sectors of the site and large pithos sherds were found in some areas where no pithoi were observed intact, such as in the northwest corner of Sector IV. There was a pronounced concentration of both pithos sherds and pithoi in the southern portion of Sector IV. In some instances, thanks to small-scale excavations carried out by the local bedouin, it could be determined that these were associated with fragments of human bone. Also found on the surface in this part of the site were many of the kinds of objects typical of Old Babylonian graves elsewhere: jewelry, cylinder seals, cosmetic palettes, and the like (see below). This area was also delimited by a large wall, which adds to the interpretation of this south part of Sector IV as an ancient cemetery. However, at other contemporary sites, such as Ur (Woolley and Mallowan 1976), burials were found within domestic contexts and we in fact found a number of burials (none in pithoi, however) in the course of our 1990 excavations. Some, but probably not all, of the other



Fig. 299. Distribution of Parthian and other late burials.

traces of pithoi found elsewhere in the site may therefore also represent burials, while others may reflect large scale storage.

The distribution of later graves—slipper coffins and, less commonly, "bathtubs"—is quite different (fig. 299). Apart from a few outliers, later graves were found concentrated in two areas: the midst of Sector IV and surrounding the baked-brick platform in Sector VI. Associated with the central group was a series of rough brick mounds, each of which probably covers an addition slipper coffin. In some instances, burials in Sector VI used the large slabs of ceramic slag that are common in this area as covers. It not inconceivable that the Parthians buried their dead here because they recognized the baked-brick platform as a feature of religious significance.

Dating and Distributions of Non-Old Babylonian Objects

Distributions suggest a date for some items found in the surface survey. For example, ground stone axes and chipped-stone tools are known to be common in the fourth millennium but could also have been used during the Old Babylonian period. Fig. 300 shows the distribution of stone axes at Mashkan-shapir. None were found in Sector VI or the southern part of Sector IV, the areas where baked clay sickles are concentrated and thus where we would expect to locate the original



Fig. 300. Distribution of stone axes.

settlement. On the other hand, they were found in some abundance in Sectors I, II, and V—in all cases well removed from the area of fourth-millennium occupation. Under these circumstances, it seems likely that these stone axes date to the Old Babylonian period.

The case of chipped flint and obsidian tools is similar (fig. 301). None were found in the areas where baked-clay sickles were concentrated. Instead, they are most common in the eastern part of the site, near the city wall and are perhaps associated with manufacturing or agricultural activities related to the isolated large buildings in this area.

As noted above, the distribution of late objects does not correspond well with sherd scatter evidence for late occupation. In fig. 302, different symbols are used for glass bracelets that date to the Ottoman period only and those that can range in date from Parthian to Ottoman times. It is noteworthy that the majority of the examples that can only be Ottoman are found clustered in Sector II, in an area where the survey notes, which contain precise and detailed descriptions, make no reference to concentrations of glazed ceramics, glass fragments, or late graves. The remainder of the late objects are clustered on the westernmost of the late mounds and are thinly scattered elsewhere.

How are we to explain the cluster of Ottoman-period bracelet fragments in the near north mound? To this day, the area around Mashkan-shapir is used as a winter campground by the



Fig. 301. Distribution of chipped stone tools and baked clay sickles.

bedouin, and it is possible that the glass bracelets are all that remains of their repeated temporary occupation of the near north mound. Certainly, there is no evidence for any permanent occupation in recent centuries. There are no canals to support such a settlement and virtually no other artifacts indicative of any occupation of the area during the last millennium.

Pots

As we indicated in Chapter 6, the presence on the surface of whole vessels or vessels with completely reconstructable profiles probably bears little relation to their presence below ground and even less to the use of those particular types of vessel by the inhabitants of that part of the site. Fig. 302 shows the distribution of various kinds of ceramic vessels other than large pithoi and slipper and bathtub coffins. These include whole vessels (which are included in the object registry; Appendix 3), broken vessels with reconstructable profiles found on the surface, and larger vessels (pots rather than goblets or bowls) the top of whose rims were visible on the surface. In general, as was to be expected, the distribution of these items seems quite random, with the east and south mounds exhibiting the lowest frequency of finds. There is, however, a noticeable cluster of pots—mostly seen only as rims—in the central mound to the north of the large wall and on both sides of the main



Fig. 302. Distribution of late objects: Copper-bronze coins and glass vessels and bracelets.

street. While such a cluster may well be no more than happenstance, it might also indicate more intensive storage activities in this part of the site than elsewhere. Alternatively, given that whole vessels are most often associated with burials, it might represent intramural burial either of infants or simple inhumations of adults. In both cases, groups of jars might be seen on the surface. Were large pithoi used for these burials, however, the tops of the associated ceramics would be expected to be lower than the top of the pithos jar. Only excavation in this area will demonstrate whether this cluster is of any significance.

Terra-cotta Statuary

If ceramic vessels are broadly distributed across the surface of the site, this is not the case for terra-cotta statuary. As shown in fig. 304, the vast majority of the terra-cotta statuary fragments re-covered from Mashkan-shapir were found associated with the large mud-brick platform located in the southern mound (Sector VI). Most pieces came from a limited area to the southwest of this platform, on and around a small knoll, but some were found on the platform itself. Because such platforms are associated with temples in other Mesopotamian sites, and because all examples of terra-cotta statuary from the Old Babylonian period has also been associated with temples, the argument that these fragments represent all that is left of a group that once decorated the entrance(s)



Fig. 303. Distribution of whole pots.

to the main temple at Mashkan-shapir seems unassailable. The only unusual feature is that they are found on the back side of this platform, in the area away from the rest of the site. As indicated in Chapter 6, a possible explanation is that the temple had ramps on all four sides, only one of which is visible on the surface, but this suggestion must await future excavation.

Apart from this group, three other pieces that might fall into this category were found. Only one piece has a similar findspot, although it defies interpretation. AbD 88-303 is of interest because it was found associated with the only platform outside the south mound identified at Mashkan-shapir—the platform located in the southeastern corner of the central mound. Unfortunately, we cannot tell what kind of statue might have been involved here because we have only a single, obscure fragment.

The two other pieces found outside the south mound that we have placed in this category may in fact be something else. As indicated in Chapter 6, one might be part of a model bird, with the head broken off, and the other looks like a scapula made of baked clay. The fact that these two are the only large pieces of worked terra-cotta (apart from an equally peculiar piece from the 1990 excavations) found in contexts apart from mud-brick platforms suggests that they belong in a different category from the statues. No other odd-shaped pieces in baked clay have been published from other Old Babylonian sites, perhaps because they are so difficult to interpret.



Fig. 304. Distribution of baked clay statuary.

Unlike the other terra-cotta plaques and figurines, there is little variability in the findspots of the terra-cotta statuary at other Old Babylonian sites. At Tell Harmal (Baqir 1946: 23–24, fig. 5), Khafajah (Hill, Jacobsen, and Delougaz 1990: 223), and Haradum (Kepinski-Lecomte 1992: 126) terra-cotta lions guarded entrances to temples and, in the case of Tell Harmal, the inner sanctuary as well. At Isin, most pieces were found on the surface some 100 to 300³ meters from the Gula temple to the north, south, east, and west. One piece was found near the ramp built by Adad-apla-iddina to gain access to the Gula temple (Hrouda 1977: 43), and Hrouda has suggested (1977: 31) that all of the examples may have decorated such ramps. The almost universal association of such figures with temple entrances corresponds with the clustering of the Mashkan-shapir statuary in the southern portion of the site, where the remains of mud-brick and baked-brick platforms had already suggested the presence of the main sanctuary. Because our pieces most closely resemble those from Isin, perhaps they too were aligned along ramps that led up to the main shrine from all sides. If so, it might explain why they were found almost exclusively on the steep backside of the temple

^{3.} The Isin material is made more complicated by the quite large number of pieces, generally ascribed to Isin, that fell into the hands of illicit antiquities dealers. Looters undoubtedly disturbed their findspots at Isin.



Fig. 305. Distribution of model chariots.

mound, close to the edge of the site. Perhaps where the drop-off is less abrupt, remains of similar figures still remain beneath the ground.

Model Chariots

Even if the concentration of terra-cotta statuary is the most marked of any object class, there are some other terra-cottas that are also unevenly distributed over the surface of the site, most notably the model chariots. With one exception, model chariots were found broken—as bases, shields, and, most commonly, wheels. Fig. 305 shows the distribution of model chariot bases and shields, both of which are heavily concentrated in the west mound. Other fragments are found in lower densities elsewhere around the site, especially in the northern portion of the southern mound (Sector VI). Their distribution within the west mound is also worth considering. In the first place, the major wall seen to divide the southern part of the west mound into two sectors does not seem to have served as a boundary between model chariot remains. Both the east sector, with its very regular architecture, and the west sector, whose architecture more closely resembles that of domestic structures, are equally covered with model chariot fragments. Model chariots are also found in some quantity in the large rectangular area—seen only from the air—located in the west-central part of



Fig. 306. Distribution of model chariot shields.

the mound, which might represent a single large building. They were less common in the northeastern portion of the west mound.

Because of the limited iconography of the model chariot shields, it is also possible to examine the distribution of each of the designs found on the surface—the god Shamash, the god Nergal, a pair of lion sickles, and the lion mace (fig. 306). The model chariots with symbols on them—the lion sickles and lion mace examples—are found in all parts of the site, although the lion sickle design is found most often in the west and south mounds. The one example showing the god Nergal is found in the east mound. All but one showing the god Shamash were found on the west mound, and the one example found in the south canal may well have originated there. Thus, while all the designs that can be associated with Mashkan-shapir's chief god Nergal were found in all parts of the site, shields showing the main god of Larsa—Shamash—were concentrated on the west mound.

Terra-cotta wheels were part of model chariots, although they were probably also used with other objects as well. Fig. 307 indicates the distribution of such wheels, which have been divided into two categories: the more common small wheels; and large wheels with hole diameters greater than 12 mm—i.e., wheels with holes greater than the largest axle hole in any chariot base. There is some concentration of model wheels on the west mound—more in the case of the smaller wheels



Fig. 307. Distribution of model chariot wheels.

than the larger—but it is certainly less pronounced than the distribution of the fragments of the model chariots themselves. Some other clusters of small wheels may also be noted, one in the east mound (Sector V) and one in the near north mound (Sector II). A few model chariot bases were found near the former, but not the latter.

Other than Mashkan-shapir, the only site at which large numbers of model chariots have been found is Kish, from which no precise contextual data is available to assist us with interpretation. Isolated model chariots have been found in both domestic and religious areas at other sites, but with poorly detailed associations. It is intriguing that among the Kish chariots two versions—depictions of the man with a bow taking aim, and of Ishtar armed—were found on both Uhaimar and Ing-harra, while two other common types—showing the man with the mace and combinations of deities—were found only on Uhaimar (Stone 1993: 93; Moorey 1975: 82–87).

Why do only Mashkan-shapir and Kish have such large quantities of model chariots, and what they were used for? In the course of our large-scale excavations in the west mound (Stone and Zimansky 1994), we found model chariots in some quantity, indicating that their concentration on the surface in that area was not fortuitous, yet these questions remain unresolved. An administrative function for this area was indicated by our discovery of relatively large numbers of seal impressions



Fig. 308. Distribution of baked clay plaques.

and one administrative tablet. But how model chariots were used in this context remains obscure (Stone 1993). It appears that model chariots—and perhaps model chairs also—have iconography that is site-specific, especially when compared to all other terra-cottas. They may have been votive objects of particular interest to one segment of the population, they may have been used as substitutes for the god for low level oath taking, or they may have had some quite different role. The roles of the frequently depicted Nergal and Zababa as war gods may be relevant, but this fails to explain the representations of Shamash. There is, in any case, a demonstrated association between model chariots and buildings of administrative function at Mashkan-shapir. If the distribution of such administrative activities in the city as a whole corresponded to the distribution of chariot shields and bases shown in fig. 305, it was concentrated in, but not exclusive to, the west mound.

Plaques

The iconography of model plaques is quite varied, but to the extent that they fall into categories, their distribution is shown on fig. 308. Although found in all parts of the site, they were somewhat concentrated in the south mound (Sector VI) and in the southern portion of the central mound (Sector IV). This pattern is consistent with the results of our survey of objects from other



Fig. 309. Distribution of baked clay figurines.

Old Babylonian sites, where they appeared most frequently in religious contexts, although they were not uncommon in houses and palaces. Among the different designs, there is little in the way of patterning. The discovery of two of the three presentation-scene plaques in the eastern portion of the mound and of two of the three nude male plaques in the near and far north mounds might be significant, but the sample would have to be much larger before any conclusions could be drawn.

Given the wide variety of contexts from which they have been recovered and problems with the database on Old Babylonian objects outlined at the beginning of the chapter, no clear patterns can be adduced and no functional attributes associated with such terra-cottas. Like figurines, they have been found in palaces, temples, domestic areas, and even fortifications and must be seen as one of the most ubiquitous object types of the Old Babylonian period. Not surprisingly, the Mashkan-shapir examples appeared in a similarly wide range of contexts.

Figurines

By and large, the distribution of figurines (fig. 309) mirrors that of the plaques. Again we find a strong concentration of these items in the southern portion of the central mound and in the south mound. There is, however, some evidence for differential distributions of the various kinds of



Fig. 310. Distribution of model beds, boats, and chairs.

figurines. Whereas animal and nude female figurines were found primarily in the south and southcentral mounds, most male figurines were found outside this area, especially in the near and far north mounds. No such distinction between the findspots of male and female figurines has been observed in the examples from other Old Babylonian sites, however, so the pattern observed at Mashkan-shapir may merely reflect sampling error.

Model Beds, Boats and Chairs

None of the various other types of terra-cottas recovered from Mashkan-shapir were found in large quantities. Only a handful of model beds, boats, and chairs were found, and some of the model chairs are a little difficult to interpret. Moreover, some model chairs—for example, those with human figures on them—are perhaps better classed with figurines and plaques. Fig. 310 shows the distribution of these items, and if the equivocal model chairs are excluded from discussion, we find that model beds and model boats (all two of them) were found either on the south mound (Sector VI) or in that part of the east mound (Sector V) that we have already argued was the center for ceramic production. Woolley argued that Diqdiqqa was so rich in terra-cottas because they were made there, and the same case could be made at Mashkan-shapir: model beds and boats were used



Fig. 311. Distribution of cylinder seals.

primarily in religious contexts—as was the case at other Old Babylonian sites—but are also to be found in the areas where they were made.

Although model beds have been found in both domestic and religious contexts at other Old Babylonian sites, there appears to be a bias toward religious findspots. It is possible that those found in domestic contexts were associated with private worship. However, because model beds were only common at Nippur and Ishchali and by far the largest sample of objects from religious contexts comes from Ishchali, it is also possible that this preponderance of beds from religious contexts may merely reflect an unusual popularity of model beds at that site. At other Old Babylonian sites, model boats have been recovered from both religious and domestic contexts but are so rare that few conclusions can be drawn as to their likely association, and since most published model chairs lack good contextual information, we are hard pressed to understand their function.

If we turn from an examination of each type of terra-cotta to an examination of the terra-cottas as a whole, it becomes clear that, with the exception of model chariots, they were concentrated in the southern, religious quarter and also in the southern portion of the central mound, the one place where another mud-brick platform, presumably also designed to support a temple, has been identified. Elsewhere, these items were much less numerous. This pattern corresponds well with the



Fig. 312. Distribution of stone grinders.

data from other Old Babylonian sites where, though terra-cottas are found in all contexts, they seem most common in temples and shrines. It also serves to reinforce our argument that model chariots should be treated separately—presumably because they served a different function—from other terra-cottas.

Cylinder Seals

Fig. 311 shows the distribution of cylinder seals over the surface of Mashkan-shapir. These items are noteworthy for the evenness of their distribution. Cylinder seals were found on all parts of the site but the south mound, and the various design categories show no particular patterning. Since cylinder seals can be considered as the Mesopotamian badge of office, owned only by the more important members of society, their broad distribution suggests that elites were present—presumably resident—in all parts of the city, including those that have been identified as centers of manufacturing. The absence of cylinder seals in the south mound is a little odd, given their frequent discovery in temple contexts at other Mesopotamian sites. The likely explanation, however, is the erosion of the mud-brick platform that has probably buried many of the original Old Babylonian occupation levels.



Fig. 313. Distribution of synthetic basalt grinders.

Stone Grinders

Stone grinders of various kinds were common objects on the surface of Mashkan-shapir. Some came in very clearly defined types, such as the cuboid and discoid grinders (although the latter were very rare), while others were more varied in form. As indicated in Chapter 6, we divided the small grinders into grinders with face wear, grinders with end wear, and flat grinders. Larger stone grinders were simply classified as miscellaneous. Fig. 312 shows the distribution of these items, and it is immediately apparent that all but the flat grinders were strongly clustered in the east mound (Sector V).

There is some variation in the degree of clustering. No discoid grinders and only one facewear grinder⁴ were found outside the east mound, and 60% of all cuboids were also found in this area. Miscellaneous grinders—and artificial basalt grinders (see below)—were not only clustered in the east mound but also immediately to the south of the wall in the central mound, in precisely the same area that saw the greatest clustering of pithos jars. Some of these grinders were large saddle querns, some of conglomerate, and at least one of true basalt. No association has been made at other sites between such grinders and burial, but this does not necessarily mean that such

^{4.} This was found beyond the survey area to the northwest of the site.



Fig. 314. Distribution of stone bowls: materials.

associations did not exist. Site reports tend to be remarkably laconic on the subject of grinding stones. At Mashkan-shapir, at least, there seems to be a clear association between the two, but whether such querns were used as part of the burial ritual there must await excavations in the area.

Grinders with end wear were only weakly associated with the east mound, and flat grinders were not found there at all. The latter were quite rare, and we must assume that they were used for a function different from the other grinders. The grinders with end wear present a more complicated case and were found in places other than the east mound—most conspicuously in the northern portion of the central mound. We may well have failed to distinguish pestles used in food preparation from less mundane types of grinders with end wear.

Also found on the east mound were a number of pebbles of various kinds of stones—all of which, it must be remembered, had to have been imported from a considerable distance. Some of these may have been no more than the raw material for making more stone grinders, but others were of more decorative stone, suggesting that these grinders may be indicators of the location of lapidary workshops. In this regard, it may be noteworthy that the grinders are not found in the areas of the east mound with the most copious evidence for ceramic production. In any case, the data suggest that the east mound as a whole was a center for production both of ceramics and of objects of stone.



Fig. 315. Distribution of stone bowls: forms.

Only the Haradum report includes detailed information on grinders of various kinds. There, grinders, including pestles, were found in a majority of the buildings, including both the temple and mayor's house.

Synthetic Basalt Grinders

Stone was not the only material out of which grinders were made. As detailed in Chapter 5, the inhabitants of Mashkan-shapir made most of their everyday grinders out of a manufactured synthetic basalt. We began to take note of this material in the 1990 survey, which covered half the site. While the distinction between synthetic and natural basalt may thus not have been recorded in the field with the consistency that one might like, the distribution shown in fig. 313 is not without interest. It reveals a strong concentration in the far north mound that cannot be explained by the survey procedures. However, we are less confident of the relationship between surface and subsurface assemblages of large stone grinders in general than we are for other artifacts. In the large-scale excavations carried out in the west mound in 1990, we encountered numerous synthetic basalt grinders, many of which were *in situ*, yet only one grinder was noted on the surface.



Fig. 316. Distribution of copper/bronze fishing equipment.

Stone Bowls

Stone bowls were the most common high prestige items at Mashkan-shapir, found in all parts of the site, with no real evidence for concentration in any particular area. Fig. 314 shows the distribution of the different kinds of stone used. There does seem to have been a concentration of black and white granite in the south mound and the southern portion of the central mound, but because the total sample is no larger than five pieces and all are sherds, many may come from a single vessel. Otherwise, the various kinds of quartzite and alabaster are found in all parts of the site, the only noteworthy pattern being the large number of sherds of vessels of less common stones found in the northern portion of the site. The significance of this, if any, remains moot.

The patterning in the distribution of stone vessel forms (fig. 315) is similar. Although none of the samples is very large, it does not appear that the more elaborate shapes were exclusive to any particular part of the site. Indeed the most striking feature of the stone vessels in general, and the different shapes in particular, is the degree to which they are evenly distributed across the surface of the site.

Proveniences at other Mesopotamian sites indicate that stone bowls in general are associated with palaces and the larger temples. Bowls of alabaster are sometimes found in private houses as



Fig. 317. Distribution of copper/bronze tools.

well, but those made of other stones, like marble, steatite, black-and-white granite, and even limestone, were rarely found outside public buildings.

Copper Implements

A number of different kinds of copper implements were recovered in the course of the Mashkan-shapir survey, most of which are shown in figs. 316 and 317. The items associated with fishing—fish hooks and harpoons—were quite rare, so their absence in the north and south mounds has no significance.

Fig. 317 demonstrates that copper implements were common in all parts of Mashkan-shapir, albeit a little less so in the south and east mounds. No particular industry, such as wood-working, can be identified based on the associated tools. Rather, we must conclude that copper implements were generally available to most, if not all, citizens and were used in all parts of the site.

Weapons

If copper implements were found in all parts of the site, the same cannot be said of copper/ bronze weapons. These, together with stone mace-heads, were found in significantly higher



Fig. 318. Distribution of weapons.

numbers in the southern portion of the central mound than anywhere else (see fig. 317). In some ways, this pattern is a little peculiar. While copper weapons were associated with burials at other Old Babylonian sites, this is not the case with stone mace-heads, which were strongly associated with palatial and religious contexts. However, in many of these cases, the mace-heads in question were of the large, inscribed, ceremonial type, which is quite different from the small examples from Mashkan-shapir. Although the sample is small, the distribution data from Mashkan-shapir suggest that both weapons and mace-heads were associated with those buried in the south part of the central mound.

At other Mesopotamian sites, such weapons are, not surprisingly, most closely associated with fortifications and palaces. Additionally, they are sometimes found in graves and even in domestic areas.

Jewelry

Fig. 319 illustrates the distribution of copper jewelry: rings, earrings, bracelets; stone jewelry in the form of beads; and other decorative items, most notably shell rings. Jewelry of glass has not been included in this map. As expected, jewelry was most common in the southern portion of the central



Fig. 319. Distribution of jewelry.

mound, the part of the site that we suspect of having been a cemetery. Otherwise, it was distributed quite widely over the site, with the exception of the south mound—identified as the religious quarter—and the west mound—probably the center for administrative activities. The other area with a low density of jewelry is the area near the central canal that was generally low in artifacts of all kinds. If conclusions can be drawn from these distributions, it can be suggested that jewelry was associated primarily with burial and habitation but not with public institutions, as is the case at other Old Babylonian sites.

Some differences in the distribution of the various kinds of jewelry can be noted. The eastern portion of the site, for instance, yielded quite large numbers of both beads and shell rings but almost no copper jewelry. Since this area has been suggested as the focus of lapidary work on the basis of the concentration of stone grinders in the area, it is possible that this is a consequence of manufacture rather than use. It could also be argued that the absence of copper jewelry in this area might signify a less affluent population, but this is belied by fig. 296, which indicates that overall copper remains were similar to other parts of the site.

A somewhat different issue is whether the absence of shell rings and the large number of copper rings found in the southern portion of the central mound can be taken as an indication of greater wealth or status of the population buried in this part of the site. However, given the relatively small



Fig. 320. Distribution of palettes and whetstones.

samples involved and the difficulty of distinguishing broken items of bone or shell from the large amount of animal bones scattered over the surface of the site, any such suggestion remains very speculative.

At other Old Babylonian sites, apart from a few examples from the palace at Mari and the temple at Ishchali, copper/bronze jewelry is associated with domestic contexts such as houses and graves. Under these circumstances, the discovery of copper/bronze rings and pins at Mashkan-shapir, especially where intact, is most probably an indicator for the presence of graves, although they may also mark areas of domestic housing.

Stone Palettes and Whetstones

Stone palettes and whetstones are even more closely associated with the southern portion of the central mound than jewelry. Two thirds of them were found in this small portion of the site. Certainly the coincidence in distribution between these items and the concentrated pithos jars used for burial is striking, but it must be noted that at other Old Babylonian sites these items are associated with domestic buildings when found in context. Since mace-heads, stone querns and copper/ bronze weapons share this correlation, some explanation is called for. One possibility is that this part of the site was not, in fact a burial area, but rather the site of one or more public buildings, perhaps



Fig. 321. Distribution of stone donuts.

associated with the platform located towards the southeastern corner. Alternatively, the fact that burials at other Old Babylonian sites have all been found within domestic contexts, could be cited to support the thesis that a group of people distinct from the rest of Mashkan-shapir's population, perhaps more closely tied to the central institutions, resided and was buried here.

Weights

The weights found at Mashkan-shapir were generally made of stone. Most common were the stone donuts (see fig. 321) which could be interpreted as either net weights for hunting and fishing, or as loom weights. While these were common at Mashkan-shapir, they are not found in any quantity in the near north, far north or south mounds. Their absence in the latter can be easily accounted for by arguing that these activities is not likely to have taken place in the religious quarter, but their rarity in the northern portions of the site is more peculiar. We have indicated above that the north canal might have been a later addition to the irrigation system of the area, which might suggest that the northern portion of the site, that furthest from the original occupation mound, was the last to be occupied. But why such a scenario would affect the distribution of these items is not clear.



Fig. 322. Distribution of weights.

These weights appear to be exceptionally common at Mashkan-shapir in comparison to other published Old Babylonian sites, but here again the tendency not to publish the mundane may be at work. Yet, even though little attempt was made to give them regular shapes, these were not insignificant pieces of workmanship. Each stone had to be imported into southern Mesopotamia, a hole drilled through it, and in most instances the exterior was shaped and smoothed. Our first impression was that these were net weights, made of stone because they needed to stand up to prolonged immersion in water. The analysis of faunal remains from our excavations, however, does not suggest that the population of Mashkan-shapir relied heavily on fish, fowl, and wild animals. Instead, they consumed relatively large amounts of sheep, slaughtered at an exceptionally late age. These data suggest that in the Old Babylonian period, as documented for Ur III times, Mashkan-shapir was a center for the wool industry, and the data thus provide more support for the interpretation that these objects were loom weights. If so, the evidence of their distribution suggests that wool-working probably took place in the west, central, and eastern portions of the site. The weights were also found in exceptional density in the southern portion of the central mound.

We also found numerous small balance weights, the distribution of which is shown in fig. 322. At other Old Babylonian sites, they are overwhelmingly associated with domestic and burial find-



Fig. 323. Distribution of spindle whorls and loom weights.

spots, although a few examples have been recovered from temples and palaces. Their relative frequency in the northern part of the site in comparison to other small finds is perhaps significant. Because these weights would have been used primarily for economic transactions, probably those in which payment was in silver, their absence on the south and east mounds—and indeed in the southern portion of the west mound—suggests that such transactions were more common in the northern portion of the site and in the area around the two harbors. The actual number of the objects in question however, is small.

Other weights are all too rare for their distributions to be of much significance. The very large stone weight that might have been used as an anchor was found by a canal. We do not have any idea of the functions of the others.

Spindle Whorls

We suggested above that the donut-shaped stone weights might have been associated with the wool industry at Mashkan-shapir. Other objects more clearly to be related to the manufacture of textiles are spindle whorls, of which both stone and baked-clay examples were recovered. Fig. 323 shows the distribution of these items over the surface of the site, and, in spite of the meagerness of



Fig. 324. Distribution of ceramic tables and tripods.

the sample, they obviously do not share the same distribution as the stone donuts. They tended to be found around the edges of the site, and two examples were recovered from the far north. Without a larger sample or a better understanding of the function of stone donuts, it is difficult to assess the significance of the discrepancy of these distributions.

Fig. 323 also indicates where the two baked-clay weights, both relatively flat with a pair of holes at one end, were found. These too might have been used as loom weights and were found in the south mound and in the southern portion of the central mound. Again, without both a clearer understanding of their function and a larger sample, no clear conclusions can be drawn. Spindle whorls and loom weights excavated at other Old Babylonian sites are found almost exclusively in domestic areas.

Ceramic Tables and Tripods

A noticeable feature of the ceramic tables recovered from the surface of Mashkan-shapir is that they tended to be found in groups—most notably one of consisting of nearly twenty pieces in the northeast corner of Square 6G in the central mound, but a similar, if smaller, cluster can be seen on the far north mound (see fig. 324). The fact that they are clustered in this way suggests that they were employed in some intensive activity, making Gasche's interpretations of these as bases of ovens (De Meyer, Gasche, and Paepe 1971: 36–37) unlikely. None of the model tables can be directly associated with any center for ceramic production so it is also improbable that potting was that activity involved (compare figs. 294 and 324). Indeed we can find no direct association of particular objects or features with these tables.

We also found three ceramic tripods, or kiln spacers, which can be directly associated with ceramic production. But these items were made in much the same way over several millennia, and two were found in the areas of late occupation.

Chapter 10 Conclusions

The survey of Mashkan-shapir was not conceived as an end in itself. Our initial intent was to recover as much information on site organization as possible from the surface and then use it to target excavations that would sample all functional parts of this Mesopotamian city. In the event, however, the survey became a much larger part of the project. Political developments were obviously the primary factor in this change of research design; the invasion of Kuwait, the Gulf War, and the international embargo brought all significant fieldwork by foreign archaeologists in Iraq to a halt in 1990, and subsequently even the work of the Iraqi Department of Antiquities has been primarily focused on rescue work in the face of the ever-increasing problem of the looting and destruction of sites. But even before this cascade of events, we were coming to see the survey as very important in its own right. In 1986, we had no idea we would be able to identify features and recover objects in such numbers from the surface or that they would prove diagnostic for the function of the different parts of the site. Thus, although the majority of the follow-up excavations that had been planned could not be carried out, the survey itself took us a long way in identifying the spatial organization of this ancient city.

The excavations that we did undertake in 1990 unearthed artifacts that corresponded to the specific types of objects found on the surface in the same area, including, for example, a large number of model chariots. This, taken with the quantities of valuable artifacts like cylinder seals found just lying around, is testimony to Mashkan-shapir's isolation prior to our work. Apart from sporadic bedouin shovel pits, the ruins seem to have escaped human attention for a millennium and a half. One plaque published by Opificius (1961: pl. 5:251) and an unpublished model chariot shield in the Yale Babylonian collection constitute the only previously known artifacts that might be linked specifically to Mashkan-shapir. In essence, the site has been excavated by the wind. The array of data left behind is detailed, voluminous, and extraordinary.

Mashkan-shapir as a Paradigm of Mesopotamian Urbanism

Before considering how our data relate to the issue of hierarchy versus heterarchy outlined in Chapter 1, we must address the question of whether Mashkan-shapir can be seen as typical of Mesopotamian cities in general from a social, economic and historical point of view. When we initiated the project, we had not identified the ancient name of the city, so this is very much a *post hoc* discussion, based on the unexpected dividend of epigraphic evidence.

In Chapter 3, Steinkeller has provided a historical overview of what we know of Mashkanshapir. Like other Mesopotamian cities, it was a center for trade and exchange, in this case thanks to its location on a nexus between the ancient Tigris and Euphrates systems (see Chapter 2). The code of Hammurabi mentions the important temple to the god Nergal at Mashkan-shapir, one of the most powerful gods in the Mesopotamian pantheon. The historical data also make clear the important role that Mashkan-shapir played in political affairs. First the father and later the brother of the last kings of Larsa ruled in Mashkan-shapir; when Hammurabi and Rim-Sin exchanged ambassadors, those from Babylon did not go to Larsa but to Mashkan-shapir; and Mashkan-shapir had an important court to which cases were sometimes forwarded. All of these features suggest that Mashkan-shapir fulfilled the roles played by other key Mesopotamian cities, like Ur, Uruk, Nippur, Sippar, and Babylon.

This does not mean, however, that Mashkan-shapir was typical of southern Mesopotamian cities in all aspects. The documentary record indicates that its hinterland probably did not contain the towns, villages and hamlets that surrounded other Mesopotamian cities but was instead inhabited by non-sedentary Emutbal tribes. A number of strands of evidence suggest that Mashkan-shapir relied on its ability to exchange the products of animal husbandry for grain rather than maintaining self-sufficiency through the agricultural productivity of its own fields. It was a center for royal shepherds in the Ur III period, which suggests that the site first came into existence more to facilitate stock-raising than for agriculture. Richard Redding's analysis of the faunal assemblages recovered from our excavations indicates that sheep from Mashkan-shapir were managed to maximize wool production in a way that is not paralleled elsewhere in Mesopotamia. If conclusions based on the bones from our soundings are valid for the site as a whole, the remarkably low levels of cattle might reflect how little need there was for oxen to pull plows.

The end of Old Babylonian Mashkan-shapir may also be tied to this dependence on external sources of grain. The evidence strongly suggests that occupation ceased at more or less the same time as at Nippur, during the reign of Samsuiluna.¹ Most scholars see a mixture of political unrest and a major shift in the bed of the Euphrates as the cause of the abandonment of the major southern and central Babylonian sites between the reign of Samsuiluna and late Kassite times (Armstrong and Brandt 1994; Stone 1977). A shift in the channel of the Euphrates would not have deprived Mashkan-shapir of water, but if its inhabitants made minimal use of the volatile Tigris for irrigation, as seems likely, they too would have had to relocate when the arable land cultivated by their trading partners to the south and west fell into disuse.

There is one other factor that makes Mashkan-shapir unusual among southern Mesopotamian cities. Sin-iddnam's inscription, published by Steinkeller in Chapter 7, makes it clear that this was to a certain extent a planned city. Sin-iddinam took a small settlement and transformed it into a major center by building the city wall and cutting canals within the city. Since the ancient Tigris bed clearly lay some distance to the north of the site, there is nothing to suggest that he was under any physical restriction as to where he placed the city wall. Under these circumstances, the location of major institutions within the city should be seen more as the result of planning than of the slow build up of structures that typifies most other Mesopotamian cities.

In the balance, we feel that the data support the thesis that Mashkan-shapir is not atypical of Mesopotamian cities. It was of substantial size and lacks no major institution or category of artifact found at other sites of the time. If it differed from other Mesopotamian cities in that its hinterland was occupied more by tribally organized nomadic herdsmen than settled farmers, its material culture appears to absolutely typical. To the extent that it was planned, it comes closer to the Mesopotamian

^{1.} It is not possible to provide a precise date to the last second-millennium occupation of Mashkan-shapir because we do not know how much of the upper surface of the site has blown away. However, the style of the seals and sealings found in our larger excavations suggested to the late Edith Porada a date within the reign of Hammurabi, and the shear density of sherds within the site would have rapidly established a hard cap that would have resisted erosion. Thus, it seems highly improbable that Mashkan-shapir continued to be occupied much after the reign of Samsuiluna, apart from the much later reoccupation during Parthian–Sassanian times.

ideal of what a city should look like. Certainly at the present stage of archaeological research in southern Mesopotamia, there is no body of evidence of comparable scale that can be presented as a better paradigm for understanding the organizational underpinnings of Mesopotamian urbanism.

Spatial Organization (fig. 325)

Canals are notable landmarks at Mashkan-shapir. Other Mesopotamian sites, such as Nippur, Kish, and Babylon, are divided by large watercourses-ancient branches of the Euphrates—but at Mashkan-shapir we are dealing with much smaller canals, rarely more than ten to fifteen meters wide. It seems highly probable that similar canals divided other ancient Mesopotamian cities; indeed, Woolley and Mallowan (1976) argued for similar intramural canals at Ur. Mesopotamian tells differ from their counterparts elsewhere in that they are multi-mounded. We would suggest that between these mounds canals, now heavily obscured by the processes of erosion and siltation, once flowed.

In any case, urban space at Mashkan-shapir was strongly partitioned by water. Even if the crossing point that we have identified on either side of Canal M represents a bridge of some kind, and not quays for ferries, communication between the differing sectors of the city must have been impeded by the canals. The significance of these divisions is strengthened by the differences in artifacts found in the areas that they mark off.

There is clear evidence that the southern part of the city, Sector VI, served as the religious center. It is the only part of the site with elevated terrain that can be securely dated to the early second millennium B.C., its topography accentuated by the presence of platforms of the kind associated with temples elsewhere in Mesopotamia. On the most substantial of these were numerous fragments of the life-size and near-life-size terracotta statuary of a kind only found associated with temples at other sites. In addition, other finds in the area—stone bowls, terracottas, etc.—are also finds often associated with religious structures.

We are tentatively identifying Sector III as a center of administrative activities. This is the area with the largest amount of surface architecture, all of which suggests well-planned structures. In addition, these buildings seem to have been set off from the westernmost part of Sector III by a large wall. This area also has an extraordinary concentration of model chariot fragments. While we do not know what model chariots were used for in ancient Mesopotamia, their iconography is generally linked to the titulary deity of the city in which they are found (Stone 1993)—or in the case of Mashkan-shapir to both the titulary deity of the city, Nergal, and that of Larsa, Shamash. Surface findings alone would not have permitted us to argue that this was an administrative area, but we also retrieved a large number of unbaked clay sealings (Stone 1990; Stone and Zimansky 1994) in excavation here, which make the conclusion inescapable. It is certainly possible that other administrative structures, perhaps of even greater importance than those in Sector III, existed elsewhere in the city, but if so, they have left no clear traces.

A large wall divided the southern third from the rest of the central mound (Sector IV). The presence of numerous large and small pithos fragments, many of them turned up by clandestine bedouin excavations, is taken as evidence that this southern segment was used for burial in Old Babylonian times. On a brief visit in the summer of 1988, shortly after the bedouin had left, pieces of human bone could be seen on the surface associated with two of these holes. Over one-third of all pithoi from Mashkan-shapir were found in this small portion of the site, with a density of more than seven per hectare as compared with one or less in other parts of the site. Many of the objects found in the surface survey of this area—e.g., jewelry, cylinder seals, and weapons—are typical grave goods.



Fig. 325. Final plan of Mashkan-shapir.

The ceramics from our sounding in this area (4H95III, see Appendix 1) indicate that the surface occupation layer here dates to early Isin-Larsa times, a finding that is matched with our observation during the course of the survey of significant amounts of comb-decorated sherds. These data, to-gether with the geomorphological work of Lisa Wells suggest that at least this part of the site was the location of the original settlement mound, perhaps including that occupied in the fourth millennium, but certainly that occupied from Akkadian to Ur III times. It would appear that when Mashkan-shapir expanded into a full-fledged city, the original settlement mound—or at least that part of it located in Sector IV—ceased to be occupied by the living and was used for burial. In the east of this area is what appears from the air to be a platform, although this was seen as nothing more than a high portion of the site by the surveyors on the ground. Associated with it is the only terracotta statue fragment found outside Sector VI, albeit one of unclear iconography.

No cemetery has yet been excavated at any other Old Babylonian site, although both direct and indirect evidence exists for their existence. At Larsa, surface survey identified an area where the remains of pithoi are sufficiently dense to suggest the presence of a cemetery (Huot et al. 1989: 50) which would be similar to the situation at Mashkan-shapir. While some sites, such as Ur, have provided copious evidence for intramural burial (Woolley and Mallowan 1976; Luby 1990), this is not the case at others, such as areas TA and TB at Nippur, for example, where burials are only rarely found in early second-millennium houses and too infrequent to account for the population that must once have lived there (McCown and Haines 1967; Stone 1987). We have no evidence for cremation in Mesopotamia and the inhabitants must have been buried somewhere, so this is not incompatible with the posited existence of hitherto undiscovered cemeteries. It is possible that some of the unusual features of the surface indicators at Mashkan-shapir—concentrations of weapons, palettes, mace-heads, etc.—may reflect the differing conditions between the intramural burial typical of excavated areas elsewhere, and burial within a cemetery.

The northern portion of Sector IV clearly was an area for the living. There, aerial photographs taken after a rain indicate the presence of architecture that we interpret as representing domiciles, due to its irregularity and the small size of the rooms. This is also the area where we have the best evidence for streets. A long linear area of concentrated sherds, similar to the street excavated in Sector III (Stone and Zimansky 1994), can be traced running in an east–west direction across the mound, with a second, smaller area branching off to run parallel to Canal M. At the western end of the large street, a pair of baked-brick features can be identified on both sides of Canal M; these features must be the remains of either quays or bridge supports. It seems likely that a similar crossing point must have once existed on Canal N, but it was destroyed when the watercourse was recut in the first millennium A.D. The line of this hypothesized street would lead to the large gate in the eastern portion of the city wall.

This street, therefore, seems to have been the major east-west artery in the city. A number of concentrations of copper fragments and cuprous slag are notable features associated with it. If our interpretations of these as the loci of copper workshops is correct, the street would appear to have a commercial function. Because copper production is more likely than most artisanal activities (besides firing ceramics) to leave surface traces, it is possible that the spaces between these copper installations were occupied by carpenters, leatherworkers, and the like, but only excavation can answer this question.

Sector V, the area to the southeast, is noteworthy for the evidence for manufacturing that it has generated. Along the small Canal P are the remains of pottery kilns. More concentrations of ceramic slag are found further to the east, and these concentrations might represent the place where synthetic basalt was made; numerous stones and stone grinders testify to the presence of lapidary work-
shops in the area. Although it is possible that at least some of the other types of objects found here represent the products of these workshops, other than the manufacturing debris, the architectural traces and overall surface scatter differs little from that from other areas interpreted as domestic in function.

It is in this sector that we have the best preserved traces of the city wall, perhaps because there was a gap between it and the densely settled area. Within this gap, a number of large, well-built and well-planned buildings can be identified. Their size and isolation would suggest that they may have had something to do with administration or storage, but no artifactual evidence survives to shed light on their function. The size of the city gate, the clear space in its vicinity, and the large street directed toward it lead us to suspect that the kinds of exchange activities associated with gates in Old Babylonian texts (Oppenheim 1969: 12) may have taken place here.

The northern portion of the site, Sectors I and II, is enigmatic. In general, finds from this area tend not to be particularly distinctive, perhaps because this was a major area of domestic housing. The presence of Canals H and I and the low level of surface scatter in the area around them prompt us to consider that there may have been an intramural garden area in the southeastern portion of Sector II. Elsewhere in Sectors I and II, we find sporadic evidence for manufacturing in the form of the remains of kilns and kiln wasters and concentrations of copper and copper slag, but in nowhere near the concentrations seen in other parts of the city. The two intramural harbors were associated with the southern boundary of Sector II, Canal G.

The differences between the various mounds within the city should not obscure the fact that other uniformities tie them all together. All areas, except perhaps Sector VI, have evidence for the kinds of materials associated with daily life: tools, ceramics, decorative items, jewelry and the like. The distribution of luxury items, such as stone bowls and cylinder seals, indicates a broad dispersal of wealth throughout the urban environment, as we shall argue in more detail below.

Hierarchy and Heterarchy in Mesopotamian Cities

In Chapter 1, we identified three criteria by which more heterarchical societies might be distinguished from more hierarchical ones in the archaeological record of their cities: whether the residences of social classes are integrated or segregated; whether institutions are centrally concentrated or dispersed in the city; and the degree to which all elements within society have access to the products of artisans. Let us now review how the data from Mashkan-shapir relate to these criteria.

Residential Districts

Since we were not able to conduct the extensive excavations within different residential districts that we had originally planned, we have only indirect data on this question. Every residential district excavated to date at other early second-millennium sites shows a consistent mixture of large, well-appointed houses and small ones (Stone 1997b). Most noteworthy are the residential districts of Nippur (McCown and Haines 1967; Stone 1987) and Ur (Woolley and Mallowan 1976; Charpin 1986; Van de Mieroop 1992; Luby 1990). At both sites, more than one residential district has been excavated and, although they showed differences in character, none could be characterized as wealthier than the other, and in each there was a mixture of different wealth levels between individual houses.

The data from these sites, however, do not sample the entire site and leave open the possibility of unidentified pockets of wealth or poverty. The Mashkan-shapir survey findings, with their broad range of objects, provide a way of checking on this possibility. We took cylinder seals and stone bowls as indicators of high status, the former because of their function as Mesopotamian badges of authority and latter as strictly non-utilitarian items, made of expensive material and derived ultimately from long-distance trade. Both were found to be quite evenly distributed across the site, with the exception of the religious quarter and those areas where late occupation obscured the Old Babylonian surface. Thus, although not conclusive, the data from Mashkan-shapir support the idea that elites were not concentrated within Mesopotamian cities but were distributed broadly across all residential districts.

Institutions

The evidence from the Mashkan-shapir survey speaks more clearly in regard to the locations of the centers of religion, administration, manufacturing, exchange of goods, and storage. If canals are taken as major dividing factors within the city, the picture is clearly one of institutional dispersal. The main religious center was located in the south, with an administrative area in the west, the two separated from each other by canals. Manufacturing was concentrated in the southeastern portion of the site, although there is some evidence for manufacturing elsewhere. Exchange must have taken place at the harbors located in the north-central area and at the city gates, the clearest example of which is in the east. We have significantly less clear information on storage, although it is possible that it was located in the large, isolated building between the densely settled area and the city wall in the eastern portion of the city.

In general, the different institutional centers at Mashkan-shapir evidence significant dispersal, although all are concentrated toward the south, which seems to have been where the original settlement was. The inhabitants seem to have used both the canals and large intramural walls to increase this segregation.

Access to Goods

The degree to which all members of society had equal access to manufactured goods is not easily ascertained through analysis of the kind of survey data collected from Mashkan-shapir, but the distribution of metals certainly points to a wide distribution. Only 33 tools of flint or obsidian were found in the course of the survey, as contrasted with the 121 objects of copper/bronze, not including the possible coins and the statue that we attribute to the later occupation of the site, and also not including the large number of unidentifiable copper/bronze fragments. Given that fourthmillennium occupation was probably responsible for some of the stone tools and the fact that copper/bronze is recyclable whereas stone objects are almost indestructible, the ratio of copper/bronze to lithics would have been even more in favor of the former. This strongly suggests that by the Isin-Larsa and Old Babylonian periods, most citizens of Mashkan-shapir had access to tools of copper/ bronze.

Conclusions

Despite their ambiguities and shortcomings, the survey data collected from Mashkan-shapir contribute substantially to the accomplishment of our basic objectives. It can be argued that we have a better picture of the overall organization of urban space at Mashkan-shapir than of any other city in southern Mesopotamia, albeit with less resolution than what has been provided by small sites such as Haradum and Tell Harmel, where large expanses have been excavated. The evidence for the physical separation of institutions, lack of distinction between the residential areas of rich and poor, and widespread access to the products of urban craftsmen are strong indicators that the heterarchical view of ancient Mesopotamia is a more likely reflection of reality than the rigidly hierarchical one. These conclusions, however, must remain provisional pending excavation of larger areas of the site.

It is our profound hope that improved circumstances will some day permit us, or other archaeologists, to make use of the data recorded here as it was originally intended, as a blueprint for further investigation into the organization of this ancient city.

Appendix 1 Soundings

Four soundings were excavated at Mashkan-shapir, one in the 1987 season, two in the 1988– 89 season and one in the 1990 season. All but the last were located within baked-brick structures whose walls were visible on the surface and conformed to the layout of the architecture. Since these are not tied to the site grid, they were named Soundings 1, 2, and 3. The fourth sounding, conducted in 1990, was named for its grid position, 4H95III. All four soundings were dug in the southwestern portion of the site (fig. 325): Soundings 1 and 2 in the West Mound, Sounding 3 in the South Mound, and 4H95III in the southern portion of the central mound. Preliminary discussion of the results from these soundings can be found in our publications in the *Journal of Field Archaeology* (Stone 1990; Stone and Zimansky 1994).

The purpose of these soundings was to determine the degree to which inferences based on surface indications would be confirmed by sub-surface excavations. Soundings 1–3 were designed to determine the extent to which surface architectural traces were likely to represent actual excavatable buildings or only foundations and, if the latter, to what extent they followed earlier building plans. Square 4H95III was located in the southern portion of the central mound where surface finds of broken burial jars and large numbers of the kinds of objects often found in graves suggested the presence of a cemetery.

Since these were small, exploratory probings, recovery of information of economic significance was limited. Flotation was only carried out for samples from 4H95III—and there only because we were set up for intensive flotation of samples from our larger 1990 excavation area. Faunal material was collected from all four soundings, but the limited duration of the 1988–89 season precluded requesting permission to export these materials for more detailed analysis. Ceramics were collected from all four soundings and have been typed following the typology established in 1990.

Sounding 1 (figs. 327–328)

Sounding 1 was located within the most complete baked-brick structure visible on the surface of Mashkan-shapir. In 1987, a two-day clearing operation permitted the complete reconstruction of the plan of this building. It had two ranges of rooms on the southwest and northwest of a central courtyard and a single range on the other two sides. Entrance to the building was from the southwest. As was the case with much other baked-brick architecture at Mashkan-shapir, the walls of this building were of half bricks, $28 \times 16 \times 8$ cm in size. Each face of the walls had header-stretcher construction, while the middle of the walls were filled with mud. By contrast, the door jambs were made with alternate rows of solid headers or stretchers.

Because time was short and the purpose of the sounding was to determine the extent to which the observed surface indications represented an excavatable structure, we chose one of the small rooms which surrounded the courtyard for our excavation, rather than one of the larger back



Fig. 326. Location of Soundings 1 to 3 and 4H95III.

rooms. In order to maintain a section, the half of the room that included the door was excavated, with the remainder left for future seasons. In addition to the room itself, we extended our excavation through the door, so a second section provided information on the fill of the courtyard (fig. 329).

In the course of the surface clearance we were impressed by the large amount of burned debris, which seemed to fill the structure, even though it was only indicated on the surface by the frequency of burned bone in the area. Indeed, at the end of the 1987 season, cogniscent of other



Fig. 327. Plan of Building 1 and Sounding 1.

concentrations of burned bone at Mashkan-shapir, we surmised that the city may have ended its days in a conflagration. Although all other excavations—all dug in areas without such burned bone concentrations—have demonstrated that any such fire was certainly not ubiquitous, the excavation of Sounding 1 largely confirmed the impression gained through surface clearing that the structure had been destroyed by fire.

The strands of evidence are severalfold. In the first place, the fill of the room consisted of mixed burned debris, including burned soil (perhaps the remains of either the mud roof or the upper courses of the walls), ash and unburned soil, all bedded in slanting deposits. Second, near the door, we found some burned reed bundles that might either have been part of the reed screen of some kind or may have been used in the lintel to the door. Again, these were bedded at a steep angle.

The uppermost floor showed some evidence of burning, especially in the northeast. In addition, the ceramics recovered from immediately above the floor could generally be reconstructed either into complete vessels or into largely complete vessels. It should be noted that since only one half of the room was excavated, it is probable—even likely—that the rest of these vessels was to be found in the other half of the room.



Appendix 1

Fig. 328. Sounding 1: southwest section.



Fig. 329. Sounding 1: before excavation, with animal holes cleared out.

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Fig. 330. Sounding 1: showing floor and threshold.

Two occupation floors and one subfloor were identified in the room, all of which sloped up towards the walls and down towards the doorway and the center of the room, although the subfloor was almost level. The highest was located some 40 cm. beneath the surface (fig. 329), with four bricks of the wall preserved above it and the subfloor some 65 cm. beneath the surface, with seven courses of baked-brick wall preserved. The highest floor showed considerable signs of burning, as well as pieces of largely reconstructible vessels. The lower floor, by contrast, was characterized by the kinds of ashy debris that are typical of floor accumulations in Mesopotamia, including significant ceramic deposits in addition to well preserved faunal material. The walls of this room were apparently not plastered, because we found no traces of such plastering, either in excavation or preserved in the section.

In addition to the ceramics recovered from the floors and from the room fill, three other artifacts were recovered. One was a small, nondescript fragment of copper, which was discarded; more interesting was the well preserved chisel embedded in the floor (AbD 87-73). More significant was the remains of an unbaked clay door sealing (AbD 87-93), with an impression of a figure—perhaps in royal position—with an inscription (fig. 332). Unfortunately, we were not set up to bake such artifacts in 1987, so it was impossible to clean the sealing sufficiently for either the inscription or details of the design to be made out.

The sealing was found lying in the cracks between a rough baked-brick door sill that was encountered on the inner half of the doorway. The sill seems to have been well built originally, but



Fig. 331. Sounding 1: showing sub-floor and door pivot.

heavily worn, with the central brick on the inside of the sill missing. While it is possible that some bricks had been removed following the abandonment of the building, it seems more likely that they were simply worn down through use.

Our excavations continued beneath the floor level for a further 20 cm. Two more courses of baked brick were uncovered in all areas. The bricks against which the upper floor was laid were badly eroded, while the lowest coursethat associated with the subfloor-was set in about 4 cm. A further brick was added on each corner, making the total number of preserved courses of baked brick 8 in most places and 9 in the corners.

At foundation level, we found a baked-brick door socket located on the inside of the left jamb of the doorway (fig. 333). This indicates that the door opened inward from the inside of the room. Under these circumstances, the door sealing found in the door sill

would have lain where it had fallen at a time when the room was opened. Traces of mud-brick construction were found beneath the baked brick walls, presumably the remains of an earlier structure.

Clearly, it is dangerous to draw conclusions from so limited an excavation, but some tentative suggestions will be presented nevertheless. In the first place, this sounding demonstrated that in at least some cases traces of baked-brick architecture visible on the surface represent actual excavatable buildings. Moreover, having recovered most of the plan of this particular building through surface scraping, it appeared that we were either dealing with an extremely substantial domestic structure or a building of a more public nature. The discovery of the door sealing tends to point toward the latter. Finally, it is possible that the scatter of burned bone noted on the surface in this area might be correlated with the evidence that suggests that this building was destroyed by fire. Although, as



Fig. 332. AbD 87-193. Unbaked clay sealing found in threshold of Sounding 1.

we shall see below, our initial optimistic appraisal that the entire site had burned is clearly not correct, substantial scatters of burned bone were noted over parts of the central mound, possibly indicating that there, too, we may hope to find structures well preserved due to their destruction by fire.

Sounding 2 (figs. 333, 334)

Like Sounding 1, Sounding 2 was located in a small room of a well-preserved area of bakedbrick architecture located in the West Mound. In this instance, no effort was devoted to tracing the plan of the structure fully; instead, the surface traces were mapped as part of our surface survey work. Again like Sounding 1, Sounding 2 was delimited by the boundaries of the associated architecture on three sides, with a baulk on the third, and again the edge of the excavation was continued through the doorway.

Here the similarities between the two soundings diminish. Unlike Sounding 1, the baked-brick architecture that defined Sounding 2 was no more than two bricks thick. It had a clear doorway to the southeast and possibly a second doorway—with a rough baked-brick blocking in it—in the



Fig. 333. Sounding 2: plan.



Fig. 334. Sounding 2: southwest section.



Fig. 335. Sounding 2: floor.



Fig. 336. Sounding 2: showing lower level of architecture.

northeast. A poorly preserved floor level, which seemed to be contemporary with the baked brick architecture (fig. 334), was encountered only a few centimeters below the surface. The remains of a pottery vessel were found in the north corner of the room, but most of the top of the vessel had been eroded away. Some small bones of fish or small birds were found in this vessel. Unfortunately, the short duration of the 1988–89 season did not provide sufficient time for the formalities necessary for the export of materials for more detailed analysis. Faunal material was quite common immediately above the floor level, and half of a carbonized date pit was recovered without flotation.

Beneath this floor, the baked-brick walls came to an end. Door sockets associated with that building level were found, one, as might be expected, in the very northeast corner of the room, immediately next to the doorway, and the other within the doorway itself. The former could have served to close either the door in the southeast or the blocked doorway in the northeast. The latter, on the other hand, though it may have been used to close off the room from the outside, could also have been reused as part of a door sill; if so, the rest of the door sill is no longer preserved.

New walls began to appear almost immediately beneath the baked bricks, all of which were set in somewhat from the lines of the baked-brick walls (fig. 336). The southwest wall underlay the baked-brick wall and doorway without a gap, but the walls to the northeast and northwest had a thin layer of bricky collapse between well preserved mud-brick construction and the subsequent baked-brick walls. The new wall face of the northwest wall was about 40 cm. further into the locus, while those to the northeast and southeast were inset about 20 cm. No doorways were identified within the small area of the excavation (now reduced to 1.50×1.60 meters).



Fig. 337. Sounding 3: plan.

The upper portion of the lower building level was filled with bricky collapse, with few sherds. Only one item of note was recovered here: part of the lower legs of a nude female plaque (AbD 88-295). Beneath this level were a series of ashy lenses that seemed to originate from the southern corner of the excavation, suggesting perhaps that there might have been a hearth in the unexcavated area to the south.

While this sounding was perhaps the least productive of the four, there are some lessons that can be drawn. In the first place, even in circumstances such as this where the clear baked-brick traces seen on the surface represent no more than the lowest damp course of a wall, they are likely to provide a good indication of where earlier architecture is likely to be located, thanks to the Mesopotamian habit of using old wall stubs for foundations. Second, based on the recovery of a carbonized date pit less than 25 cm. from the surface, we concluded that the salt problems at Mashkan-shapir are not so severe as to preclude the recovery of plant remains. In part as a result of this find, we initiated an aggressive program of flotation in 1990.

Sounding 3 (figs. 337, 338)

Sounding 3 was a 3×3 meter square excavated in the southern portion of the site, with traces of baked-brick walls on two sides. Here the purpose again was to test the degree to which surface



Fig. 338. Sounding 3: northwest section.

baked-brick architecture represented excavatable deposits, as well as to see whether we could recover any data that would tend to support our hypothesis, based on surface indications, that this part of the site was the religious quarter.

In the event, time limitations precluded our probing to determine whether earlier walls underlay the one- to two-brick-thick baked-brick walls that we had observed at the outset. The excavation was closed with a maximum depth of no more than 20 cm. Nevertheless, in spite of the slight preservation of the baked-brick walls and the shallow depth of the excavation, we were able to recover data that might be of some significance for the purpose of this part of the city.

The tendency of floor levels to slope up toward the walls and down toward the center of rooms (noted in Sounding 1) meant that although the walls were barely preserved as more than surface indications, there were excavatable floors associated with them. In the center of the room there was also a thin deposit of bricky collapse.



Fig. 339. Sounding 3: upper hearth.



Fig. 340. Sounding 3: lower hearth.

The floors of this room were made up of a series of ash lenses originating in two baked-brick fire installations. The uppermost of these features was simply three bricks laid on their sides to form a U-shaped enclosure with the opening in the northeast (fig. 339). This was located within the room, more than a meter from the nearest wall. Lower down was a more elaborate hearth with a paving of baked bricks (brick sizes were the standard $27 \times 17 \times 8$ cm Old Babylonian half bricks) and a raised edge on three sides (fig. 340). This hearth was built up against the southeast wall, with its opening to the southwest. Both hearths contained considerable burned deposits within them.

Three model chariot fragments were recovered from this sounding; a chariot wheel (AbD 88-200) was found within the lower of the two hearths, together with a grinding stone made of ceramic slag, while two chariot bases (AbD 88-275, AbD 88-307) were found in the ashy deposits associated with the same hearth. The bases of two vessels were also found, one definitely *in situ* in the far west corner of the sounding, against the southeast wall. The other was found more in the center of the room, within the thin layer of bricky collapse that was preserved. Although it too appeared to be *in situ*, its findspot suggests that it was unlikely to have been the furnishing of the room as excavated. It could have been a large base sherd that appeared to be part of the truncated pot due to its location close to the modern surface, or it may represent all that remains of a later level of occupation.

In conclusion, Sounding 3 indicated that even when surface indications of baked-brick architecture are only ephemeral, associated floor levels may be preserved due to the tendency of floors to dip toward the center of the rooms. In addition, the hearths and chariot fragments, while certainly not conclusive of religious activity, might point in that direction.

Sounding 4H95III (figs. 341–343)

In 1990, in addition to our larger excavation area (Stone and Zimansky 1994), we opened one sounding, a 5 × 5 meter square located in the southern portion of Sector IV, in grid square 4H, 10 meter square 95 (numbering from north to south, west to east) subsquare III (that in the southwest). The southern portion of the central mound had long been supposed to have been a cemetery because of the large number of burial jar fragments, the concentration of the kinds of goods often found in graves, and last, but not least, the fact that this area was the focus of attention of the local bedouin. Moreover, in the summer of 1988, during the course of a brief visit to the site shortly after the departure of the bedouin, it was possible to observe the results of their activities before time had smoothed over the remains. Not only were there two holes excavated, both of which had unearthed human bone and also included some pots (not large pithos jars) which were left *in situ*, but there were also a number of shallow holes, the result of single shovel thrusts, apparently their search procedure. As has been seen in the body of this volume, the more detailed analysis of our data continued to support the identification of this area as a cemetery; indeed, this conclusion was strengthened by the large intramural wall, seen in the aerial photographs, apparently separating off this part of the city.

With this background (although the presence of the above-mentioned wall was not known to us at the time) it will come as no surprise that sounding 4H95III was designed to test the proposition that this part of Mashkan-shapir had been used as a cemetery. The problem was to decide exactly where to locate such a sounding. We did not want to place it in an area where there were extensive surface indications of modern digging, so instead we sought an area where this was not present. Perhaps as a result of this strategy, it must be said at the outset that no burials were found in the course of this excavation.



4H95III was laid out within the 5×5 meter boundaries described above, with the actual excavation area measuring 4×4 meters, leaving a half meter for baulks on each side. The first features encountered were a number of small, shallow, sand-filled pits. None was very extensive, and it seems probable that these represent no more than the single shovel tests used by the bedouins to locate graves in this area. Immediately below the surface debris and these pits we encountered well-preserved architecture.



Appendix 1

Parts of three rooms (or courts) were uncovered, numbered loci 6, 7, and 8, with a pair of walls separating them, meeting in a T-shaped junction. The best-preserved room was locus 6 (fig. 344). This room was bounded on two sides by walls, although the wall to the south was either broken or, more likely, had a doorway in it. In the east corner of the room were the remains of a mudbrick construction with underlying baked bricks. This may have served as the southwest edge of a hearth, since beyond it the wall showed signs of burning and the floor levels had significant thicknesses of ash, including one area (near the baulk) which seemed to be an ash heap. This part of this

nesses of ash, including one area (near the baulk) which seemed to be an ash heap. This part of this room or court excavated therefore seems to have been dominated by a fire installation and its associated debris. Two objects were found in this locus, a baked-clay sickle and a mace-head fragment. Both of

these objects were found in this focus, a baked-clay sickle and a mace-head fragment. Both of these objects were found in some quantity on the surface of this part of the site, once again an indication that the surface finds are a good predictor of the kinds of objects likely to be recovered during excavation, but beyond this, they are difficult to interpret. As indicated in Chapter 6, baked-clay sickles are generally considered to have been used only in the earlier periods of Mesopotamian history, before they were replaced with copper/bronze. We have generally assumed that the clay sickles found at Mashkan-shapir are some of the remains of the Uruk occupation that underlay the occupation dating to the second millennium. It seems likely that this object was not left in locus 6 because it had been used there but rather that it had found its way there from the earlier levels.

The mace-head (AbD 90-227) presents a more difficult problem. As indicated in Chapter 6, mace-heads are closely associated with large public buildings at other Mesopotamian sites, but it would be premature to argue that this one marks the remains of a public building on the strength of this limited sounding. If the clay sickle had an earlier origin, it is also possible that the mace-head found its way into this area through the same mechanism.

Loci 7 and 8 were both disturbed by a cess pit, originating at the surface, which cut through the wall separating them (fig. 345). In addition to the green- and rust-stained soils typical of such deposits and a quite large amount of pottery, a large piece of a ceramic drain, which was probably part of the toilet's superstructure, was recovered.



Fig. 344. Sounding 4: burning in the west.

Outside the cess pit, these two loci were fairly undistinguished. While locus 7 was not excavated to any depth, three levels were dug in locus 8, which was excavated down to a reasonably good floor. Above the floor was a thick level of bricky collapse and fill. Associated with the floor were found, in addition to the usual ceramics and animal bone, a large piece of bitumen, as well as several smaller pieces, some of which had reed impressions. Also found here was a clay tripod (AbD 90-208) of the kind generally interpreted as kiln spacers. In general, it does not seem likely that this object should be taken as an indication that this was a center of ceramic production, since there was no concentration of either kiln wasters or ceramic slag in the excavation and the only concentrations of ceramic slag found on the surface of this part of the site are the remains of much later Parthian kilns. The last finds were eight sheep/goat astragali, some of which—one in particular—show signs of wear. Although they were not found in a tightly grouped clump, it seems likely that most or all of them had been used as gaming pieces. It is possible, however, that one or two might have been part of the overall animal bone assemblage from this area.

The above description of our excavations of 4H95III suggests that our initial hypothesis that this part of the site represents an Old Babylonian cemetery should be abandoned, but a closer examination of the data, and especially the ceramic evidence (see below) reveals a different picture. In the first place, once the data had been fully analyzed (see Chapter 8), it appeared that the clearest evidence for burial activity was immediately along the wall that was seen in the aerial photographs and that the immediate area in which 4h95III was excavated showed less in the way of such remains.



Fig. 345. Sounding 4: drain at the top of the latrine pit.

Indeed, this might be the explanation behind the lack of modern disturbance in this area. Moreover, the ceramics from 4H95III are to be dated to a period considerably earlier than those recovered from our main excavation area, less than 100 meters away. While it is very difficult to provide an absolute date based on ceramics alone, the presence of unusually high numbers of our types 270, 410, 435, and 520 (see Table 8, fig. 346) suggests a date in the early portion of the Isin-Larsa period, almost certainly predating the construction of the city wall by Sin-iddinam. Moreover, these ceramics were at least as common in the cess pit that originated from the surface as they were in the levels associated with the architecture. Although it could be argued that, since this is one of the higher portions of the site, more is likely to have been eroded away it seems unlikely that a century or more of occupation would have been eroded here where it was not removed less than 100 meters away. Finally, these early ceramics from our excavation are consistent with the survey notes. There not only was one whole vessel of type 435 found on the surface (AbD 88-167) but the notes indicate a higher than usual frequency of sherds with combed decoration, again a hallmark of the earlier portion of the Isin-Larsa period.

Thus the present hypothesis for this area is that it represents the early settlement mound, which was occupied in Akkadian through early Isin-Larsa times, but that it probably was not used for settlement once Mashkan-shapir attained true urban status; instead, we still think that it may have been used as a cemetery. Clearly, more excavations are needed in this area before this hypothesis can be fully demonstrated.

Ceramics

Ceramics were collected from all four of our soundings, although in no case do we have a particularly large sample. In all instances the non-diagnostics were sorted by ware, counted and weighed. The diagnostic sherds from soundings 1–3 were drawn, while those from 4H95III were classified following the system developed in the 1990 season. Here the sherds were characterized by shape following a sherd typology based on excavated ceramics from other Old Babylonian sites and amplified by those from Mashkan-shapir. Information on diameter, thickness, color, ware, surface treatment and decoration were also recorded and added to a database. The drawn sherds from the first three soundings were subsequently coded following the 1990 system and added to the database.

There are two problems in assessing the ceramic inventories from these three soundings. The first is that no statistical analysis of sherd data from a southern Mesopotamian site has been published to date. We have such statistical data from the large (nearly 20,000 diagnostics) sample collected from our more extensive excavations conducted at Mashkan-shapir in 1990. Here there was a remarkable consistency in the distribution of types from one building to another and from one room type to another (Stone and Zimansky 1994). The only exceptions were in the ceramic assemblages retrieved from our deepest excavations, those that penetrated beneath the latest level of occupation. However, since that sample comes from a single excavation area, it is impossible to tell whether the distribution of types seen there should be taken as representative of all ceramic assemblages dating to the same time or if it reflects particular functional aspects of this part of the site. Indeed, to the extent that one can tell by comparison with data from elsewhere, it appears that the percentage of goblets recovered to date from the more extensive excavations carried out at Mashkan-shapir is exceptionally high, with a consequent reduction in other types, most notably bowl types. Under these circumstances, when ceramics from our soundings differ from those from the excavations, it is often difficult to assess whether this is due to functional or temporal differences. Moreover, given the small size of the soundings, none of these assemblages is very large, with the result that small sample size is likely to have skewed the results.

To combat the latter, we have tried to assess the probability of sample size affecting our results by looking at the variability in smaller samples derived from the larger 1990 excavation area, whose numbers more closely resemble those from the soundings. Here each of the 57 loci within the excavation area that had more than 50 diagnostics were assessed, with the mean and standard deviation of these values calculated for each type. This enabled us to determine whether the frequency of particular types from our soundings fell within 95% of the variability from the larger excavations. Due to the complexity of the data, the use of the standard error instead of the standard deviation was not felt to be appropriate. Moreover, there are other problems with this approach. Since, with the less common types, most loci had no examples of that type whatsoever, the frequency of these types did not form a normal distribution. Under these circumstances, the presence of a single sherd from one of our soundings could suggest a significant departure from the norm as based on the largerscale excavations. Therefore, only if such departures were either the result of more than one sherd, or the result of too few of a particular type, were such deviations considered at all significant (in the normal but not statistical sense of this term). The results of this endeavor are shown on Table 8 and fig. 345, with significant differences highlighted in bold type.

None of the samples of ceramics from the soundings had a profile that matched those from our larger excavation area, which suggests that functional differences are reflected in the ceramic assemblages from Mashkan-shapir, with the caveat that minor functional differences, such as those between sherds found in different types of contexts in the larger excavation seem not to have been reflected in the ceramics. If we omit consideration of the ceramics from 4H95III for now, since, as indicated above, these data suggest significant temporal distance, the ceramics from Soundings 1-3 still contrast, in some instances markedly, from the norms of the ceramics derived from our larger excavation. Certainly, the relatively frequency of bowl to goblet types in Soundings 1 and 2 when compared with the ceramics from the main excavation is striking, although those from Sounding 3 are largely similar (see Table 8).

But these differences in vessel types by no means explain all of the differences. Table 8 indicates that, whereas Sounding 1 was generally low in goblets, Soundings 2 and 3 differed from the main excavation area most clearly in the types of goblets found there—they had higher frequencies of the more elaborate, carinated goblets than the main excavation area. Not surprisingly, given the data on goblets versus bowls, we find that the ceramics from the soundings frequently have higher percentages of the more common bowl types than was found in the excavations, especially type 205 in all three soundings and types 220 and 250 in Sounding 1. Since these ceramics are all firmly dated to the very end of the Isin-Larsa to early Old Babylonian times—i.e., the same time as our larger excavations (see McCown and Haines 1987: 74–77, plates 80–97)—these data presumably reflect functional differences between the different excavation units.

Under this interpretation, the ceramics from Sounding 1 are the most distinctive, but this may be the result, at least in part, of differences in the site formation processes in the different areas. As noted above, there is considerable data indicating that the excavated level of Sounding 1 was destroyed by fire, leaving reconstructable vessels or vessel fragments on the floor. This debris should be expected to be quite different from those accumulated in the course of long-term occupation of an area, let alone those sherds mixed in with mud-brick collapse. However, a closer look at the data reveals that all three of the bowl types most clearly associated with Sounding 1 were not only found in high frequency on the first floor level but often in even higher frequency lower down, especially in the foundation level beneath the floor, suggesting that the function of this particular room or building had been consistent through a period of reconstruction. By and large, the ceramics from Soundings 2 and 3 differed less from those of the larger excavation area than did those from Sounding 1, and all three soundings, with minor exceptions (see below) seemed to be roughly contemporary with the remains from the main excavation area, which was dated based on a combination of ceramics and seal and sealing designs to the early years of Old Babylonian rule.

The ceramics from 4H95III, as indicated above, were quite different from all other assemblages. Not only were goblets, so common in the main excavation area, almost absent, but a number of types—specifically the bowl type 270, the pot type 435, and the jar types 410 and 520—were quite common, and these types can be dated, based on comparison with other sites, to the earliest years of the Isin-Larsa period or even Ur III times. Moreover, even the wares were different with a large amount of well-fired red and orange wares, in contrast to the poorly fired orange wares and the more common buff wares dated to Old Babylonian times.

Table 8 indicates that some of these early types were also found in Sounding 2, the only one of our three soundings to penetrate beneath the latest surface indications of construction. However, the majority of these ceramics did not derive from the lowest levels in this sounding. Indeed, to the extent that we can tell given the small size of the sample, the lowest levels had good Old Babylonian ceramics. Instead, they came from the middle levels. Since these middle levels were made up of bricky collapse, and since in some cases we failed to identify all the mud-brick walls at this high level, it is possible that these early sherds came from the bricks. An overall look at the ceramics from Sounding 2 would place it firmly in the context of the other Old Babylonian assemblages.

	Main Excavations			Soundings					
Pot Type	Minimum Percentile at 2 sd.	Mean Percentile	Maximum Percentile at 2 sd.	4H95-3 N = 126	Sounding 1 N=136	Sounding 2 N = 171	Sounding 3 N = 81		
100	8.253	20.391	32.528	3.175	8.824	14.620	18.520		
103	0	2.904	6.947	0	0	3.509	0		
105	0	0.834	2.691	0	0	0	0		
110	0	0.640	2.276	0	0.735	2.339	7.407		
115	0	0.395	1.374	0	0	2.339	2.467		
120	0	1.774	4.709	0.794	0.735	1.170	2.469		
125	0	0.839	3.505	1.587	0.735	0	0		
200	0	1.125	3.019	0	2.206	0	0		
202	0	0.016	0.177	0	0	0.585	0		
205	0	2.997	6.906	1.587	7.353	13.450	8.642		
210	0	2.541	6.128	0.794	5.147	7.018	3.704		
212	0	0.621	0.420	1.587	0	0	0		
215	0	4.009	8.410	5.556	3.676	4.678	3.704		
220	0	1.116	3.742	0	6.618	1.754	0		
225	0	0.453	1.726	0.794	0	0.585	2.469		
230	0	0.428	1.796	0.794	2.206	3.509	1.235		
233	0	1.244	3.777	0.794	2.206	0.585	1.235		
234	0	2.675	5.377	0	0.735	1.170	1.235		
235	0	3.064	8.904	4.762	0.735	1.170	1.235		
237	0	0.573	2.154	0.794	0	0	0		
240	0	0.920	2.487	0.794	0.735	0	0		
244	0	0.046	0.394	0	1.471	0	0		
250	0	0.61	2.017	0	7.353	1.17	2.469		
255	0	0.004	0.040	0.794	0.735	0.585	0		
260	0	4.364	10.132	1.587	5.147	0	1.235		
262	0	0.543	1.854	0.794	0	0.585	0		
263	0	1.841	4.396	2.381	0	2.339	3.704		
265	0	0.182	1.099	7.937	0	2.339	0		
280	0	5.076	12.222	0	0.735	5.848	1.235		
290	0	0.148	0.706	0	0	2.924	4.938		
295	0	0	0	0	2.206	0	0		
300	0	0.375	1.983	0	1.471	0	0		
305	0	0.132	0.799	0	1.471	0.585	1.235		
310	0	0.209	1.059	3.968	0.735	0	2.469		
314	0	0.093	0.895	0	0	0.585	0		
315	0	0.968	2.888	0.794	0	0	0		
320	0	0.362	2.093	1.587	0	0	0		
322	0	0.020	0.165	0.794	0	0	0		

Table 8. Comparison of Sherds found in Soundings with Thosefrom the Main Area Excavated in 1990

	Main Excavations			Soundings					
Pot Type	Minimum Percentile at 2 sd.	Mean Percentile	Maximum Percentile at 2 sd.	4H95-3 N = 126	Sounding 1 N=136	Sounding 2 N = 171	Sounding 3 N = 81		
325	0	1.828	5.653	2.381	2.381 1.471		0		
330	0	0.514	1.898	3.698 0.735		0.585	0		
335	0	0.261	1.368	0	2.941	0	0		
345	0	0.038	0.495	0	0.735	0	1.235		
350	0	0.026	0.230	0.794	0.735	0	0		
400	0	0.987	3.036	1.587	2.206	0	1.235		
402	0	0.071	0.390	0	0	0.585	0		
410	0	1.178	3.711	5.556	0	0	0		
415	0	0.206	0.916	0.794	0	0	0		
420	0	0.374	1.802	0	0	0.585	0		
422	0	0.052	0.532	0.794	0	0	0		
430	0	1.100	3.050	0	0	0.585	0		
435	0	0.051	0.534	1.587	0	0.585	0		
440	0	0.292	1.229	0	1.471	0	0		
460	0	0.097	0.720	0	0.735	0	0		
470	0	0.232	1.041	0	0	0.585	0		
480	0	0.605	1.096	0.794	0	0	0		
485	0	0.007	0.086	0	0	0	1.235		
495	0	1.863	6.124	2.381	0	0	1.235		
505	0	0.132	0.781	0	0.735	2.339	2.469		
515	0	0.044	0.363	0.794	0.735	0.585	0		
520	0	0	0	1.587	0	0	0		
600	0	0.218	1.019	0	.735	0	0		
605	0	2.692	5.885	0	1.471	0	0		
607	0	0.270	1.159	0	0	0.585	0		
610	0	3.188	6.931	1.587	5.147	2.339	4.938		
615	0	0.538	1.989	0	0	0.585	2.469		
618	0	0.266	1.484	0.794	0	0	0		
620	0	2.404	5.213	4.762	3.676	4.678	1.235		
625	0	0.553	2.001	0	1.471	0.585	0		
630	0	0.201	0.941	0	0	0.585	1.235		
635	0.494	5.320	10.145	3.175	1.471	2.924	3.704		
640	0	2.944	5.961	6.349	4.412	2.339	7.407		
650	0	0.011	0161	0.794	0	0	0		

Table 8. Comparison of Sherds found in Soundings with Thosefrom the Main Area Excavated in 1990 (cont.)

To compensate for the differences in sample size, the data from the main 1990 excavations were compiled from the locus by locus statistics rather than from the aggregate statistics.



Fig. 346. Mashkan-shapir pottery typology.

Conclusions

The data from the four soundings indicate that surface traces of architecture can be good indicators of sub-surface construction. The tendency for Mesopotamian architects to use old wall stubs as foundations where possible means that this is true of even quite ephemeral traces. The evidence from Sounding 1 also suggests that a surface scatter of burned bone might be a good indicator of the sub-surface presence of burned buildings. Sounding 4H95III was particularly important in that it indicated that the south portion of Sector IV, which was where we had posited the location of the pre-Sin-iddinam settlement, ceased to be occupied in any significant way after the building of the city wall.

Appendix 2

Off-Site Archaeology in the Area of Mashkan-Shapir

Tony J.Wilkinson

Introduction

The flat, virtually featureless plains of southern Iraq include a wealth of archaeological information that is baffling, both in its complexity and in its detail. In addition to the usually low, often extensive, archaeological sites, the terrain includes straggling elongate mounds of upcast from ancient canals, extensive scatters of sherds and other artifacts, concentrations and scatters of molluscs, and remains of individual features, such as kilns and buildings. Here I will present some data that represent a preliminary attempt to document such a complex landscape around Mashkan-shapir. These data are, unfortunately, only partial, because no fieldwork was possible after August, 1990. I am however very grateful to Elizabeth Stone and Paul Zimansky for encouraging this work, to the British School of Archaeology in Iraq for allowing me to spread my interests across a wide range of projects, to Alan Lupton for assistance in the field, and to David Schofield for drawing fig. 347.

At the time of this preliminary off-site survey, in late March–early April 1990, the site of Mashkan-shapir was situated immediately east of a large area of irrigated cereal fields. The area of alluvial desert that virtually surrounded the site comprised a complex of linear mounds of canal upcast, extensive areas of flat terrain covered by sparse scatters of sherds and shells, occasional low elliptical mounds of sites, smaller areas of sherd scatter and/or slag and elongate soil marks of ancient canals, the upcast banks of which had been removed by centuries of deflation. This complex land-scape was analyzed by means of a detailed sampling program conducted to the south of the site (fig. 347). The following brief report summarizes the results of this survey and presents them within a more general archaeological context for southern Mesopotamia.

As a preliminary to disentangling the mass of off-site archaeological data, surface scatters of sherds were sampled. Such scatters have long been recognized in this region. For example, Ernest Mackay, on his way to Jemdet Nasr from Kish, noted:

A noticeable feature along the road was the tracts of potsherds that were passed at intervals. These tracts were not associated with the remains of villages or towns: the sherds, all of which appear to be of late date and are accompanied by a little blue glaze which appears to be Parthian, were lying on the surface of the desert. (Mackay 1931: 225)

Although Mackay suggested that these scatters might represent the ancient camping grounds of bedouin or caravans, he did not seem entirely certain in this interpretation, and more recent work has



Fig. 347. Sherd scatter densities within the sample area to the south of Mashkan-shapir. Numbers refer to the sample squares in Table 9.

suggested that such scatters may be an indirect result of ancient agricultural practice. In other words, the sherds arrive in the soil as a result of the spreading of compost or manure (which includes settlement refuse) on the fields to enhance yields. This results in the inorganic fraction remaining in the soil either as inclusions or as a surface scatter if the soil matrix is then removed by wind action. Other places in the region where such scatters have been recognized are between Abu Salabikh and Sasanian/Islamic Zibliyat, where the scatters are extensive and post-Hellenisitic in date and again do not include any obvious *in situ* occupational structures (Wilkinson 1990a).

Here, following a brief description of the area and the environmental context, I will interpret these scatters in the light of recent off-site archaeological work conducted elsewhere in the Near East. Quantitative off-site sampling was restricted to an area of a little less than 1 sq. km to the south of Mashkan-shapir; additional qualitative field-checking was conducted for a distance of about 5 km to the north of the site, and a supplementary sample transect was collected by Alan Lupton for almost 2 km to the east. Environmental and stratigraphical control were provided by the geomorphological work of Lisa Wells (see Chapter 2) from occasional exposures through the sedimentary accumulation of the plain and by localized surface cleaning of selected features by Alan Lupton. Archaeological sites consisting of occasional mounds upstanding to 2–3 m elevation were visited but in the short time available were not systematically collected. These sites are mainly Hellenistic, Parthian, Sasanian, and Early Islamic in date.

The Soils

Although no deep sequence of alluvial sediments and soils were described by the writer, the following section recorded approximately 1 km north of Mashkan-shapir probably was formed during the last few millennia:

0-20 ст:

Horizon 1. Sandy loam, including veneer of sherds of variable density (see below) and common shells of small freshwater gastropods and occasional freshwater bivalves. Occasionally present are lenses and sheets of small aggregates of silt/clay (parna¹). These particles, which are released from the underlying soil by weathering and desiccation, are actively being transported by the wind and go on to become a significant component of the aeolian dunes of the desert plains.

10-20 cm to 40-60 cm:

Horizon 2 Gray-brown silty clay with well developed blocky structure and occasional veins of white, soft calcium carbonate. Includes occasional small freshwater gastropods throughout. This appears to be the ancient irrigated soil of the plain. Locally, this horizon includes casts of roots preserved by the precipitation of calcium carbonate. In one area adjacent to the site, this firm soil horizon includes what appear to be plow marks (referred to elsewhere in report).

^{1.} A term coined in Australia for the widespread clayey deposit that is thought to be of aeolian origin (Butler 1956; Cooke and Warren 1973: 80).

> 60 cm

Horizon 3 Pale brown silt loam or sandy silt loam. In general, this is without well-developed soil structure and pedogenic horizons and appears to be the unaltered alluvial plain sediments, equivalent to those found below the build-up of irrigated soils at Abu Salabikh.

The upper horizon, which is of varying thickness, includes surface sherds and shells that were sampled during the survey. Contained sherds seem to be predominantly or exclusively post-Hellenistic in date, but the small freshwater gastropods and bivalves may result from a long history of irrigation. The shells are contained in horizon 2, a grayish-brown blocky horizon, also recognized near Abu Salabikh and Nippur and which almost certainly results from long-term irrigation. Such deposits are presumably the remains of sediment deposited by muddy irrigation waters conducted over the surface and to fields by irrigation canals of various dates. The constant addition of water kept such soils moist and resulted in localized evidence of chemical reduction. The small shells, which are exclusively of freshwater species, lived in such canals and presumably found their way onto fields either because small distributary canals ran across the fields or because they were contained within the organic and nutrient-rich muds that were deposited in the canals and were subsequently cleaned out and dumped alongside. Being of high potential fertility, such deposits may then have been spread over the fields, thus enriching them and acting as a form of fertilizer (Netting 1993). The surface scatter of shells may therefore include shells associated with the final phases of irrigation dating perhaps as late as the Islamic period, whereas other surface shells may derive from the irrigated soil beneath (horizon 2) as a result of weathering and the associated removal of the siltclay matrix by wind action. The lowermost layer, at greater than 50 cm depth, has little in the way of soil horizons and by analogy with sediment recorded during an augering program conducted at Abu Salabikh, this horizon seems to be the pristine and essentially unaltered alluvial plain. Although undated, at Abu Salabikh, this appears to pre-date the Early Dynastic and Uruk occupations. Although this may also be the case at Mashkan-shapir, it cannot be demonstrated without additional field evidence.

Following the accumulation of horizon 3, the soil environment may have become increasingly wet during the development of horizon 2 as a result of frequent applications of irrigation water. The severely deflated upper horizon (1), with its wind-scoured potsherds and occasional lenses of parna derived from the underlying horizon 2 demonstrate that the soil climate suffered considerable arid-ification after horizon 2 ceased to accumulate. Such an effect, although severe, simply appears to result from the withdrawal of irrigation water and the resultant development of an alluvial desert.

Canals (fig. 347)

The above-mentioned soils are cut by numerous traces of small canals infilled with silt and fine sand. Thus, in a canal junction near A1 (fig. 347), the pale brown silt/fine sand canal fill stands out clearly against the dark grayish-brown of the irrigated soil (horizon 2, above; fig. 348). Elsewhere, however, the canal fill can be darker than the adjacent soils, in part because the canal fills retain moisture for longer than the surrounding soils; in such cases the canals are distinguishable as dark soil marks. To the south of Mashkan-shapir, canals can be recognized (a) on a grid plan oriented on the major NW–SE canal augured by Lisa Wells (by 69–23, fig. 347). To judge by the presence of Parthian slipper-coffins parallel to and immediately west of this canal, it probably functioned during the Hellenistic-Parthian period, but from of the alignment of Old Babylonian walls upon this feature, it is likely that the canal also was in use during the early second millennium B.C. (Stone



Fig. 348. Corona imagery of the survey area with the canal system visible.

1990: 145). The existence of Sasanian-Islamic sites alongside suggests that this canal probably continued in use until that time, after which it may have slowly infilled to attain its present totally siltedup state. The presence of a common late fill between an E–W and the main N–S canal (near A1, fig. 347) suggests that at least the later phase of this NW–SE canal is contemporaneous with an eastwest canal, and it presumably acted as the main supply canal for them at this time. At least two of the E–W canals cut the small, sinuous N–S canal trace (F36 to E31), which is therefore stratigraphically earlier and which may be contemporaneous with an earlier phase of the main north-south canal mentioned above. An additional 13-m-wide WNW–ESE canal containing a gray-brown fill (fig. 347: J68–E31) appears to be an earlier feature than the grid of smaller canals, but unfortunately this relationship could not be confirmed by evidence in plan.

Off-Site Survey

Sherd scatters were traced intermittently to ca. 3-4 km to the north of Abu Duwari, at which point they faded out. However, the horizon of irrigated soil, described ca. 1 km to the N of



Fig. 349. Soil mark of canal near sample point C12.

Mashkan-shapir at between 10 and 60 cm depth continued, as did the contained gastropods. To the north, this horizon thickened to 50-60 cm depth. Some 5-6 km to the north of Mashkan-shapir, the surface of the ground is light in color, highly reflective, and littered with bivalves, which are locally abundant.

The area of survey (fig. 347) was sandwiched between the site of Mashkan-shapir to the north, a modern NW–SE drain to the west, and an area of intermittently flooded sedge vegetation to the south. The alluvial desert extended to the east except where a small area of recent barley field intruded into the SE corner of fig. 347. Seventy-four sample squares measuring 2×2 m square were laid out every 100 paces (i.e., between 90 and 100 m), to form a general grid over the area. An additional transect L75–83, collected by Alan Lupton, was laid out for 1800 m to the east of point G41 at 200 m intervals (fig. 347). In station A5, an experimental 5×5 m square yielded 33 sherds in contrast with the 13 sherds from the 2×2 m square (Table 9). This suggests that larger squares, which are necessary when surface scatters are sparse, result in a general underestimation of the total number of sherds present. However, because of the consistently high scatter densities at Mashkan-shapir, it was possible to restrict all sampling to within a standard 2×2 m sample square size.

The surface scatter of sherds varies from high densities averaging between 30 and 50 sherds per sample square to the NW down to densities averaging between 4 and 8 sherds per sample square to the SE (Table 9). There is a gentle decline in sherd scatter densities from NW to SE, which registers a correlation coefficient (for n = 74) of -0.61 (fig. 348). However as fig. 347 makes clear, this

decline is not spatially uniform but includes zones of lower density such as that evident from K69/70 to the north, through J64, I57, and H51 further south. Some lower sherd densities may result from the presence of an obscuring veneer of silt-clay aggregates (parna) or other sediments, but this is by no means always the case, because some of the surface collection units are registered as clean and perfect for artifact visibility (Table 9). Although the absence of dense sherd scatters from areas of sedimentation is clearly evident, more subtle variations such as those around J64–H51 cannot be convincingly explained at present.

Scatter densities, which are equivalent to between 113 and 1250 sherds per 100 sq. m, compare to "field scatter" densities in northern Iraq and Syria that vary mainly from 5 to around 120 sherds per 100 sq. m. This order of magnitude difference in surface scatter density primarily results from aeolian deflation, which, by removing the plow soil containing the sherds, results in the sherds being concentrated to form a lag deposit on the deflated soil. Similar situations prevailed within the hinterlands of major Islamic sites in Oman (Costa and Wilkinson 1987: plate 24), and it seems likely that such activities partly account for differences in "field scatter" density between western Europe and various parts of the Near East (Wilkinson 1988; Bintliff and Snodgrass 1988). Thus, in rain-fed upper Mesopotamia, a significant quantity of sherds are contained within the upper soil profile, whereas in the arid south, most sherds are found on the surface. However, within the generally dense sherd scatters illustrated, the higher end of the distribution may represent actual occupation, or perhaps small areas of refuse dumping. For example, the extreme figures > 60 in squares K72-K74 and J68 probably result from occupation or dumping around the fringes of the site of Mashkan-shapir, whereas G42, with 59 sherds, may represent an outlier of the small Islamic site located immediately to the east. On the eastern transect collected by Alan Lupton (prefixed L on Table 9), the peak scatter densities of 66 and 127 sherds per square result from the presence of a small Sasanian-Islamic archaeological site at this point. Elsewhere, sherd densities are lower, more consistent across the landscape, and less likely to result from in situ occupation. Where such scatters have been excavated by means of soil pits, it is evident that no buried occupation material is present, nor is there any lag deposit of archaeological material as would be expected if a pre-existing archaeological site had been deflated away by erosion. Therefore, where sherd densities fall below 60 per sample square, I suggest that occupation and refuse dumping are not the primary source of "field scatters" and that instead they result from the combined activities of manuring and wind deflation. Elsewhere within the sample area, occasional inliers of sherds and vitrified clay appear to represent specialized activities such as pottery kilns (\blacksquare , fig. 347).

Although the field scatters are apparently related to the grid of canals evident at within the east of the sample area, between sample points B11 and B12, the scatters actually overlie and postdate the canal fills. In this case, however, because the canal overlaid by the scatters is cut by two east-west canals and is therefore earlier than them,² it is possible that the sherd scatter is contemporane-ous with the later phase of canals rather than the earlier phase of the N–S canal (i.e., E31 to H 50 on fig. 347).

Chronology

With the available evidence it is only possible to suggest an approximate relative chronology for off-site features south of Mashkan-shapir. These are as follows (from earliest to latest):

^{2.} That is, the two features immediately to the south of transect lines B (10-12) and C (17-19) respectively.



Abu Duwari: Sherd counts

Fig. 350. Scatter Diagram showing the fall-off in sherd scatter density with distance from the southern boundary of Mashkan-shapir.

- *Phase A*: A period of riverine floodplain alluviation of indeterminate length. Although this may pre-date the habitation of Mashkan-shapir, it could alternatively represent a later phase of alluviation that is devoid of artifactual material.
- *Phase B:* Aggradation of gray-brown irrigated soils that contain freshwater gastropods, but no obvious potsherds. That these soils are of some antiquity is suggested by the presence of occasional veins of secondary calcium carbonate within them, and because they are cut by canals and overlaid by the sherd scatters.
- *Phase C*: An early phase of the main Canal G (by 69–23, fig. 347). This canal may have functioned since at least Old Babylonian times, but a later phase may be contemporaneous with the small N–S canal running from H50 to E31 (fig. 347).
- *Phase D*: A later phase of the main N–S canal (Canal G) is apparently contemporaneous with the small east-west canals. The sherd scatters described above, and which overlie canal H50–E31, contain Parthian–Early Islamic diagnostic sherds. These are probably therefore contemporaneous with the final phase of Canal G and its later distributaries.

Other features are less easy to date. Thus, the large oblique canal running NW–SE from K68 to near E31, although thought to be "early," cannot even be inserted in the above approximate scheme.

The Sherd Scatters in Broader Context

The brief pilot project at Mashkan-shapir suggests that the small enclave of field scatters sampled are consistent with related features recorded elsewhere in the Near East and that where they do not explicitly represent small sites, buildings, or other structures, they result from the application of refuse-rich manure to fields around a site. Judging by the progressive decline in sherd density southward away from high scatter densities around the edge of Mashkan-shapir, Hellenistic, Parthian, and Sasanian/Islamic settlement on or adjacent to that site could have been the focus of the scatter. It seems likely that the Parthian component of these scatters may relate to the 5 ha of Parthian occupation recorded on the NW part of Mashkan-shapir (Stone 1990: 145 and fig. 2), but whether Sasanian/early Islamic occupation was along the south edge of Mashkan-shapir or linked with the two Sasanian and early Islamic mounds indicated is uncertain. However, it is possible that the very high density scatters registered for the north end of the sample area may in fact result from in situ occupation. The steady decline in sherd scatter density southward away from this focus would then represent decreasing inputs of manure away from the occupation, a decline that accords with principles of least-effort noted by Chisholm (1979). There was no evidence of a significant scatter of Old Babylonian materials, either in the form of field scatters or from potential suburban occupation. Therefore, I would suggest that either Old Babylonian surburbs were not present to the south or, if they were, they are buried within or beneath the irrigated soil accumulation (Phase B) noted above.

It is now appropriate to place the field scatters in a wider context. From both the date of the contained sherds and their stratigraphic position, the scatters appear to be Parthian-Sasanian and Early Islamic in date. This is also the case for those scatters recognized immediately east of Abu Salabikh, around Zibliyat, as well as those noted by Mackay between Jemdet Nasr and Kish. On the other hand, the presence of one or two earlier sherds within the deep irrigated soils to the east of Nippur suggest that refuse manuring may have been of longer duration in some localities.

If the field scatters described above result from the application of manure and composts to the soil, they must represent an attempt by the local inhabitants to raise production above what would be possible by means of normal irrigation or irrigation combined with the pasturing of animals on stubble, the last named dating from Sumerian times (Civil 1994). Textual references suggest a long history for the incorporation of domestic refuse and other materials in compost and manure (Wilkinson 1982, 1994; Alcock et al. 1994; Miller and Gleason 1994). Specifically, although disputed by some, a textbook on early Islamic agriculture written by Ibn Wahshiyya describes the process of composting with ash, cinders, and other materials in southern Iraq (probably) during the 10th century A.D.³ (el-Samarraie 1972; Watson 1984). The use of such materials, which continues today in parts of the Middle East practicing traditional agriculture, suggests both a shortage of good manure and/or that population levels outstripped the supply of manure and fertilizers. Thus, similar extensive field scatters recorded in irrigated areas of the hinterlands of Siraf and Sohar correspond to the period of maximum populations in those cities. In general, Watson considers the early Islamic period to have been one of considerable innovation in cropping techniques (Watson 1983: chapters 23

^{3.} According to Watson (1983) Ibn Washiyya's works can probably be attributed to the early 10th century A.D., rather than the 9th century, as suggested by el-Sammarraie (1972). However, according to the *Encyclopaedia of Islam* (Gibb 1971), his works are probably a result of the successive rewritings and revisions of various materials surviving from antiquity (variously ascribed to the 1st centuries B.C. and A.D.) and variously modified by Syrian and Alexandrian Hellenism. Although Gutschmid (cited in Gibb 1971: 963–65) has suggested that the work is a forgery not earlier than the 7th century A.D., it seems unlikely that the references to manuring are entirely fictitious; rather, they probably represent a longer tradition than that of simply the Abbasid period.



Fig. 351. Chronological occurrence of off-site sherd scatters around Mashkan-shapir and Abu Salabikh in relation to long-term population trends in the Tigris-Euphrates lowlands (from Whitmore et al. 1990, based on data in Adams 1981).

and 24) with traditional practices of biennial fallow being replaced by multicropping, often using crops and trees imported from India.

As an alternative to the association of increased intensity of agricultural production with agricultural innovations, it is possible that such intensification was simply related to an increased demand for food as population increased in the first millennium A.D. (Boserup 1965; Grigg 1982: 37–43). Such a relationship between population peaks and past intensive cultivation as indicated by field scatters holds for Early Byzantine settlements in the upper Euphrates region of Turkey (Wilkinson 1990a) and for still earlier Bronze age settlement and agricultural systems in the upper Jazira of Iraq and Syria (Wilkinson 1990b).

It seems logical therefore to examine the Mashkan-shapir scatters in the context of long-term population of southern Iraq as derived from the settlement surveys of Adams (1981). Although Adams did not in fact compile a long-term population curve for the main part of the alluvium, a curve has been produced based on his data (Whitmore et al. 1990). This demonstrates that population reached a long-term peak between 500 and 1000 A.D., that is during the late Sasanian and early Islamic period (fig. 351).⁴ Both the Mashkan-shapir and Abu Salabikh-Zibliyat scatters therefore accumulated within this phase when population levels exceeded those of all earlier periods.

^{4.} This is higher than for all preceding periods, including the Akkadian/Ur III/Old Babylonian periods, but not as high as 20th century population levels. Note that the curve of Whitmore et al., although peaking in the first millennium A.D., does not show a peak nearly as abrupt as that given by Adams for the lower Diyala region (Adams 1965:

From the above, I would suggest that the long-term agricultural strategy of the irrigated lowlands of southern Iraq was probably irrigation with fallow every second year. Nutrient enhancement must have been derived primarily from the silt, clay, and organic matter contained within the irrigation waters themselves, as well as the incidental droppings of pastured animals. It was during this long and ill-defined phase that the gray-brown irrigated soils of horizon 2 probably accumulated. Although the sparse presence of sherds in older irrigated soils suggests that manuring with refuseenhanced composts might have taken place, in contrast with the abundant scatters of Bronze Age upper Mesopotamia, this does not appear to have been a major means of fertilization. By Hellenistic and Parthian times, however, when population levels appear to have surpassed those of the Ur III and Old Babylonian periods, it is likely that there was a need to increase production above that possible by means of traditional irrigated cultivation alone. By the Sasanian and/or early Islamic periods, when population levels in the alluvium were approaching a long term maximum, urban populations were also high, and agriculture was being intensified in order to accommodate new crops, additional sources of manures were necessary. As a result, special composts were prepared and applied to the soil to raise yields still further. Although such applications contributed to the sustainability of agriculture by returning nutrients and some organic matter to the soil, by encouraging annual cultivation they could have resulted in salinization (Jacobsen and Adams 1958; Gibson 1974: 10-12, 15–17). Furthermore, because certain manures, especially those of cattle, are rich in salts, this process can result in soils becoming even more salinized (Olson 1987: 204). As a result, there is an increasing probability of crop failure due to salinization. Whether such practices actually contributed to the dramatic decline of population that prevailed in the middle Islamic period in southern Iraq is uncertain.

^{115).} Note that Adams, who provides the primary data source, placed the peak in occupation during the Sasanian period and then describes a withdrawal of settlement from southern areas of the alluvium during early Islamic times.

Sq. No.	Dist. paces	Surface Visibility	No. of Shds	Slag	Glass	Glazed	Other	Shells
A.1	40	Clean surface	8	-	1	-	-	Occ. biv. & gast.
A.2	100	Mod. clean	13	-	1	1 gr.	-	Rare biv.comm. gast.
A.3	200	Mod. clean	13	-	-	1 gr	-	Rare biv., comm gast.
A.4	300	Mod. clean	12	-	1	-	-	Rare biv., comm gast.
A.5	400	Mod. clean: 2 x 2m	13	2	-	-	-	Rare biv. & gast.
A.5	400	Mod. clean: 5 x 5 m	33	-	1	-	-	Rare biv., Occ. gast.
A.6	500	Clean surface	15	4	-	-	-	Rare biv., comm.gast.
A.7	600	Slight sedimentation	12	2	-	-	-	Shells V. rare
A.8	700	Slight sedimentation	8	-	-	-	-	Shells V rare
A.9	800 +50N	Mod. clean, some parna	2	-	-	-	_	Occ. gast.
B.10	50	Slight veneer of parna	2	-	-	-	1 b.	Rare biv. & gast.
B.11	100	Clean surface	7	-	-	1 Isl	-	Rare biv. & gast.
B.12	200	Slight veneer of parna	10	-	-	-	-	Rare biv., occ gast.
B.13	300	Mod. clean surface	18	-	2	-	1 rm	Rare biv., occ gast.
B.14	400	Patchy veneer of parna	7	-	-	-	-	Rare biv., occ. gast.
B.15	500	Slight sedimentation	3	-	-	-	-	Rare gast.
B.16	600	Slight sedimentation	-	-	1	-	-	Rare shell
C.17	50	Clean surface	10	1	-	-	1 st	Occ gast.
C.18	100	Slight veneer of parna	12	-	-	-	1 br	Rare biv., occ gast.
C.19	200	Slight veneer of parna	13	2	-	-	-	Rare biv., C. gast.
C.20	300	Mod. clean	18	2	3	-	2 S/I	Rare biv.,C.gast.
C.20	320	Clean surface on canal	7	-	1	-	-	Rare shell
C.21	400	Sedimentation	-	-	-	-	-	Occ gast.
C.22	500	Thin veneer of parna	3	-	-	-	1 rm	Rare shell
D.23	50	Clean surface	1	-	1	-	-	Occ gast.
D.24	100	Mod. clean	8	-	2	1 bg	-	Rare biv., occ. gast.
D.25	200	Mod. clean, sparse parna	6	-	1	-	-	Occ. gast.
D.26	300	Mod. clean, sparse parna	11	-	-	-	1 Isl	Occ gast.
D.27	400	Slightly obscured	15	-	-	1 Isl	2 br	Rare biv. & gast.
D.28	500	Desiccated crust on grey soil	7	3	-	-	-	Shells almost absent
D.29	600	Rough aeolian surface	-	-	-	-	-	-
E.30	100	Clean surface	8	-	-	-	-	Rare gast.
E.31	200	Slight veneer of parna	4	-	-	-	-	Rare biv.,C. gast.
E.32	300	Slight parna veneer	4	-	-	-	-	Rare biv., occ gast.
E.33	400	Slight parna veneer	2	-	-	-	-	Rare biv., occ gast
F.34	50	Clean surface	16	-	2	-	-	Occ biv., occ gast.

Table 9. Results of off-site sampling to the south of Abu Duwari

Notes: Materials: Glss = glass; Glzd = glazed sherd; Othr = other; gr = green (glazed); b = basalt; br = brick; st = stone; ch = chert; bn = bone; cu = copper; t = terracotta/fired clay. Pottery: Isl. = Islamic; S/I = Sasanian/Islamic; rm = rim; hd = handle; bs = base. Quantities: Occ = occasional; Comm. = common; Mod. = moderate; V = very. Shells: biv. = freshwater bivalve; gast. = freshwater gastropod.

* Sasanian/Early Islamic between 1550 and 1800 on transect AL (75-83).
Table 9. Results of off-site sampling to the south of Abu Duwari (cont.)

Sq. No.	Dist. paces	Surface Visibility	No. of Shds	Slag	Glass	Glazed	Other	Shells
F.35	100	Mod. clean	16	1	_	2.Isl	_	Rare biv. & gast.
F.36	200	Slight veneer of parna	11	-	1	1	-	Rare biv. & gast.
F.37	300	Parna dunes, surf. obscured	-	-	-	-	-	Rare broken shell
F.38	400	Slight sedimentation	27	1	3	1	1b 1 ch 1 bn	Rare biv. & gast.
F.39	500	Parna sheet	-	-	-	-	-	Rare broken shells & tiny (aeolian) sherd flecks.
F.40	600	Surf. slightly obscured	16	-	-	1	1 b 1 rm	Rare gast.
-	700	No collection, moderate scatter continues beyond.	-	-	-	-	-	-
G.41	100	Partially obscured by parna	7	-	-	-	-	Rare biv. & gast.
G.42	200	Clean surface	59	3	1	-	-	Occ. biv.,C. gast.
G.43	300	Clean surface	7	-	1	-	1 rm	Rare biv., occ. gast.
G.44	400	Mod. clean	20	3	1	-	-	Rare biv., abund. gast.
G.45	500	Mod. clean surface	25	-	1	-	-	Rare gast.
G.46	600	Slight sedimentation	14	1	-	-	1 br.	Rare shell
G.47	700	Parna veneer, some sediment	11	1	-	1	-	Rare broken shell
H.48	50	Clean surface	10	-	-	1	-	Rare biv.
H.49	100	Clean surface, sparse parna	23	1	1	-	-	Rare biv., C. gast.
H.50	200	Some aeolian sand & parna	12	-	-	-	-	Rare biv., occ gast.
H.51	300	Some sedimentation & parna veneer	17	-	-	1	-	Rare biv., occ. gast.
H.52	400	Clean surface	33	-	-	1 gr	-	Rare gast.
H.53	500	Clean surface	17	2	1	1 gr	1 br	Rare gast
H.54	620	Clean surface	33	-	-	1 gr	-	Rare gast.
I.55	100	Clean surface	26	-	1	1	-	Rare biv., occ gast.
I.56	200	Clean surface	23	-	-	-	-	Rare gast. in clusters
I.57	300	Clean surface	19	-	1	-	-	Rare gast.
I.58	400	Clean surface	24	-	-	-	1 br	Rare gast.
I.59	500	Some sedimentation & parna	22	-	1	-	-	Rare gast.
I.60	600	Clean surface	71	4	-	2	-	Not recorded
I.61	700	Some sedimentation	40	-	-	-	1 br 1 rm	Rare gast.
J.62	96	Some sedimentation	22	4	-	-	1 br	Rare biv. & gast.
J.63	200	Clean surf.	22	2	-	-	1 hd	Rare gast.
J.64	300	Clean surf.	16	3	-	-	1 bs	Rare shells
J.65	400	Clean surface	26	4	-	1	-	Shells almost absent
J.66	500	Clean surface	31	3	-	-	1 rm 1 cu	Rare gast.

	Dist.		No. of	al		<u></u>	0.1	<u>ci ii</u>
Sq. No.	paces	Surface Visibility	Shds	Slag	Glass	Glazed	Other	Shells
J.67	600	Clean surface	19	21	-	-	-	Shells absent
J.68	700	Clean surface	72	6	-	-	1 br	Shells absent
K.69	100	Aeolian veneer & sediment	14	1	-	-	1 br	Occ shells, broken
K.70	200	Clean surface	17	-	1	-	-	Rare biv. and gast.
K.71	300	Slight sedimentation	26	2	-	-	1 bs	C. gast.
K.72	400	Clean surface	70	4	1	-	-	Rare biv. & gast.
K.73	500	Clean, slight sedimentation	108	8	-	-	-	Shells absent
K.74	600	Clean surface	60	20	-	-	-	Rare gast.
L.75	200	Clean surface	11	-	-	-	1 cu	Occ., mainly biv.
L.76	400	Clean surface	2	-	-	-	1 st	Rare biv. & gast.
L.77	600	Clean surface	4	-	1	-	-	Abund. mainly gast.
L.78	800	Clean surface	3	-	-	-	-	Shells absent
L.79	1020	Slight aeolian cover in SE	11	-	1	-	-	Shells absent
L.80	1210	Good even surface	12	-	1	-	-	Occ gast.
L.81	1400	Good even surface	9	-	-	-	-	Very rare gast.
L.82	1590	Good even surface*	127	6	2	2	-	Absent
L.83	1800	Some aeolian sand*	66	-	1	4	1 t	Only broken shells

Table 9. Results of off-site sampling to the south of Abu Duwari (cont.)

Appendix 3 Object Catalog

Abbreviations: l = length, w = width, h = height, th = thickness, d = diameter, hd = hole diameter

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	-
AbD 87-1	IM108845	Nude female plaque with head- dress, necklace, bracelets and belt. Broken off below waist.	h = 7.65 cm w = 3.75 cm th = 2.2 cm	51	550.64, 493.65	1	14	17	2	Fig. 53
AbD 87-2		Rim fragment of a deep alabaster bowl with out-turned rim.	d = 7 cm h = 9.8 cm th = 1.1 cm	5F	547.55, 723.25	15	1	93	2	Fig. 68
AbD 87-3		Half of the body of an aquamarine glass bottle.	d = 2.2 cm h = 3.4 cm th = 0.4 cm	7E	733.81, 857.72	25	25	87	3	
AbD 87-4		Inscribed fragment of black calcite, probably part of a stele or statue.	l = 3.8 cm w = 1.75 cm	5F	522.26, 716.57	20	89	0	2	Fig. 104
AbD 87-5		Head of a horse or horse and rider figurine. Medium buff ware with heavy grit temper.	l = 4.5 cm w = 4.8 cm th = 2 cm	7F	765.00, 753.43	1	15	30	2	Fig. 52
AbD 87-6	IM108838	Complete but badly eroded figu- rine, perhaps male. Arms broken off, depression for one eye, other side eroded. Slight hollow in the base. Medium buff ware.	h = 12.8 cm $w = 5 cm$ $th = 4 cm$	South- east por- tion of the site.		1	15	32	2	Fig. 52
AbD 87-7	IM108850	Rock crystal cylinder seal, badly worn, showing supplicant pre- sented to a seated god.	d = 1.1 cm l = 2.5 cm hd = 0.3 cm	5F	513.50, 772.08	19	17	65	2	Fig. 69
AbD 87-8	IM108810b	One half of a limestone discoid grinder.	l = 9.2 cm w = 4.9 cm th = 1.7 cm	6F	640.76, 703.79	20	56	0	2	Fig. 76
AbD 87-9		Spherical carnelian bead.	d = 0.6 cm h = 0.5 cm hd = 0.1 cm	South- east por- tion of the site.		12	18	0	2	
AbD 87-10	IM108805	Sherd of a white alabaster vessel with part of a cuneiform inscrip- tion preserved.	l = 7.1 cm w = 3.8 cm th = 1.0 cm	51	566.50, 486.85	15	1	3	2	Fig. 103
AbD 87-11	IM108841	Pierced amulet, Protoliterate in style, of pink limestone. Perhaps a dog with a collar with zig-zag decoration and creases over eyes, no visible ears.	l = 4.2 cm h = 2.7 cm th = 0.8 cm hd = 0.2 cm	East Mound		10	21		1	Fig. 70
AbD 87-12	IM108808h	Biconical hematite bead.	d = 1.0 cm l = 1.5 cm hd = 0.25 cm	6E	621, 87, 842.97	13	18	0	2	
AbD 87-13		Model chariot base. Medium buff ware with grit temper.	l = 7.1 cm w = 5.6 cm h = 3.5 cm hd = 0.7 cm	8J	820.31, 391.20	1	9	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	-
AbD 87-14	IM108817	Nude male plaque, figure facing right with left fist on breast. Legs broken off. Medium dark green ware.	h = 5.9 cm w = 5.3 cm th = 1.3 cm	5F	565.73, 760.98	1	14	18	2	Fig. 53
AbD 87-15		Model chariot base. Medium orange ware with chaff temper.	l = 6.5 cm w = 6.0 cm h = 3.6 cm hd = 0.7 cm	3F	377.27, 745.31	1	9	0	2	
AbD 87-16		Broken shell ring.	d = 2.3 cm th = 0.3 cm hd = 1.7 cm	6E	684.95, 845.30	30	19	0	2	
AbD 87-17	IM108803c	Fragment of a green glass bracelet with a yellow trail on the outside, triangular in section.	l = 5.1 cm w = 0.5 cm th = 0.6 cm	7E	763.13, 872.49	25	20	80	3	
AbD 87-18	IM108803b	Fragment of a black glass bracelet, somewhat triangular in cross sec- tion.	l = 5.3 cm w = 0.5 cm th = 0.6 cm	6E	629.04, 821.69	25	20	83	3	
AbD 87-19		Model chariot base, top broken off. Medium greenish-buff ware with chaff temper.	l = 6.7 cm w = 7.5 cm h = 3.2 cm hd = 1.1 cm	4F	488.48, 700.04	1	9	0	2	
AbD 87-20	IM108810j	Dentalium shell bead.	l =2.85 cm w = 0.4 cm hd = 0.1-0.2 cm	5F	562.57, 707.29	30	18	0	2	
AbD 87-21		Shallow bowl sherd of white quartzite with orange streaks.	rd = 12 cm l = 4.8 cm w = 3.8 cm th = 1.5 cm	4H	415.25, 593.24	27	1	92	2	Fig. 68
AbD 87-22	IM108808e	Model wheel. Medium orange ware.	d = 6.5 cm th = 3 cm hd = 0.6 cm	5F	567.64, 724.55	1	10	14	2	
AbD 87-23	IM108843	Complete lion plaque with lion facing right. Medium buff ware.	l = 6.5 cm h = 5.5 cm th = 1.4 cm	5F	534.50, 710.86	1	14	21	2	Fig. 53
AbD 87-24	IM108808i	Barrel shaped hematite bead.	d = 0.9 cm l = 1.95 cm hd = 0.2 cm	5F	575.76, 729.27	13	18	0	2	
AbD 87-25	IM108808c	Most of a model wheel. Medium buff ware with chaff temper.	d = ca 9.5 cm th = 2.5 cm hd = 1.4 cm	4G	417.06, 686.33	1	10	14	2	
AbD 87-26		Pierced quartzite whetstone or palette, broken, rectangular in shape.	l = 5.2 cm w = 6.0 cm th = 1.4 cm hd = 0.2 cm	4G	423.41, 687.35	11	51	0	2	
AbD 87-27		Sherd of a vessel in black and white granite.	l = 5.6 cm w = 2.3 cm th = 1 cm	4G	421.39, 654.11	16	1	0	2	
AbD 87-28	IM108807a	Ovoid hematite weight, slightly chipped. Weight 16.2 gm.	l = 3.75 cm d = 1.4 cm	5F	588.67, 733.41	13	48	0	2	
AbD 87-29		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 9.0 cm w = 3.9 cm d = 2.0 cm (handle)	5F	548.52, 792.28	1	33	0	1	Fig. 62
AbD 87-30		Sherd of an alabaster vessel.	l = 4.8 cm w = 3.6 cm th = 1.0-1.4 cm	5F	541.59, 720.88	15	1	0	2	
AbD 87-31		Discoid shell bead	d = 0.7 cm th = 0.2 cm hd = 0.3 cm	4G	428.37, 650.53	30	18	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 87-32		Fragment of smoothed and pol- ished hematite, chipped, polishing is only on the two edges.	l = 3.0 cm w = 1.8 cm th = 1.2 cm	6G	617.93, 695.79	13	55	0	2	
AbD 87-33		One third of a limestone mace- head.	d = 6.0 cm h = 4.1 cm hd = 2.0 cm	6G	605.20, 675.96	20	52	0	2	
AbD 87-34	IM108801c	Ceramic disk. All edges are worn, as is the surface. Medium-coarse buff ware with chaff temper.	d = 9.1–10.0 cm th = 1.4 cm	6G	421.39, 650.42	1	57	0	2	
AbD 87-35		Obsidian blade with retouch on edges.	l = 4.05 cm w = 1.2 cm th = 0.5 cm	4G	447.98, 655.30	17	29	0	2	Fig. 74
AbD 87-36		Fragment of a greenstone cylinder seal.	d = 1.0 cm h = 1.4 cm hd = 0.3 cm	7E	772.37, 896.54	20	17	0	2	
AbD 87-37		Primary cortical flake of flint.	l = 3.7 cm w = 2.5 cm	5F	551.07, 752.32	18	29	0	2	
AbD 87-38		Part of a flat discoid grinder of lay- ered sedimentary rock.	l = 6.1 cm w = 7.1 cm th = 1.9 cm	6G	634.84, 682.44	20	56	0	2	
AbD 87-39		Sherd of an alabaster vessel.	l = 2.5 cm w = 2.1 cm th = 0.6 cm	6G	636.56, 696.35	15	1	0	2	
AbD 87-40		Retouched flint blade.	l = 3.8 cm w = 1.0 cm th = 0.35 cm	5F	588.35, 731.78	18	29	0	2	
AbD 87-41		Flint core.	l = 3.3 cm w = 2.8 cm th = 1.6 cm	7F	750.83, 774.90	18	29	0	2	
AbD 87-42	IM108846	Prismatic flint core, with some cortex preserved on tip.	l = 5.5 cm w = 2.9 cm th = 2.3 cm	5F	578.98, 751.79	18	29	0	2	Fig. 74
AbD 87-43		Flint chipping debris.	l = 3.0 cm w = 1.8 cm th = 1.3 cm	5F	576.35, 711.19	18	29	0	2	
AbD 87-44		Fragment of a model chariot shield, seat fragment only. Medium buff ware	l = 2.2 cm w = 4.8 cm th = 3.3 cm hd = 1.2 cm	4G	420.67, 662.56	1	9	0	2	
AbD 87-45	IM108803a	Fragment of a cream colored glass bracelet with a red and blue trails and green and red splotches.	d = 8 cm w = 0.9 cm th = 0.6 cm	6E	619.28, 836.67	25	20	82	3	Fig. 70
AbD 87-46		Fragment of a black glass bracelet, circular in cross section.	l = 4.8 cm d = 0.5 cm	6G	658.65, 627.08	25	20	83	3	
AbD 87-47		Broken model wheel. Medium orange ware with chaff temper.	d = 7.2 cm th = 3.0 cm hd = ca 0.6 cm	4G	445.22, 607.37	1	10	14	2	
AbD 87-48		One third of a model wheel. Medium orange ware with chaff temper.	d = 11 cm th = 3.2 cm hd = 1.0 cm	4G	435.96, 628.13	1	10	14	2	Fig. 56
AbD 87-49		Largely complete model chariot, no design on shield. Medium buff ware.	h = 14.7 cm w = 8.5 cm th = 2.2 cm hd = 0.6 cm	3G	339.06, 667.51	1	7	0		Fig. 55
AbD 87-50	IM108827	Fragment of decorated baked clay showing architectural pattern below guioche.	l = 2.7 cm w = 1.8 cm th = 0.5 cm	6G	681.95, 625.12	1	11	41	2	Fig. 54
AbD 87-51	IM108831	Copper spearpoint, tip and far end broken off.	l = 7.3 cm w = 4.1 cm th = 0.4 cm	6G	649.70, 613.22	3	38	0	2	Fig. 66

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	•
AbD 87-52	IM108799	Shallow bowl with irregular rim and string-cut base. Medium cream ware with chaff temper.	rd = 12 cm bd = 5.2 cm h = 2.4-2.9 cm	6G	692.72, 682.75	1	1	0	2	Fig. 50
AbD 87-53	IM108803	Small bowl with irregular rim and string-cut base. Medium buff ware.	rd = 8.7 cm bd = 3.2 cm h = 2.2–2.5 cm	6G	693.37, 682.84	1	1	0	2	Fig. 50
AbD 87-54		Model chariot base. Medium greenish-buff ware with chaff tem- per.	l = 7.3 cm w = 7.7 cm h = 5.0 cm hd = 0.8, 1.2 cm	4G	407.70, 682.12	1	9	0	2	
AbD 87-55		Worked piece of siltstone, rough stone with grooves on all sides, perhaps used for sharpening.	l = 4.9 cm w = 4.5 cm th = 1.9 cm	6G	688.39, 647.82	20	55	0	2	Fig. 77
AbD 87-56		Broken limestone macehead.	l = 4.0 cm w = 2.3 cm hd = 1.5 cm	5H	511.64, 514.46	10	52	0	2	
AbD 87-57	IM108857	Almost complete plaque showing female facing front holding bottles in each of her hands, with two geese at her feet and a pair of rosettes by her head. Medium buff ware.	h = 9.8 cm w = 5.6 cm	51	511.94, 494.40	1	14	22	2	Fig. 53
AbD 87-58	IM108829	Top half of a model chariot shield. Design shows a pair of lion sickles with a solar disk and the top part of a sickle between them. Medium greenish ware with chaff temper.	h = 5.1 cm w = 3.9 cm th = 2 cm hd = 0.4 cm	5F	507.63, 736.15	1	8	8	2	Fig. 55
AbD 87-59	IM108808d	Complete model wheel. Medium buff ware with chaff temper.	d = 8.6 cm th = 3 cm hd = 0.7 cm	4G	473.94, 604.28	1	10	14	2	
AbD 87-60	IM108793	Goblet with pointed base and cari- nated neck. Medium buff ware with chaff temper.	rd = 4.9 cm h = 17.4 cm	6G	668.89, 662.75	1	2	0	2	
AbD 87-61	IM108788	Old Babylonian goblet. Medium buff ware with chaff temper.	rd = 10.9 bd = 5.5 h = 22.6 cm	4G	420.61, 688.77	1	2	0	2	
AbD 87-62		Half of a limestone donut-shaped stone.	l = 8 cm w = 4.5 cm h = 6 cm hd = 1.7 cm	6G	619.68, 600.94	10	47	0	2	
AbD 87-63	IM108802b	Quartzite cuboid, all six surfaces show some wear.	l = 3.5 cm w = 3.5 cm h = 3.5 cm	6G	681.23, 612.84	11	41	0	2	
AbD 87-64		One third of a model wheel. Medium buff ware.	d = 6.0 cm th = 2.5 cm hd = 0.4 cm	5H	517.99, 548.36	1	10	14	2	
AbD 87-65	IM108802a	Quartzite cuboid, traces of wear on all sides.	l = 4 cm w = 4 cm th = 4 cm	6G	662.91, 637.72	11	41	0	2	Fig. 76
AbD 87-66		Model wheel, slightly chipped. Medium buff ware.	d = 6.0 cm th = 2.0 cm hd = 0.7 cm	6G	671.65, 612.14	1	10	14	2	
AbD 87-67		Most of a model wheel. Medium buff ware with chaff temper.	d = 7 cm th = 2.5 cm hd = 0.5 cm	6G	691.81, 603.21	1	10	14	2	
AbD 87-68		Rim sherd of a shallow bowl of black and white granite, depression below rim.	d = 17 cm $h = 4 cm$ $th = 1 cm$	6H	609.10, 601.13	16	1	90	2	
AbD 87-69		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 14 cm w = 5.5 cm th = 1.5 cm	5H	509.70, 513.46	1	33	0	1	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	•
AbD 87-70	IM108809d	Spiral copper/bronze ring.	d = 2.3 cm th = 0.8 cm hd = 1.5 cm	5F	522.72, 763.41	3	19	0	2	
AbD 87-71		Eroded model wheel. Medium orange ware.	d > 5.1 cm th = 1.7 cm hd = 0.8 cm	6G	674.39, 607.27	1	10	14	2	
AbD 87-72		Hub of a model wheel. Medium buff ware with chaff temper.	l = 3.9 cm w = 3.1 cm th = 1.1 cm hd = 0.8 cm	6G	636.12, 616.07	1	10	14	2	
AbD 87-73	IM108811	Copper/bronze chisel, rear end broken off.	l = 6.7 cn w = 1.5 cm th = 0.1-0.6 cm	Sound- ing 1 Locus 1 Level 3	421.88, 642.60	3	35		2	
AbD 87-74		Folded piece of copper/bronze, probably part of a spade.	l = 8.1 cm w = 3.0 cm th = 1.1 cm	5H	529.84, 537.35	3	91	0	2	Fig. 65
AbD 87-75	IM108826	Copper/bronze harpoon, end bro- ken off.	l = 16.6 cm w = 2.5 cm d = 0.9 cm	5G	541.20, 619.20	3	37	0	2	Fig. 66
AbD 87-76	IM108795b	Fragment of a large circular tray with impressed designs. Medium buff ware with chaff temper.	l = 15.2 cm w = 11.5 cm th = 2.6 cm	5F	599.83, 703.13	1	4	0	2	Fig. 51
AbD 87-77	IM108854	Fragment of a cylinder seal in black stone. Design shows a sup- plicant presented to a god by a supplicant goddess with traces of a lunar crescent in the upper field and an inscription to Shamash and Aya.	d = 1.8 cm l = 1.6 cm hd = 0.3 cm	6G	626.47, 675.34	20	17	0	2	Fig. 106
AbD 87-78		Half of a limestone donut-shaped stone.	d = 11 cm w = 4.5 cm h = 5 cm hd = 1.7 cm	5G	539.66, 675.91	20	47	0	2	
AbD 87-79		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 15.7 cm w = 5.1 cm th = 1.9 cm	51	584.04, 467.13	1	33	0	1	
AbD 87-80		Discoid shell bead.	d = 0.5 cm th = 0.1 cm hd = 0.2 cm	5H	545.40, 556.71	30	18	0	2	
AbD 87-81	IM108808b	Model wheel. Medium orange ware with chaff temper.	d = 8.5 cm th = 2.2 cm hd = 0.9 cm	4H	412.94, 582.27	1	10	14	2	
AbD 87-82		Half of a limestone donut-shaped stone.	l = 7.7 cm w = 3.9 cm h = 4.8 cm	5H	515.23, 541.35	20	47	0	2	
AbD 87-83	IM108828	Top left corner of a model chariot shield. Only head of the figure of Shamash and two dots to the left of it are preserved. Medium orange ware.	h = 6.2 cm w = 3.8 cm th = 1.5 cm hd = 0.4 cm	4G	458.95, 683.26	1	8	6	2	
AbD 87-84		Base fragment of a bowl of tan quartzite with orange streaks. Nei- ther interior nor exterior were fin- ished off.	bd = 18 cm h = 2.3 cm th = 0.8 cm	51	529.78, 468.15	15	1	92	2	
AbD 87-85		Fragment of a limestone donut - shaped stone.	l = 6.6 cm w = 4.9 cm th = 4.5 cm	6G	690.95, 605.93	19	47	0	2	
AbD 87-86		Pierced quartzite whetstone or palette, broken, triangular in shape.	l = 7.5 cm w = 4.5 cm th = 1.3 cm hd = 0.35 cm	5H	515.65, 573.23	20	51	0	2	Fig. 73

Object #	IM #	Description	Size	Square	Findspot		Са	oding		Ref
						Mat	Obj	Dec	Date	•
AbD 87-87		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 7.07 cm w = 4.2 cm th = 1.19 cm	4H	465.16, 586.90	1	33	0	1	
AbD 87-88	IM108808h	Limestone donut-shaped stone, nicely shaped.	d = 7.7 cm h = 2.2 cm hd = 2.1 cm	51	534.33, 458.87	20	47	0	2	Fig. 72
AbD 87-89		Sherd of a shallow bowl of pink quartzite.	rd unknown l = 5.5 cm w = 4.7 cm th = 0.8 cm	7E	725.14, 830.53	26	1	92	2	
AbD 87-90		Copper bronze finial of some object, in the shape of a flat, pierced diamond.	l = 2.1 cm w = 1.6 cm th = 0.4 cm	51	502.96, 472.57	3	22	0	2	Fig. 64
AbD 87-91	IM108809j	About one half of a copper/bronze ring.	l = 2.6 cm th = 0.5 cm	51	500.44, 480, 30	3	19	0	2	
AbD 87-92		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 9.3 cm w = 2.6 cm th = 1.7 cm	51	521.23, 454.35	1	33	0	1	
AbD 87-93	IM108807d	Barrel shaped balance weight of mottled grey stone with a cross incised in it. Weight = 4.3 gms.	l = 2.6 cm d = 1.0 cm	51	534.84, 466.47	20	48	0	2	Fig. 71
AbD 87-94	IM108848	Hematite cylinder seal showing god in ascending position facing a supplicant. Seal includes numerous fill figures including frog, fish, human head and dancing dwarf.	d = 0.8 cm l = 2.0 cm hd = 0.3 cm	4I	438.10, 469.64	13	17	66	2	Fig. 69
AbD 87-95		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 9.5 cm w = 5.5 cm th = 1.2 cm	3Н	453.24, 546.99	1	33	0	1	
AbD 87-96	IM108808f	Chipped model wheel. Medium orange ware.	d = 10 cm th = 3 cm hd = 1.4 cm	4H	388.86, 570.53	1	10	14	2	
AbD 87-97		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 13.5 cm w = 5.5 cm th = 1.9 cm	51	511.62, 420.57	1	33	0	1	
AbD 87-98		Discoid blue glass bead.	d = 0.6 cm h = 0.2 cm hd = 0.1 cm	6H	628.74, 515.02	25	18	0	3	
AbD 87-99	IM108849	Carnelian cylinder seal showing presentation scene with god in the ascending position.	d = 0.85 cm l = 1.7 cm hd = 0.3 cm	5G	536.04, 654.41	12	17	66	2	Fig. 69
AbD 87-100		Badly eroded model chariot base, front broken off. Medium buff ware.	l = 4.5 cm w = 6.5 cm h = 4.0 cm hd = 1.4 cm	4H	449.36, 564.84	1	9	0	2	
AbD 87-101	IM108806b	Limestone donut-shaped stone, crudely shaped.	d = 12.7 cm h = 7.0 cm hd = 1.6 cm	4H	436.34, 549.73	10	47	0	2	Fig. 72
AbD 87-102	IM108807b	Chipped lentoid hematite balance weight. Weight = 8.7 gms.	l = 3.1 cm w = 1.2 cm th = 0.8 cm	4H	460.93, 540.71	13	48	0	2	
AbD 87-103	IM108792	Old Babylonian goblet with slightly carinated rim and pointed base. Medium buff ware with chaff temper.	rd = 6.3 cm h = 20.1 cm	4I	456.77, 419.37	1	2	0	2	
AbD 87-104	IM108796	Ceramic bottle stop with pierced top. Medium orange ware with grit temper.	h = 5.8 cm w = 6.5 cm l = 8 cm	4H	400.36, 542.23	1	62	0	2	Fig. 51

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 87-105	IM108800a	Broken baked clay sickle. Fine overfired greenish buff ware.	l = 12.4 cm w = 6.9 cm th = 1.0 cm d = 1.8 cm (handle)	4H	471.10, 542.82	1	33	0	1	
AbD 87-106		Tip of a copper/bronze pin.	l = 1.7 cm d = .15 cm	4I	429.90, 497.14	3	39	0	2	
AbD 87-107	IM108834	Model chariot shield, bottom bro- ken off. Design shows a pair of lion-sickles with solar disk and sickle between them. Medium buff ware with chaff temper.	h = 8.5 cm w = 6.4 cm th = 1.8 cm hd = 0.5, 1.4 cm	3Н	360.70, 587.87	1	8	8	2	Fig. 55
AbD 87-108		Fragment of a spiral black glass bracelet, circular in cross section.	l = 3.5 cm d = 0.5 cm	8G	873.88, 643.21	25	20	81	3	
AbD 87-109		Copper/bronze arrowhead, tip and rear both broken off.	l = 2.4 cm w = 1.7 cm th = 0.8 cm	4I	474.44, 482.88	3	38	0	2	
AbD 87-110	IM108837	Hemispherical white stone (mar- ble?) spindle whorl.	d = 3.1 cm h = 1.4 cm hd = 0.7 cm	51	579.55, 451.51	20	50	0	2	Fig. 73
AbD 87-111		One half of a limestone mortar.	l = 10.3 cm w = 6.7 cm h = 5.5 cm	4I	452.89, 475.52	20	42	0	2	Fig. 75
AbD 87-112	IM108801a	Pierced quartzite whetstone or palette, chipped, subrectangular in shape.	l = 8.5 cm w = 6.7 cm th = 1.5 cm hd = 0.5 cm	4H	461.35, 523.05	11	51	0	2	Fig. 73
AbD 87-113		Model chariot base with seat and front broken off. Medium buff ware.	l = 4.5 cm w = 7.2 cm h = 4.3 cm hd = 0.7 cm	5H	571.48, 596.30	1	9	0	2	
AbD 87-114		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 7.4 cm w = 6.2 cm th = 1.5 cm	4H	450.80, 517.60	1	33	0	1	
AbD 87-115		Two thirds of a model wheel. Medium buff ware with chaff tem- per.	d = 5.2 cm th = 1.7 cm hd = 0.7 cm	4H	414.61, 582.73	1	10	14	2	
AbD 87-116		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 7.5 cm w = 5.0 cm th = 1.3 cm	4H	485.36, 523.61	1	33	0	1	
AbD 87-117		Broken end of a copper/bronze chisel.	l = 4.0 cm w = 1.7 cm th = 0.9 cm	4I	423.93, 492.65	3	35	0	2	
AbD 87-118	IM108810f	Carnelian bead shaped in an elon- gated dome.	l = 1.7 cm w = 0.8 cm h = 1.1 cm hd = 0.3 cm	5Н	583.79, 522.44	12	18	0	2	Fig. 70
AbD 87-119		Broken spherical black glass bead.	d = 0.7 cm h = 0.6 cm hd = 0.2 cm	4I	420.62, 468.16	25	18	0	3	
AbD 87-120		Fragment of a copper/bronze spearpoint with a central flange, both ends broken off	l = 5.0 cm w = 2.4 cm th = 1.1 cm	4H	423.69, 513.44	3	38	0	2	
AbD 87-121	IM108810c	Spherical carnelian bead.	d = 0.6 cm h = 0.6 cm hd = .2 cm	4I	445.90, 476.73	12	18	0	2	
AbD 87-122		Sculpted and polished fragment of black stone, probably part of a statue.	l = 9.3 cm w = 4.4 cm th = 3.9 cm	4H	477.67, 520.77	20	55	0	2	
AbD 87-123		Complete model wheel. Medium orange ware with chaff temper.	d = 10.7 cm th = 3.2 cm hd = 1.4 cm	4I	436.98, 471.62	1	10	14	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	-
AbD 87-124	IM108847	Cylinder seal of grey stone show- ing griffin flanked by two human figures. Includes an inscription.	d = 0.95 cm l = 1.65 cm hd = 0.4 cm	4H	478.90, 534.75	20	17	68	2	Fig. 105
AbD 87-125		Part of an animal figurine, only two legs and part of the torso remaining. Medium buff ware.	l = 5.2 cm h = 4.5 cm w = 4 cm	4I	418.36, 415.85	1	15	31	2	
AbD 87-126		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 6.5 cm w = 4.2 cm th = 0.8 cm	5G	566.57, 698.97	1	33	0	1	
AbD 87-127		Pierced quartzite whetstone or palette, slightly chipped, subrect- angular in shape.	l = 11.8 cm w = 6.0 cm th = 1.8 cm hd = 0.5 cm	51	555.77, 462.09	11	51	0	2	Fig. 73
AbD 87-128	IM108822	Ceramic disk with one hole drilled through it. One chip broken off. Medium buff ware with chaff tem- per.	d = 9.0 cm th = 2.4 cm hd = 0.9 cm	51	514.74, 497.14	1	63	0	2	Fig. 62
AbD 87-129		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 15.5 cm w = 4.0 cm th = 1.0 cm	51	515.61, 499.97	1	33	0	1	
AbD 87-130		Discoid bead of dark grey stone.	d = 0.8 cm h = 0.3 cm hd = 0.2 cm	51	521.37, 463.29	20	18	0	2	
AbD 87-131		One half of a globular carnelian bead.	l = 0.7 cm w = 0.5 cm h = 0.4 cm hd = 0.15 cm	6G	658.33, 620.01	12	18	0	2	
AbD 87-132		Broken copper bowl found in 57 fragments. A complete profile can be reconstructed.	d = 12 cm h = 2.7 cm th = 0.15 cm	6G	659.79, 664.94	3	1	0	2	Fig. 63
AbD 87-133	IM108806c	Limestone donut-shaped stone.	d = 9.5 cm h = 3.5 cm hd = 3.1 cm	5H	549.66, 505.19	20	47	0	2	Fig. 72
AbD 87-134		Broken inscribed clay nail head, medium buff ware with chaff tem- per.	d = 11 cm th = 1.7 cm	5G	551.33, 668.49	1	39	3	2	Fig. 102
AbD 87-135	IM108801b	Pierced quartzite whetstone or palette, roughly oval in shape.	l = 10.5 cm w = 7.3 cm th = 1.0 cm hd = 0.4 cm	4H	473.68, 522.05	11	51	0	2	Fig. 73
AbD 87-136		Rim fragment of a bowl in black and white granite.	d = 25 cm h = 3.0 cm th = 1.1 cm	4I	469.08, 435.20	16	1	92	2	
AbD 87-137		Discoid bead of dark grey stone.	d = 0.5 cm h = .25 cm hd = 0.1 cm	5G	559.16, 646.17	20	18	0	2	
AbD 87-138		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 8.5 cm w = 4.3 cm th = 3.1 cm	4I	448.08, 419.58	1	33	0	1	
AbD 87-139		Cylindrical bead of agate, broken.	d = 0.5 cm l = 0.8 cm hd = 0.1 cm	5F	564.04, 708.37	20	18	0	2	
AbD 87-140		Fragment of a hematite balance weight.	l = 1.0 cm d = 0.8 cm	5F	565.31, 708.21	13	48	0	2	
AbD 87-141	IM108809b	Spiral copper/bronze ring.	d = 2.5 cm th = 0.5 cm hd = 1.5 cm	5G	542.58, 618.71	3	19	0	2	Fig. 64
AbD 87-142		Model chariot base. Medium buff ware.	l = 7.7 cm w = 6.7 cm h = 4.5 cm hd = 1.2, 1.3 cm	4H	450.73, 515.92	1	9	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 87-143		Cylindrical bead of white quartz- ite, broken.	d = 0.6 cm l = 2.3 cm hd = 0.2 cm	51	522.79, 472.03	20	18	0	2	
AbD 87-144		Sherd with 'oatmeal' decoration. Medium buff ware with grit tem- per.	l = 5.8 cm w = 5 cm th = .7 cm	51	515.23, 463.05	1	1	0	3	
AbD 87-145		Broken shell ring.	d = 2.3 cm th = 0.3 cm hd = 1.7 cm	8G	874.64, 682.88	30	19	0	2	
AbD 87-146	IM108816	Female figurine fragment, broken at waist and missing most of the head and arms. Applied breasts and necklace. Medium buff ware.	l = 4.6 cm w = 4.7 cm th = 1.2 cm	4H	456.27, 547.17	1	15	33	2	Fig. 52
AbD 87-147		Broken shell ring.	d = 2.0 cm th = 0.3 cm hd = 1.4 cm	6H	636.02, 541.08	30	19	0	2	
AbD 87-148		Copper/bronze coin with traces of an impression on one side.	d = 1.4–1.7 cm th = 0.4 cm	6G	631.19, 618.50	3	53	0	3	Fig. 64
AbD 87-149	IM108813	Two copper/bronze pins with rounded heads and square cross- section. Ends broken off.	l = 6.4, 8.4 w = 1.2, 1.4	51	582.22– 582.29, 452.29– 452.35	3	34	0	2	Fig. 64
AbD 87-150		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 8.0 cm w = 6.8 cm th = 2.0 cm	4H	450.75, 540.96	1	33	0	1	
AbD 87-151		Copper/bronze bar, broken.	l = 5.8 cm w = 1.6 cm th = 0.8 cm	6G	686.41, 664.92	3	55	0	2	
AbD 87-152		Fragment of a copper/bronze blade, one hafting hole preserved.	l = 3.7 cm w = 3.7 cm th = 0.7 cm hd = 0.3 cm	5G	560.74, 681.80	3	29	0	2	
AbD 87-153		Half of a limestone donut-shaped stone.	l = 12.6 cm w = 7.1 cm h = 6.6 cm hd = 3.2 cm	51	499.35, 486.18	20	47	0	2	
AbD 87-154		Half of a limestone donut-shaped stone.	d = 11 cm h = 7.3 cm hd = 3.15 cm	51	571.90, 471.09	20	47	0	2	
AbD 87-155		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 9.0 cm w = 5.0 cm th = 1.3 cm	4H	436.02, 531.41	1	33	0	1	
AbD 87-156		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 6.2 cm w = 3.3 cm th = 1.6 cm	4H	465.78, 541.13	1	33	0	1	
AbD 87-157		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 7.3 cm w = 6.3 cm th = 1.6 cm	4H	448.16, 537.19	1	33	0	1	
AbD 87-158	IM108839	Silver (?) ring with purplish stone.	d = 2.0 cm w = 0.8 cm th = 0.3 cm	31	323.42, 430.24	41	19	0	3	Fig. 64
AbD 87-159		Sherd of an alabaster vessel.	l = 4.0 cm w = 2.0 cm th = 0.4 cm	51	585.05, 440.64	15	1	0	2	
AbD 87-160	IM108810d	Biconical carnelian bead.	d = 0.9 cm l = 1.0 cm hd = 0.2 cm	4I	427.61, 480.43	12	18	0	2	Fig. 70
AbD 87-161	IM108810e	Discoid bead of mottled red stone.	d = 1.23 cm h = 0.56 cm hd = 0.18 cm	4I	422.51, 408.68	20	18	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 87-162	IM108810g	Irregular round carnelian bead with multiple facets on one side.	l = 0.9 cm w = 0.7 cm h = 0.4 cm hd = 0.1 cm	4H	416.34, 504.69	12	18	0	2	Fig. 70
AbD 87-163		Copper/bronze ball.	d = 1.66 cm	5G	549.76, 648.16	3	24	0	2	
AbD 87-164		Cylindrical hematite bead, broken. Perhaps a cylinder seal blank.	d = 1.8 cm l = 1.2 cm hd = 0.4 cm	5G	528.07, 614.16	13	18	0	2	
AbD 87-165		Cylindrical bead of translucent green glass.	l = 1.1 cm d = 0.8 cm hd = 0.3 cm	4I	418.26, 487.46	25	18	0	3	
AbD 87-166		Fragment of a large limestone grinding stone, with a small hole drilled through it, presumably for a handle.	l = 14 cm w = 10.5 cm th = 6.7 cm	51	574.45, 471.72	10	54	0	2	Fig. 75
AbD 87-167	IM108790	Small pot with excised lines on flaring rim and rounded base. Medium buff ware with chaff tem- per.	rd = 12.2 cm h = 13.1 cm	4I	488.97, 436.48	1	3	0	2	Fig. 50
AbD 87-168	IM108800b	Broken baked clay sickle. Fine overfired greenish buff ware.	l = 14.0 cm w = 5.5 cm th = 1.7 cm	4I	470.95, 452.61	1	33	0	1	
AbD 87-169		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 9.5 cm w = 3.0 cm th = 1.5 cm	4H	466.69, 539.95	1	33	0	1	
AbD 87-170		Top right fragment of a model chariot shield, only reign hole and solar disk can be made out. Medium buff ware.	h = 3.7 cm w = 3.7 cm th = 0.8 cm hd = 0.5 cm	4G	406.16, 652.77	1	8	6	2	
AbD 87-171	IM108814	Complete copper/bronze awl.	l = 14.5 cm d = 1.0 cm	51	541.72, 448.32	3	34	0	2	Fig. 65
AbD 87-172		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 9.0 cm w = 4.5 cm th = 1.9 cm	4H	480.12, 534.29	1	33	0	1	
AbD 87-173		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 12 cm w = 4.5 cm th = 2.0 cm	51	502.19, 474.18	1	33	0	1	
AbD 87-174	IM108823	Copper/bronze chisel with square cross section.	l = 11.7 cm w = 1.4 cm th = 1.3 cm	51	557.10, 423.94	3	35	0	2	
AbD 87-175	IM108851	Copper/bronze chisel.	l = 6.5 cm w = 1.6 cm th = 1.0 cm	51	586.31, 434.59	3	35	0	2	
AbD 87-176	IM108809e	Spiral copper/bronze ring, found in two pieces.	d = 2.3 cm th = 0.5 cm hd = 1.4 cm	4I	468.02- 490.42, 429-07- 434.55	3	19	0	2	Fig. 64
AbD 87-177		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 8.8 cm w = 4.3 cm th = 1.5 cm	51	521.74, 477.51	1	33	0	1	
AbD 87-178		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 10.5 cm w = 4.0 cm th = 1.5 cm	5H	517.45, 504.07	1	33	0	1	
AbD 87-179		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 8.7 cm w = 7.0 cm th = 1.5 cm	4H	484.19, 548.14	1	33	0	1	
AbD 87-180		Fragment of smoothed and pol- ished black stone, probably part of a larger statue.	l = 8.0 cm w = 6.5 cm th = 1.5 cm	51	581.01, 452.35	20	55	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 87-181		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 10.5 cm w = 4.8 cm th = 1.6 cm	5G	574.86, 620.81	1	33	0	1	
AbD 87-182		Rim fragment of a deep conglom- erate bowl with incised concentric circles beneath the rim.	rd = 6 cm h = 5 cm th = 0.7 cm	4H	454.32, 531.73	20	1	94	2	Fig. 68
AbD 87-183	IM108836	Animal figurine with long neck, head and legs broken off. Medium buff ware.	l = 8 cm h = 6 cm th = 2 cm	4H	485.98, 522.83	1	15	31	2	
AbD 87-184	IM108844	Copper/bronze chisel with tip broken off.	l = 6.2 cm d = 0.8 cm	4H	395.53, 570.32	3	35	0	2	
AbD 87-185		Copper/bronze disk, probably a coin but no impression preserved.	d = 0.9 cm th = 0.1 cm	4I	423.54, 482.79	3	53	0	3	
AbD 87-186		Copper/bronze wire; earring??	l = 1.6 cm w = 1.7 cm d = .01 cm	4I	430.82, 480.62	3	95	0	2	
AbD 87-187	IM108806d	Limestone donut-shaped stone, crudely shaped.	l = 12 cm w = 10 cm h = 6 cm hd = 1.6 cm	51	577.70, 471.78	10	47	0	2	Fig. 72
AbD 87-188	IM108798	Shallow bowl with uneven rim and string-cut base. Medium orange-buff ware with chaff tem- per.	rd =18.4–18.7 cm bd = 5.6 cm h = 5.2 cm	61	676.72, 478.79	1	1	0	2	
AbD 87-189		Model wheel, broken. Medium orange ware.	d = 5.0 cm th = 1.2 cm hd = 0.5 cm	4G	490.63, 610.59	1	10	14	2	
AbD 87-190		Twisted copper/bronze wire.	l = 2.0 cm w = 1.8 cm h = 1.2 cm	6G	686.21, 616.10	3	24	0	2	Fig. 64
AbD 87-191		Most of a model wheel. Medium buff ware.	d = 8 cm th = 2.6 cm hd = 1.4 cm	5G	547.48, 645.89	1	10	14	2	
AbD 87-192		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.7 cm th = 0.3 cm	4I	433.84, 499.12	3	53	0	3	
AbD 87-193		Broken unbaked clay door seal- ing—impression is not clear but shows a figure in royal position and part of an inscription.	l = 2 cm w = 2.4 cm th = 1.0 cm	Sound- ing 1 Locus 1 Level 3 Feature 1	423.15, 643.10					Fig. 332
AbD 87-194	IM108789	Old Babylonian goblet with cari- nated rim. Medium buff ware with chaff temper.	rd = 6.2 cm $bd = 5 cm$ $h = 30 cm$	4H	424.34, 595.03	1	2	0	2	Fig. 50
AbD 87-195		Fragment of a twisted black glass bracelet, round in cross section.	l = 2.8 cm d = 0.55 cm	5G	556.55, 647.39	25	20	81	3	Fig. 70
AbD 87-196		Spiral copper/bronze ring.	d = 1.3 cm th = 0.6 cm hd = 0.5 cm	5G	577.99, 623.37	3	19	0	2	
AbD 87-197		Sherd of a vessel of off-white quartzite with brown streaks.	l = 5 cm w = 3.5 cm th = 0.8 cm	6H	625.72, 527.03	27	1	0	2	
AbD 87-198		Discoid bead of black stone.	d = 0.6 cm h = 0.1 cm hd = 0.2 cm	6H	621.68, 584.07	20	18	0	2	
AbD 87-199		Fragment of a copper ring.	l = 1.9 cm th = 0.3 cm	6G	686.77, 626.44	3	19	0	2	
AbD 87-200		Fragment of a cylindrical blue frit bead.	l = 1.2 cm w = 1.0 cm th = 0.3 cm	5G	544.23, 681.05	24	18	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	•
AbD 87-201		Base of a black glass vessel.	bd = 2.2 cm th = 0.8 cm	5G	536.19, 662.94	25	25	0	3	
AbD 87-202	IM108856	Fragment of a cylinder seal in grey stone, all design worn off.	d = 1.5 cm l = 1.6 cm hd = 0.3 cm	51	496.23, 489.57	20	17	0	2	
AbD 87-203	IM108830	Chunk of low quality lapis lazuli with a few drill holes, probably a test piece.	l = 2.5 cm w = 1.3 cm th = 0.7 cm	8F	883.50, 796.49	21	55	0	2	
AbD 87-204		Rectangular worked green stone with some shallow drill holes.	l = 2.2 cm w = 1.0 cm th = 0.6 cm	6H	625.55, 579.62	20	55	0	2	
AbD 87-205	IM108787	Large jar with pointed base and no neck. Medium buff ware with chaff temper.	rd = 12.5 cm h = 36.8 cm	51	580.96, 440.44	1	2	0	2	Fig. 50
AbD 87-206		Body of a green glass bottle.	bd = 3.5 cm h = 3.2 cm th = 0.3 cm	51	519.41, 491.45	25	25	0	3	
AbD 87-207	IM108808g	Base of a colorless glass bottle.	bd = 2.2 cm h = 1.8 cm th =0.3 cm	6G	649.67, 624.86	25	25	0	3	
AbD 87-208	IM108840	Nearly complete plaque showing presentation scene, god is standing on the right, faced by a male figure and supplicant goddess. Four solar discs above the figures. Medium buff ware.	l = 8 cm h = 7.1 cm th = 0.8-1.3 cm	6G	627.17, 602.63	1	14	20	2	Fig. 53
AbD 87-209		Rim fragment of a shallow lime- stone bowl with slightly out- turned rim	d = 25 cm h = 7.0 cm th = 1 cm	4H	483.73, 535.85	10	1	90	2	
AbD 87-210	IM108800c	Broken baked clay sickle. Fine overfired greenish buff ware.	l = 14 cm w = 5.5 cm th = 1.5 cm	4H	449.63, 556.54	1	33	0	1	
AbD 87-211	IM108812	Broken chlorite spacer bead with 7 holes preserved.	l = 2.5 cm h = 0.9 cm th = 0.4 cm hd = 0.2 cm	6H	632.33, 570.26	22	18	0	2	Fig. 70
AbD 87-212	IM108842	Nude female figurine, broken at waist and upper thighs. Incised decoration including decorative belt. Medium buff ware.	l = 3.1 cm w = 3.3 cm th = 1.2	51	493.77, 487.20	1	15	33	2	Fig. 52
AbD 87-213	IM108853	Badly worn chlorite cylinder seal, showing a crude presentation scene. Seal was recut.	d = 1.0 cm l = 2.0 cm hd = 0.4 cm	4F	471.45, 709.75	22	17	65	2	Fig. 69
AbD 87-214	IM108835	Badly worn chlorite cylinder seal, the only part of the design that can be made out is what may be part of a griffin.	d = 1.4 cm l = 2.5 cm hd = 0.4 cm	6H	599.29, 508.40	22	17	0	2	
AbD 87-215	IM108819	Top half of a human figurine with flat top to head and only impres- sions for eye. Arms and figure below waist broken off. Front torso has wedge shaped impressions to indicate clothing, rear is plain except for one applique strip over one shoulder. Of medium buff ware.	l = 4.7 cm w = 2.8 cm th = 1.8 cm	51	531.27, 494.52	1	15	35	2	Fig. 52
AbD 87-216	IM108815	Model chair back showing shal- low architectural pattern.	l = 4.4 cm w = 4.6 cm th = 1.0 cm	7E	789.78, 852.82	1	11	41	2	Fig. 54
AbD 87-217	IM108855	Chip of a chlorite cylinder seal, chip too small for design to be made out.	l = 1.5 cm w = 1.1 cm th = 0.3 cm hd = .6 cm	4I	424.81, 482.85	22	17	0	2	

Object #	IM #	Description	Size	Square	Findspot		Co	ding		Ref
						Mat	Obj	Dec	Date	-
AbD 87-218	IM108791	Old Babylonian goblet. Medium cream ware with chaff temper.	rd = 9.2 cm bd = 6 cm h = 20.9 cm	51	598.64, 479.01	1	2	0	2	Fig. 50
AbD 87-219		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 8.3 cm w = 3.2 cm th = 1.1 cm	6H	614.40, 519.22	1	33	0	1	
AbD 87-220		One half of a model wheel. Medium orange ware with chaff temper.	d > 9.8 cm th = 2.2 cm hd = 1.6 cm	6G	603.26, 604.19	1	10	14	2	
AbD 87-221		Copper/bronze arrowhead with tip broken off.	l = 2.4 cm w = 2.0 cm th = 0.4 cm	4I	469.34, 481.37	3	38	0	2	Fig. 66
AbD 87-222	IM108810a	Round carnelian bead, flattened.	d = 0.9 cm h = 0.6 cm hd = 0.1 cm	5H	591.49, 606.42	12	18	0	2	
AbD 87-223		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 10.2 cm w = 4.9 cm th = 1.4 cm	4I	437.34, 523.23	1	33	0	1	
AbD 87-224		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 10.2 cm w = 4.5 cm th = 1.6 cm	4I	463.96, 463.09	1	33	0	1	
AbD 87-225		One half of a limestone macehead, found in two pieces, chipped.	d = 5.3 cm h = 3.0 cm hd = 2.0 cm	51	515.56- 519.98, 417.35- 426.71	10	52	0	2	Fig. 73
AbD 87-226		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 10.0 cm w = 2.5 cm th = 1.8 cm	4H	484.78, 533.66	1	33	0	1	
AbD 87-227		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 9.6 cm w = 4.6 cm th = 2.0 cm	4F	416.12, 735.12	1	33	0	1	
AbD 87-228		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 13.0 cm w = 2.8 cm th = 1.8 cm	4H	454.81, 519.35	1	33	0	1	
AbD 87-229		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 10.0 cm w = 4.5 cm th = 1.0 cm	4H	446.08, 558.61	1	33	0	1	
AbD 87-230		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 9.5 cm w = 3.0 cm th = 1.3 cm	4I	487.41, 483.50	1	33	0	1	
AbD 87-231		Broken model wheel. Medium orange ware.	d = 8 cm th = 2.4 cm hd = 1.5 cm	5G	573.69, 622.10	1	10	14	2	
AbD 87-232		Broken shell ring.	d = 2.8 cm th = 0.4 cm hd = 2.0 cm	6H	602.05, 587.95	30	19	0	2	
AbD 87-233		Fragment of a copper/bronze blade with one of the hafting holes preserved.	l = 3.0 cm w = 1.8 cm th = 0.2 cm hd = 0.6 cm	4I	449.78, 484.60	3	29	0	2	
AbD 87-234		Pierced quartzite whetstone or palette, broken, roughly triangular in shape.	l = 6.0 cm w = 3.5 cm th = 1.0 cm hd = 0.5 cm	4I	494.19, 478.02	11	51	0	2	
AbD 87-235		Broken macehead fragment made of fossiliferous limestone.	d = 6.0 cm h = 2.5 cm	4F	467.43, 714.20	10	52	0	2	Fig. 73
AbD 87-236	IM108825	Baked clay conical spindle whorl. Fine buff ware.	d = 3.8 cm h = 1.4 cm hd = 0.9 cm	4F	417.59, 793.99	1	50	0	2	Fig. 62

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 87-237		Copper/bronze fish hook, barb broken off, end flattened for attachment to the line.	l = 3.0 cm w = 1.0 cm th = 0.2 cm	4I	470.28, 489.68	3	36	0	2	Fig. 66
AbD 87-238		Shaft fragment of a copper/bronze pin, tapers slightly to one end with a square cross-section.	l = 4.5 cm w = 0.7 cm th = 0.5 cm	4F	448.72, 728.02	3	39	0	2	
AbD 87-239		Most of a model wheel. Medium buff ware with chaff temper.	d = ca 11 cm th = 2.7 cm hd = 1.6 cm	4H	404.99, 557.79	1	10	14	2	
AbD 87-240		Thick copper/bronze blade, bro- ken on one end and tapered towards the other, which then flares and is blunted. Possibly the end of a chisel.	l = 6.0 cm w = 1.8 cm th = 0.7 cm	4F	475.22, 708.08	3	35	0	2	Fig. 65
AbD 87-241		One half of a copper/bronze ring.	d = 2.5 cm th = 0.3 cm hd = 1.7 cm	51	511.98, 488.87	3	19	0	2	
AbD 87-242	IM108800d	Broken baked clay sickle. Fine overfired greenish buff ware.	l = 10.5 cm w = 4.7 cm th = 1.9 cm d = 1.8 cm (handle)	61	652.54, 428.53	1	33	0	1	
AbD 87-243		Model chariot base. Medium orange ware with chaff temper.	l = 6.4 cm w = 7.0 cm h = 4.3 cm hd = 0.7, 0.9 cm	4G	432.14, 653.05	1	9	0	2	
AbD 87-244		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 8.3 cm w = 2.3 cm th = 2.0 cm	4I	472.18, 474.79	1	33	0	1	
AbD 87-245		Quartzite whetstone, roughly tri- angular in shape with several fac- ets.	l = 9.5 cm w = 2.8 cm th = 1.1 cm	4I	481.88, 475.42	11	46	0	2	Fig. 73
AbD 87-246		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 8.5 cm w = 4.5 cm th = 1.1 cm	4I	474.03, 463.13	1	33	0	1	
AbD 87-247		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 8.0 cm w = 4.0 cm th = 2.0 cm	4I	433.65, 473.82	1	33	0	1	
AbD 87-248		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 6.0 cm w = 5.0 cm th = 0.9 cm	6H	643.10, 562.64	1	33	0	1	
AbD 87-249		One third of a limestone donut- shaped stone.	d = 14 cm h = 4.5 cm hd = 4.5 cm	4F	419.62, 745.48	10	47	0	2	
AbD 87-250		Tip of a copper/bronze pin.	l = 3.1 cm d = 0.5 cm	4F	455.76, 730.50	3	39	0	2	
AbD 87-251	IM108833	Fragment of a limestone mortar.	l = 14 cm w = 7.5 cm h = 8.5 cm	4H	472.66, 535.05	10	42	0	2	Fig. 75
AbD 87-252		Worn plaque showing male fig- ure, bottom of legs broken off. Medium buff ware.	h = 9.3 cm w = 5.8 cm th = 0.8 cm	4I	479.59, 473.48	1	14	19	2	Fig. 53
AbD 87-253		Hub fragment of a model wheel. Medium buff ware with sand tem- per.	l = 5 cm w = 4 cm th = 3.5 cm hd = 0.5 cm	4I	492.28, 508.76	1	10	14	2	
AbD 87-254	IM108795a	Fragment of a large ceramic tray with impressed decoration on the top. Medium buff ware with chaff temper.	l = 17.5 cm w = 17.0 cm th = 3.3 cm	6G	691.62, 628.51	1	4	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 87-255		Eroded model wheel. Medium buff ware with chaff temper.	d = 7.4 cm th = 3.7 cm hd = 0.8 cm	6G	647.17, 607.04	1	10	14	2	
AbD 87-256		Broken copper bowl, found in 41 fragments. Complete profile can be reconstructed.	d = 12 cm h = 2.5 cm th = 0.2 cm	6H	604.41, 544.96	3	1	0	2	Fig. 63
AbD 87-257		Model wheel. Medium buff ware.	d = 5 cm th = 2.7 cm hd = 0.6 cm	5H	544.77, 576.64	1	10	14	2	
AbD 87-258	IM108821	Two rim fragments of a closed vessel in banded black and white marble.	rd = 5 cm h = 7 cm th = 0.7 cm	61	625.45, 454.20	20	3	95	2	Fig. 68
AbD 87-259		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 8.8 cm w = 3.2 cm th = 1.7 cm	6H	620.82, 512.40	1	33	0	1	
AbD 87-260		Broken and eroded model wheel. Medium orange ware.	d = ca 10 cm th = 3.0 cm hd = 1.3 cm	4H	406.74, 550.52	1	10	14	2	
AbD 87-261		One third of a model wheel. Medium buff ware.	d = 20 cm th = 7 cm hd = 3.5 cm	51	504.42, 489.85	1	10	13	2	
AbD 87-262		Broken shell ring.	d = 2.5 cm th = 0.4 cm hd = 2.0 cm	61	596.38, 444.65	31	19	0	2	
AbD 87-263	IM108809c	Spiral copper/bronze ring.	d = 2.5-2.6 cm th = 0.9 cm hd = 1.5 cm	4F	472.77, 706.17	3	19	0	2	
AbD 87-264	IM108794	Fragment of a three-legged ceramic table, one leg and part of the top preserved. Finger impres- sions on the underside of the top. Medium buff ware with chaff tem- per.	d = 23 cm h = 8.4 cm th = 2.6	4G	412.60, 697.33	1	5	0	2	Fig. 51
AbD 87-265		Chip of a lapis lazuli cylinder seal, only a lunar crescent and the head of a god are preserved.	l = 0.85 cm w = 0.65 cm th = 0.2 cm	6G	640.40, 633.21	21	17	0	2	
AbD 87-266		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 7.85 cm w = 5.5 cm th = 1.84 cm	6H	632.39, 512.49	1	33	0	1	
AbD 87-267		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 7.02 cm w = 2.18 cm th = 1.26 cm	61	603.19, 440.13	1	33	0	1	
AbD 87-268		Most of a model wheel. Medium orange ware.	d = 12 cm th = 4.8 cm hd = 3 cm	51	596.40, 477.72	1	10	13	2	
AbD 87-269	IM108824	Very eroded plaque with a figure, perhaps male, visible. Medium buff ware.	h = 10.88 cm w = 5.88 cm th = 1.2 cm	11I	1101.11, 436.82	1	14	19	2	
AbD 87-270	IM108784	Half size head of a human statue. Back of the head broken off, face, especially nose, damaged. Part of neck preserved. Neck was pierced. Coarse orange to buff ware with chaff temper, grey core.	l = 13.0 cm w = 8.0 cm h = 8.1 cm	3J	307.97, 332.85	1	16	51	2	Fig. 57
AbD 87-271		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 8.0 cm w = 3.0 cm th = 1.8 cm	51	595.24, 444.29	1	33	0	1	
AbD 87-272	IM108784	Fragment of a head of a human statue. Only the left ear is pre- served, marked by no more than a hole. Coarse buff to orange ware with chaff temper.	l = 7.5 cm w = 7.1 cm h = 8.0 cm	ЗJ	304.39, 330.96	1	16	51	2	Fig. 57

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 87-273		One third of a limestone donut- shaped stone.	l = 7.4 cm w = 5.3 cm h = 4.8 cm	6I	625.46, 433.41	10	47	0	2	
AbD 87-274	IM108784	Lower half of a human foot of a statue. Toes quite well modeled. Coarse buff ware with chaff temper.	l = 9.3 cm w = 8.8 cm h = 4.3 cm	3Ј	307.22, 328.70	1	16	50	2	Fig. 58
AbD 87-275	IM 108806a	Limestone donut-shaped stone, badly chipped.	d = 9.4 cm h = 3.4 cm hd = 2.3 cm	61	619.88, 484.67	10	47	0	2	
AbD 87-276	IM108784	Life-size human foot, toes, ankle and most of upper foot broken off. Coarse buff ware with chaff temper and grey core.	l = 19.1 cm w = 9.1 cm h = 4.9 cm	3J	299.48, 331.15	1	16	50	2	Fig. 58
AbD 87-277		Broken baked clay sickle. Fine overfired greenish buff ware.	l = 7.57 cm w = 4.15 cm th = 1.34 cm	6I	638.69, 487.11	1	33	0	1	
AbD 87-278	IM108784	Lower half of a foot to a human statue, standing on a platform. Coarse buff ware with chaff tem- per.	l = 10.8 cm w = 8.0 cm h = 4.7 cm	2J	296.64, 326.81	1	16	50	2	Fig. 58
AbD 87-279	IM108784	Largely intact life size human foot and ankle from a statue. Well mod- eled, underside of foot has mod- elled arch. Medium buff ware with chaff temper, possible traces of red slip or paint on upper surface of foot.	l = 22 cm w = 8.8 cm h = 12.2 cm	3J	302.31, 333.04	1	16	50	2	Fig. 57
AbD 87-280	IM108784	Hoof of a horse statue. No evi- dence for an underlying platform preserved. Coarse buff ware with chaff temper. Foot was pierced.	l = 8.6 cm w = 9.5 cm h = 5.5 cm hd = 2.2 cm	3Ј	302.50, 329.26	1	16	55	2	Fig. 59
AbD 87-281	IM108785	Lower portion of one leg of a life- size statue of a horse, hoof is on a platform. Leg is hollow. Coarse buff ware with chaff temper	l = 20.3 cm h = 33.4 cm th = 12.1 cm hd = 3.5 cm	3J	308.54, 334.36	1	16	55	2	Fig. 59
AbD 87-282		Platform and rear paw to a lion or dog statue. Traces of location of front paw visible on platform. Coarse buff ware with chaff tem- per.	l = 11.7 cm w = 10.6 cm h = 4.9 cm	3J	309.11, 330.21	1	16	53	2	Fig. 59
AbD 87-283		Front part of a forepaw of a lion statue. No evidence for a support- ing platform. Coarse buff ware with chaff temper.	l = 7.7 cm w = 10.0 cm th = 3.9 cm	3J	299.48, 327.75	1	16	53	2	Fig. 59
AbD 87-284		Three fragments of terracotta stat- uary, perhaps part of the bottom of a skirt. Pieces are perforated. Coarse buff ware with chaff tem- per.	th = 1.8 cm d = ca 47 cm (skirt) hd = 1.5 cm	3J	300.61– 310.81, 329.64– 330.40	1	16	57	2	Fig. 61
AbD 87-285	IM108784a,b	Two undecorated body fragments of terracotta statuary, one perhaps the breast of a horse. Pieces are perforated. Coarse buff ware with chaff temper.	l = 22 cm w = 11.5 cm th = 1.5 cm hd = 1.4 cm	3J	300.80– 306.84, 330.58– 331.72	1	16	57	2	Fig. 61
AbD 87-286	IM108786	Six fragments of feet of human statues. None have preserved plat- forms. Where ankle fragments are preserved they are perforated. Coarse orange to buff ware with chaff temper and sometimes a grey core.	Ankle widths vary from 8 to 5 cm, the rest of the feet are to scale.	3J	296.83– 311.37, 326.24– 334.55	1	16	50	2	Fig. 57

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 87-287	IM1088785	Twenty-three fragments of miscel- laneous limb, base and body frag- ments of terracotta statues— probably mostly human. Mostly pierced. Coarse orange to buff ware with chaff temper., some with grey cores.		2J—3J	297.59– 311.75, 326.24– 336.06,	1	16	56	2	Fig. 61
AbD 87-288	IM108809a	Broken baked clay sickle. Fine overfired greenish buff ware.	l = 6.0 cm w = 3.3 cm th = 1.6 cm	51	592.55, 453.12	1	33	0	1	
AbD 87-289	IM108807c	Ovoid hematite balance weight. Weight = 8.2 gm.	l = 3.3 cm d = 0.9 cm	4F	480.04, 768.32	13	48	0	2	Fig. 71
AbD 87-290		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.2 cm th = 0.2 cm	61	637.01, 432.18	3	53	0	3	
AbD 87-291	IM108820	Most of a copper/bronze pin, head broken off.	l = 13.0 cm d = 0.66 cm	4H	405.22, 556.09	3	39	0	2	Fig. 65
AbD 87-292	IM108818	Nude female figurine fragment, broken at waist and missing head. Hands are raised to the breasts, and a decorative belt is added. Medium buff ware.	l = 5.92 cm w = 5.18 cm th = 1.76 cm	61	623.25, 512.22	1	15	33	2	
AbD 87-293		Curved fragment of copper/ bronze, probably part of a bracelet	d = 7 cm th = 0.3–0.4 cm	6I	623.35, 459.44	3	20	0	2	
AbD 87-294	IM108832	Copper/bronze female bust, hol- lowed out in back, with a slight plinth.	l = 7.8 cm w = 7.6 cm th = 0.6-1.8 cm	4D	442.92, 946.47	3	16	51	3	Fig. 64
AbD 87-295		Either a copper/bronze hinge or perhaps part of a buckle.	l = 9.9 cm w = 5.2 cm th = 2.4 cm	51	581.95, 452.35	3	90	0	2	Fig. 65
AbD 87-296	IM108809g	Spiral copper/bronze ring.	d = 2.6 cm th = 0.9 cm hd = 1.5 cm	51	581.92, 452.22	3	19	0	2	
AbD 87-297	IM108809f	Spiral copper/bronze ring.	d = 2.8 cm th = 0.4 cm hd = 1.8 cm	51	581.87, 452.29	3	19	0	2	
AbD 87-298		Spiral copper/bronze ring.	d = 2.5 cm th = 0.8 cm hd = 1.4 cm	51	581.85, 452.20	3	19	0	2	
AbD 87-299		Most of a spiral copper/bronze ring.	d = 2.3 cm th = 1.0 cm hd = 1.4 cm	51	582.00, 452.17	3	19	0	2	
AbD 87-300		One half of a copper/bronze ring.	d = 3.0 cm th = 0.6 cm hd = 1.8 cm	51	581.99, 452.26	3	19	0	2	
AbD 87-301		Tip of a copper/bronze pin.	l = 3.0 cm d = 0.3 cm	51	581.93, 452.27	3	39	0	2	
AbD 87-302	IM108809i	Spiral copper/bronze ring.	d = 2.6 cm th = 0.5 cm hd = 1.78 cm	6I	662.71, 480.35	3	19	0	2	
AbD 87-303		One half of a limestone donut- shaped stone.	d = 9.1 cm h = 4.5 cm hd = 2.7 cm	4F	466.00, 780.12	20	47	0	2	
AbD 87-304	IM108808i	Eroded model wheel. Medium orange ware with chaff temper.	d = 6.4 cm th = 3.25 cm hd = 0.6 cm	61	637.23, 488.81	1	10	14	2	
AbD 87-305		Rear portion of a model chariot base. Medium orange ware with chaff temper.	l = 7.8 cm w = 8.4 cm h = 6.05 cm hd = 1.0 cm	4F	437.83, 729.06	1	9	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 87-306		Rim and base fragments of a cop- per pot, the two pieces do not join but were almost certainly part of the same vessel.	rd = 13 cm bd = 6.0 cm th = 0.1-0.2 cm	51	549.73, 435.75	3	1	0	2	Fig. 63
AbD 87-307		Discoid shell bead.	d = 0.8 cm th = 0.1 cm hd = 0.2 cm	61	677.10, 447.99	30	18	0	2	
AbD 87-308	IM108797	Shallow bowl with carinated rim and string-cut base. Medium ware with grit temper.	rd = 13 cm bd = 4.4 cm h = 4.1 cm	51	511.11, 487.94	1	1	0	2	
AbD 87-309		Fragment of a limestone mortar.	d = 18 cm h = 13 cm th = 4 cm	51	543.90, 482.97	20	42	0	2	
AbD 87-310	IM108783	Stamped brick with an inscription of Amar-Sin, broken.	l = 34 cm w—34 cm	4H	459.21, 541.38	1	28	3	2	
AbD 87-311	IM108783	Stamped brick with an inscription of Amar-Sin, broken	l = 34 cm w = 34 cm	Findspot unknown		1	28	3	2	
AbD 87-312	IM108783	Stamped brick with an inscription of Amar-Sin, broken.	l = 34 cm w = 34 cm	51	521.76, 458.72	1	28	3	2	
AbD 88-1	IM113906	Greenstone celt.	l = 8.1 cm w = 5.3 cm th = 2.1 cm	8F	809.10, 731.34	20	32	0	2	Fig. 73
AbD 88-2	IM113907	One half of a limestone donut- shaped stone.	d = 8 cm $h = 4 cm$ $hd = 2 cm$	8G	858.77, 660.97	10	47	0	2	
AbD 88-3	IM113908	Model wheel, eroded. Medium buff ware with chaff and grit tem- per.	d > 9 cm th = 2.5 cm hd = 0.8 cm	8F	872.55, 753.25	1	10	14	2	
AbD 88-4	IM113909	Prismatic flint core with some cor- tex remaining on one side.	l = 7.3 cm w = 3.8 cm th = 3.2 cm	7K	795.39, 256.08	18	31	0	2	Fig. 74
AbD 88-5	IM103910	Very worn nude female plaque with head and feet broken off. Fine buff ware with fine black grit temper.	h = 8 cm w 3.2 cm th = 1.8 cm	3Ј	300.95, 342.23	1	14	16	2	
AbD 88-6	IM103911	Ceramic lid. Medium greenish- buff ware with grit temper.	d = 10.1 cm h = 3.7 cm	7C	772.38, 1021.85	1	4	0	2	
AbD 88-7	IM113912	Complete model wheel. Medium orange ware with fine grit and chaff temper and cream slip.	d = 10 cm th = 2.1 cm hd = 2 cm	4G	442.29, 638.88	1	10	13	2	
AbD 88-8	IM113913	Nude female plaque, feet and area above waist broken off. Medium buff ware.	h = 6.3 cm w = 4 cm th = 1.3 cm	6G	653.09, 629.67	1	14	16	2	
AbD 88-9	IM113914	Lower half of a half-size human foot. Toes only crudely modeled. Coarse orange ware with chaff temper.	l = 7.0 cm w = 6.0 cm th = 2.8 cm	3J	310.05, 326.05	1	16	50	2	Fig. 58
AbD 88-10	IM1113915	Animal figurine with head broken off. Medium orange ware with copious black temper.	l = 6.7 cm h = 3.1 cm w = 3.55 cm	4H	424.37, 523.70	1	15	31	2	
AbD 88-11	IM113916	Pierced double axe of diorite, bro- ken.	l = 5.9 cm w = 2.8 cm h = 5.1 cm hd > 1.3 cm	91	928.56, 452.68	20	32	0	2	Fig. 73
AbD 88-12	IM113917	One half of a limestone donut- shaped stone.	d = 11.2 cm h = 5.5 cm hd = 2 cm	7F	705.01, 748.03	10	47	0	2	
AbD 88-13	IM113918	One third of a model wheel. Medium buff ware.	d = 17 cm th = 5 cm hd = 3.4 cm	5G	559.33, 613.60	1	10	13	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 88-14	IM113919	Eroded model wheel. Medium buff ware	d > 7.2 cm th = 3 cm hd = 0.8 cm	3Н	387.67, 570.60	1	10	14	2	
AbD 88-15		Joined to AbD 88-255								
AbD 88-16	IM113921	Badly eroded model wheel with no rim preserved. Medium orange ware with grit and chaff temper.	d > 7.8 cm th = 2.8 cm hd = 1.6 cm	7F	719.49, 740.03	1	10	14	2	
AbD 88-17	IM113922	Model chariot shield, broken at base. Design shows a pair of lion sickles with solar disk and crescent between them. Medium buff ware.	h = 9.2 cm w = 5.8 cm th = 1.8 cm hd = 0.4 cm	3Н	338.74, 639.77	1	8	8	2	
AbD 88-18	IM113923	Two thirds of a limestone donut- shaped stone.	d = 11.5 cm h = 3.8 cm hd = 2.8 cm	3Н	368.91, 538.70	10	47	0	2	
AbD 88-19	IM113924	Model chariot base, very eroded. Medium orange ware.	l = 6.5 cm w = 6.1 cm h = 3.2 cm hd = 1.2 cm	2H	285.21, 513.21	1	9	0	2	
AbD 88-20	IM113925	Hub portion of a model wheel. Medium pinkish-buff ware.	l = 7.6 cm w = 5.9 cm th = 2.4 cm	3Н	385.85, 570.65	1	10	14	2	
AbD 88-21	IM113926	Old Babylonian goblet. Medium buff ware with chaff temper.	rd = 11.5 cm bd = 5.5 cm h = 24.3 cm	3Н	319.37, 571.45	1	2	0	2	
AbD 88-22	IM113927	One half of a model chariot wheel. Medium buff ware with chaff tem- per.	d = 10.2 cm th = 2.2 cm hd = 1.9 cm	3F	376.49, 735.03	1	10	13	2	
AbD 88-23	IM113928	Broken model wheel. Medium buff ware.	d = 12 cm th = 2.7 cm hd = 0.7 cm	4H	428.71, 585.90	1	10	14	2	
AbD 88-24	IM113929	One third of a model wheel. Medium orange ware.	d = 9.8 cm th = 2.8 cm hd = 1.2 cm	5F	540.64, 783.08	1	10	14	2	
AbD 88-25	IM113930	Eroded model wheel with no rim preserved. Medium pinkish-buff ware with chaff temper.	d > 6.1 cm th = 2.1 cm hd = 1.0 cm	9F	945.73, 700.37	1	10	14	2	
AbD 88-26	IM113931	One half of a limestone donut- shaped stone.	d = ca. 12 cm th = 4.8 cm hd = 2.2 cm	7G	753.48, 600.37	20	47	0	2	
AbD 88-27	IM113932	Hollow ceramic form, perhaps portion of terracotta statuary. Form unclear but resembles the breast of a bird with the head and rest of body broken off, pierced. Of medium buff ware with fine black grit temper.	l = 9.2 cm w = 8.4 cm h = 5.7 cm th = 0.3-1.5 cm hd = 0.5 cm	3Н	337.71, 570.26	1	16	58	2	Fig. 60
AbD 88-28	IM113933	Baked clay conical spindle whorl. Medium greenish-buff ware with fine grit temper.	d = 4.2 cm h = 1.7 cm hd = 0.7 cm	4I	497.95, 464.20	1	50		2	Fig. 62
AbD 88-29	IM113934	Model chariot wheel. Medium orange ware.	d = 5.5 cm th = 2.5 cm hd = 0.6 cm	8K	800.61, 296.86	1	10	14	2	
AbD 88-30	IM113935	Largely complete model wheel. Medium orange ware with cream slip.	d = 9.6 cm th = 2.9 cm hd = 1.7 cm	4H	489.57, 544.87	1	10	14	2	
AbD 88-31	IM113936	Model wheel. Medium orange ware with cream slip.	d = 10.6 cm th = 2.3 cm hd = 1.1 cm	3G	357.31, 631.58	1	10	14	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 88-32	IM113937	Single bladed axe of fine buff ware with fine grit temper.	l = 15.3 cm w = 10.0 cm th = 4.2 cm hd = 2.3 cm	4H	477.11, 598.56	1	32	0	2	
AbD 88-33	IM113938	Quartzite cuboid with traces of wear on two sides.	l = 5.9 cm w = 5.4 cm h = 4 cm	6H	608.16, 577.61	20	41	0	2	
AbD 88-34	IM113939	Copper/bronze sickle blade, haft- ing end broken off.	l = 8.1 cm w = 3.4 cm th = 0.35 cm	3F	375.00, 608.85	3	33	0	2	Fig. 65
AbD 88-35	IM113940	Top half of badly eroded model chariot shield, with only vague traces of a design remaining. Medium orange ware with chaff temper.	h = 6.0 cm w = 5.0 cm th = 1.8 cm hd = 0.5 cm	3Н	376.52, 570.85	1	8	0	2	
AbD 88-36	IM113941	Very eroded model chariot shield with top and bottom broken off. Slight traces of pair of lion sickles can be made out. Medium orange ware	h = 8.1 cm w = 4.8 cm th = 1.7 cm hd = ca .5 cm	3G	362.30, 606.74	1	8	8	2	
AbD 88-37	IM113942	Most of a model wheel, all edges broken off. Medium buff ware with fine black grit temper.	d > 9.5 cm th = 3.2 cm hd = 1.1 cm	4H	400.55, 550.36	1	10	14	2	
AbD 88-38	IM113943	Broken model wheel. Medium buff ware with chaff temper.	d = 10 cm th = 3.0 cm hd = 1.0 cm	3Н	316.09, 577.90	1	10	14	2	
AbD 88-39	IM113944	Double axe of baked clay, upper portion broken off. Highly fired buff ware with fine black grit tem- per.	l = 9.5 cm w = 3.7 cm h = 4.2 cm hd = 1.7 cm	3G	397.98, 681.28	1	32	0	2	Fig. 62
AbD 88-40	IM113945	One half of a limestone donut- shaped stone, irregular.	d = 12 cm th = 4.5–5.5 cm	4I	456.12, 456.45	10	47	0	2	
AbD 88-41	IM113946	One third of a model wheel. Medium pinkish-orange ware with fine grit temper.	d = 7.5 cm th = 2 cm hd = 0.9 cm	3H	394.53, 532.43	1	10	14	2	
AbD 88-42	IM113947	Axle portion of model chariot base. Medium orange ware with chaff temper.	l = 5.6 cm w = 6.6 cm h = 3.2 cm hd = 0.8 cm	3Н	387.30, 561.54	1	9	0	2	
AbD 88-43	IM113948	Model wheel. Hard gritty ware.	d = 6.6 cm th = 3.1 cm hd = 0.6 cm	3H	353.99, 540.62	1	10	14	2	
AbD 88-44	IM113949	Broken model wheel. Medium orange ware with chaff temper.	d > 11 cm th = 3.1 cm hd = 2.8 cm	8H	872.17, 574.39	1	10	13	2	
AbD 88-45	IM113950	Conical bead of translucent glass.	d = 1.6 cm h = 0.9 cm hd = 0.5 cm	11F	1157.73, 782.51	25	18	0	3	
AbD 88-46	IM113951	One half of a model wheel. Medium buff ware with chaff tem- per.	d = ca 9.7 cm th = 2.3 cm hd = 1.5 cm	4G	437.05, 668.16	1	10	14	2	
AbD 88-47	IM113952	Perforated quartzite weight, more or less rectangular.	l = 8.3 cm w = 7.3 cm th = 1.6 cm	North- west por- tion of the site		11	55		2	
AbD 88-48	IM113953	Base of a black and white granite bowl.	bd = 3.4 cm h = 3.1 cm th = 0.9 cm	31	332.33, 434.36	16	1	92	2	

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AbD 88-49	IM113954	Model chariot base, rear chipped. Medium orange ware with chaff temper.	l = 8.2 cm w = 8.3 cm h = 4 cm hd = 1.1, 0.8 cm	3Н	390.37, 590.70	1	9	0	2	
AbD 88-50	IM113955	Model wheel. Medium orange ware with chaff temper.	d = 6.1 cm th = 3.1 cm hd = 0.7 cm	3G	348.72, 660.27	1	10	14	2	
AbD 88-51	IM113956	Half of an eroded model wheel. Medium orange ware with chaff temper and buff slip.	d = 10 cm th = 3.2 cm hd = 1.0 cm	3G	393.35, 617.37	1	10	14	2	
AbD 88-52	IM113957	Model wheel with edges broken off. Medium buff ware with chaff temper.	d > 8.6 cm th = 2.2 cm hd = 1.6 cm	3Н	393.19, 560.60	1	10	14	2	
AbD 88-53	IM113958	Baked clay object—more or less in the shape of a scapula, perhaps part of a terracotta statue. Medium buff ware.	l = 15.8 cm w = 10.5 cm th = 8.5 cm	4H	448.56, 500.45	1	16	58	2	Fig. 60
AbD 88-54	IM113959	Model wheel with no rim pre- served. Medium pinkish-orange ware with buff slip.	d > 7.4 cm th = 2.8 cm hd = 1.0 cm	9D	980.29, 981.19	1	10	14	2	
AbD 88-55	IM113960	Model chariot base. Medium greenish buff ware with chaff tem- per.	l = 5.5 cm w = 7.7 cm h = 2.2 cm hd = 1.25 cm	101	1000.12, 488.18	1	9	0	2	
AbD 88-56	IM113961	Two chips of a hematite cylinder seal which just join. Design was probably of a presentation scene, but only two figures and the feet of another are preserved.	d = 1.3 cm h = 2.7 cm hd = 0.5 cm	3F	352.86, 754.68	13	17	67	2	Fig. 69
AbD 88-57	IM113962	Fragment of a black glass bracelet with a white trail on exterior, cir- cular in cross-section.	l = 4.8 cm w = 0.7 cm th = .5 cm	11E	1100.80, 850.60	25	20	83	3	
AbD 88-58	IM113963	Model chariot base. Medium orange ware.	l = 7.2 cm w = 5.8 cm h = 3.4 cm hd = 1.1 cm	3Н	312.12, 579.16	1	9	0	2	
AbD 88-59	IM113964	Broken and eroded model wheel. Medium pinkish buff ware.	d > 5.5 cm th = 2.1 cm hd = 0.8 cm	3G	377.75, 680.04	1	10	14	2	
AbD 88-60	IM113965	Model wheel with no edges pre- served. Medium buff ware with chaff and fine grit temper.	d > 9 cm th = 2.2 cm hd = 1.0 cm	4G	458.01, 630.01	1	10	14	2	
AbD 88-61	IM113966	End of a pestle of black and white granite.	d = 4.3 cm l = 5.5 cm	5G	579.91, 652.87	16	43	0	2	Fig. 75
AbD 88-62	IM113967	One half of a model chariot wheel. Medium buff ware.	d = ca 10.4 cm th = 3.3 cm hd = 1.4 cm	3Н	381.49, 581.82	1	10	14	2	
AbD 88-63	IM113968	Half of a model wheel. Medium orange ware with chaff temper.	d = 13 cm th = 3.4 cm hd = 2.5 cm	5H	570.85, 584.97	1	10	13	2	
AbD 88-64	IM113969	One third of a model wheel. Very coarse ware with fine grit and some chaff temper.	d = 11.4 cm th = 2.8 cm hd = 1.55	3Н	336.23, 588.14	1	10	14	2	
AbD 88-65	IM113970	One half of a model wheel. Medium buff ware with grit tem- per.	d= 11.1 cm th = 3.8 cm hd = 1.6 cm	3Н	383.57, 578.23	1	10	14	2	
AbD 88-66	IM113971	Sherd of a vessel in pinkish quartz- ite.	l = 4.7 cm w = 2.7 cm th = 1.2 cm	3F	358.00, 796.35	26	1	0	2	

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AbD 88-67	IM113972	Limestone donut-shaped stone, slightly oval in shape, bottom bro- ken and eroded.	l = 9.5 cm w = 8.9 cm h = 4.7 cm hd = 3.8 cm	4E	453.55, 854.76	10	47	0	2	Fig. 72
AbD 88-68	IM113973	Male figurine fragment, hollow base, broken above waist, curled feature applied to side.	l = 5.5 cm w = 3.8 cm th = 2.5 cm	81	876.16, 477.96	1	15	32	2	
AbD 88-69	IM113974	Somewhat eroded model chariot shield, broken at bottom and top right. Design shows the god Sha- mash holding saw and rod and ring with one foot on a platform. A sun disk is to the right of his head and perhaps two dots to the left. Medium buff ware.	h = 7.3 cm w = 6.6 cm th = 1.6 cm hd = 0.5 cm	3G	345.95, 602.92	1	8	6	2	
AbD 88-70	IM113975	Quartzite cuboid (with quartz veins), two surfaces show traces of wear.	l = 4.5 cm w = 4.0 cm h = 4.1 cm	11H	1148.95, 568.35	19	41	0	2	
AbD 88-71	Coin 9115	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.7 cm th = 0.3 cm	11H	1152.16, 574.77	3	53	0	3	
AbD 88-72	IM113977	Model wheel. Medium orange ware with chaff temper.	d = 9.6 cm th = 2.6 cm hd = 1.3 cm	3Н	399.67, 558.32	1	10	14	2	
AbD 88-73	IM113978	Two thirds of a model wheel. Fine greenish-buff ware with grit temper.	d = 11.5 cm th = 3.1 cm hd = 1.4 cm	3G	333.40, 621.59	1	10	14	2	
AbD 88-74	IM113979	Quartzite cuboid with signs of wear on one edge.	l = 4.8 cm w = 4.8 cm h = 4.5 cm	3F	368.20, 771.93	20	41	0	2	
AbD 88-75	IM113980	Most of a model wheel with badly eroded edges. Medium buff ware with fine black grit temper.	d > 10.5 cm th = 3.0 cm hd = 2.2 cm	3G	354.53, 645.30	1	10	13	2	
AbD 88-76	IM113981	Top fragment of a model chariot shield showing lion mace with two dots on the left side, right side not preserved. Medium buff ware with fine grit temper.	h = 4.2 cm w = 5.3 cm th = 1.4 cm hd = 0.4 cm	3Н	313.04, 581.05	1	8	9	2	Fig. 55
AbD 88-77	IM113982	Model wheel. Very coarse buff ware with very fine grit temper.	d = 64 cm th = 1.9 cm hd = 0.85 cm	3Н	390.75, 507.86	1	10	14	2	
AbD 88-78	IM113993	Eroded model wheel with all edges broken off. Soft sandy buff ware with chaff temper.	d > 10.5 cm th = 2.2 cm hd = 1.7 cm	3Н	354.64, 529.95	1	10	13	2	
AbD 88-79	IM113994	Hub fragment of an eroded model wheel. Medium buff ware with chaff temper.	l= 4.8 cm w = 2.9 cm th = 2.7 cm hd = 1.5 cm	3F	332.67, 779.12	1	10	14	2	
AbD 88-80	IM113985	Broken model wheel. Medium buff ware with fine grit and some chaff temper.	d = 10 cm th = 3 cm hd = 0.9 cm	4H	403.00, 554.89	1	10	14	2	
AbD 88-81	IM113986	Broken model wheel. Medium orange ware with chaff temper.	d = 8.6 cm th = 2.2 cm hd = 0.8 cm	7F	716.47, 725.49	1	10	14	2	
AbD 88-82	IM113987	One half of a fossiliferous lime- stone donut-shaped stone.	l = 14 cm w = 6.5 cm h = 5 cm hd = 1.8 cm	4I	444.34, 469.64	10	47	0	2	Fig. 72
AbD 88-83	IM113988	Broken model wheel with no rim preserved. Medium buff ware with chaff temper.	d > 10.2 cm th = 3.7 cm hd = 1.2 cm	3F	374.56, 777.49	1	10	14	2	
AbD 88-84	IM113989	Broken model wheel. Medium orange ware.	d > 10.2 cm th = 2.2 cm hd = 1.0 cm	3H	369.40, 578.99	1	10	14	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 88-85	IM113990	Fragment of a limestone mortar	l = 10.6 cm w = 7 cm h = 4 cm	3H	391.46, 504.30	10	42	0	2	
AbD 88-86	IM113991	Broken model wheel. Soft sandy pinkish orange ware.	d = 10.8 cm th = 2.4 cm hd = 1.4 cm	3G	338.01, 627.78	1	10	14	2	
AbD 88-87	IM113992	Most of a model wheel. Medium buff ware with fine grit and chaff temper.	d > 10.2 cm th = 2.4 cm hd = 2 cm	3F	376.12, 757.26	1	10	13	2	
AbD 88-88	IM113993	Most of a model wheel. Medium buff ware with fine black grit tem- per.	d = 7.3 cm th = 1.6 cm hd = 1.5 cm	3Н	368.26, 568.03	1	10	14	2	
AbD 88-89	IM113994	Hub a large model wheel, applied hubs, partial line of black paint around the hub. Medium pinkish- buff ware with cream slip.	l = 11.0 cm w = 11.7 cm th = 6.5 cm hd = 4.2 cm	5B	672.92, 1116.61	1	10	13	2	Fig. 56
AbD 88-90	IM113995	Hub portion of a model wheel. Medium orange ware with fine grit and chaff temper.	l = 4.9 cm w = 5.2 cm th = 2.2 cm hd = 1.6 cm	3Н	325.13, 571.84	1	10	14	2	
AbD 88-91	IM113996	Hub of a model wheel. Medium buff ware with chaff temper.	l = 4 cm w = 3.8 cm th = 2.8 cm hd = 1.0 cm	3Н	306.30, 564.22	1	10	14	2	
AbD 88-92	IM113997	Copper/bronze bracelet with one finial—perhaps in the shape of a snake's head— preserved.	d = 4.7 cm th = 0.7 cm	9E	971.04, 897.04	3	20	0	2	Fig. 64
AbD 88-93	IM113998	One third of a model wheel, no rim preserved. Coarse greenish- buff ware with chaff temper.	d > 13 cm th = 3.4 cm hd = 1.4 cm	4H	417.56, 569.45	1	10	14	2	
AbD 88-94	IM113999	Plaque showing bottom portion of human figure facing right. Medium orange ware.	h = 5.7 cm w = 4.7 cm th = 1.5 cm	3Н	379.33, 571.32	1	14	19	2	
AbD 88-95	Coin 9614	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.2–1.4 cm th = 0.2 cm	3F	336.97, 785.23	3	53	0	3	
AbD 88-96	Coin 9613	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.4–1.5 cm th = 0.2 cm	3F	347.89, 788.78	3	53	0	3	
AbD 88-97	IM113976	Almost complete model wheel. Medium orange ware.	d = 10.5 cm th = 3.4 cm hd = 1.2 cm	8J	806.08, 347.40	1	10	14	2	
AbD 88-98	IM122600	One half of a limestone donut- shaped stone.	d = 13 cm h = 4.7 cm hd = 3 cm	7G	792.94, 637.57	10	47	0	2	
AbD 88-99	Coin 9612	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.2 cm th = 0.2 cm	3F	333.18, 796.32	3	53	0	3	
AbD 88-100	IM122601	One third of a model wheel. Medium buff ware with chaff tem- per.	d = 9 cm th = 2.9 cm hd = ca 1.1 cm	3G	338.78, 632.09	1	10	14	2	
AbD 88-101	IM122602	Broken and eroded model chariot base. Medium buff ware.	l = 6.0 cm w = 7.6 cm h = 4.9 cm hd = 1.3, 1.5 cm	3G	348.86, 687.16	1	9	0	2	
AbD 88-102	IM122603	Copper/bronze harpoon, tip and end broken off.	l = 14.7 cm w = 1.2 cm d = 1.0 cm	7J	799.54, 345.50	3	37	0	2	Fig. 66
AbD 88-103	IM122604	One third of a model wheel. Medium buff ware with heavy grit temper.	d = 11 cm th = 3.3 cm hd = 1.1 cm	3F	388.83, 753.15	1	10	14	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 88-104	IM122605	One third of a model wheel. Medium buff ware.	d = 10.8 cm th = 2.9 cm hd = 1.1 cm	3G	381.68, 642.93	1	10	14	2	
AbD 88-105	IM122606	Model wheel with chipped rim. Hard gritty buff ware.	d > 6.6 cm th = 4.1 cm hd = 1.0 cm	9G	972.37, 674.19	1	10	14	2	
AbD 88-106	IM122607	Hub fragment of a model wheel. Medium buff ware with chaff tem- per.	l = 6.8 cm w = 5.0 cm th = 2.9 cm hd = 1.4 cm	5H	570.09, 538.52	1	10	14	2	
AbD 88-107	IM122608	Rear half of a model chariot base. Medium orange ware with chaff temper.	l = 6.1 cm w = 7.5 cm h = 6.0 cm hd = 1.1 cm	3F	350.53, 723.53	1	9	0	2	
AbD 88-108	IM122609	One third of a model wheel. Medium pinkish-buff ware with heavy chaff temper.	d = 11.2 cm th = 2.2 cm hd = 1.2 cm	3F	388.14, 771.98	1	10	14	2	
AbD 88-109	IM122610	Complete model wheel. Medium buff ware with no visible temper.	d = 11.0 cm th = 2.5 cm hd = 1.4 cm	4H	415.48, 566.05	1	10	14	2	
AbD 88-110	IM122611	Broken model wheel. Medium buff ware with chaff temper.	d > 9.2 cm th = 3 cm hd = 1.1 cm	8H	880.10, 571.94	1	10	14	2	
AbD 88-111	IM122612	Curved copper/bronze rod, square in section.	l = 1.8 cm w = 0.5 cm th = 0.5 cm	3G	398.96, 603.57	3	39	0	2	
AbD 88-112	IM122613	Model chariot base, broken and eroded. Medium buff ware with chaff temper.	l = 6.5 cm w = 6.5 cm th = 3.3 cm hd = 0.8 cm	3G	357.15, 639.81	1	9	0	2	
AbD 88-113	IM122614	Model chariot shield, bottom of shield and top corners broken off. Design showing a pair of lion-sick- les with a solar disc and crescent between them. Medium greenish ware.	h = 9.1 cm w = 5.0 cm th = 2.5 cm hd = .4, 1.3 cm	3F	382.26, 787.26	1	8	8	2	Fig. 55
AbD 88-114	Coin 9611	Copper/bronze disk, probably a coin but no impression preserved.	d = 0.9 cm th = 0.3 cm	3G	349.86, 657.42	3	53	0	3	
AbD 88-115	IM122615	Copper/bronze fish hook with barb and flattened end for attach- ment to the line.	l = 4.5 cm w = 2.5 cm th = 0.4 cm	3G	373.77, 624.18	3	36	0	2	Fig. 66
AbD 88-116	IM122616	Model wheel. Medium buff ware with chaff temper.	d = 11.3 cm th = 3.5 cm hd = 1.1–1.5 cm	3G	376.15, 623.69	1	10	14	2	
AbD 88-117	IM122617	Most of the top half of a model chariot shield showing the figure of Shamash holding the rod and ring, with two solar disks on both sides of his head. Medium buff ware with chaff temper.	h = 5.5 cm w = 5.5 cm th = 2.1 cm hd = 0.6 cm	4E	448.72, 851.98	1	8	6	2	Fig. 55
AbD 88-118	IM122618	Rim fragment of a bowl in banded orange and reddish quartzite.	l = 5.0 cm w = 4.3 cm th = 0.9 cm	4E	442.38, 839.29	27	1	92	2	
AbD 88-119	Coin 9610	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.0 cm th = 0.2 cm	3E	388.11, 834.19	3	53	0	3	
AbD 88-120	IM122619	Fragment of a model wheel hub. Medium orange ware with fine grit temper.	l = 4.8 cm w = 3.1 cm th = 1.1 cm hd = 1.0 cm	3E	366.34, 815.11	1	10	14	2	
AbD 88-121	IM122620	Fragment of a badly eroded chariot base. Medium buff ware with chaff temper.	l = 5.6 cm w = 5.1 cm h = 2.3 cm	3F	393.11, 747.95	1	9	0	2	_

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 88-122	Coin 9609	Copper/bronze disk, probably a coin but no impression preserved.	d = 0.9–1.0 cm th = 0.15 cm	4E	419.59, 837.79	3	53	0	3	
AbD 88-123	IM122621	Green glass handle end, rolled back on itself.	l = 2.3 cm w = 0.8 cm th = 0.7 cm	3E	367.39, 810.33	25	20	84	3	
AbD 88-124	IM122622	Very worn female plaque with legs broken off. Medium buff ware with fine black grit temper.	h = 7.7 cm w = 4.9 cm th = 2.1 cm	4E	449.37, 892.57	1	14	16	2	
AbD 88-125	IM122623	One third of a badly eroded model wheel. Medium pinkish buff with chaff and fine grit temper.	d = ca 8 cm th = 1.9 cm hd = 1.1 cm	3F	368.58, 711.54	1	10	14	2	
AbD 88-126	Coin 9608	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.3 cm th = 0.15 cm	3E	394.34, 829.09	3	53	0	3	
AbD 88-127	IM122624	Part of a model wheel. Medium buff ware with fine grit temper.	d = 9 cm th = 2.3 cm hd = 1.6 cm	3E	396.26, 826.86	1	10	14	2	
AbD 88-128	Coin 9607	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.4–1.5 cm th = 0.2 cm	4E	436.61, 864.61	3	53	0	3	
AbD 88-129	IM122625	Badly eroded model wheel. Medium buff ware with fine grit and chaff temper.	d = 8 cm th = 2.9 cm hd = 0.8 cm	5F	544.98, 792.90	1	10	14	2	
AbD 88-130	IM122626	Fragment of a model wheel. Medium orange ware.	d = 12.4 cm th = 2.5 cm hd = 1.3 cm	4E	432.92, 870.23	1	10	14	2	
AbD 88-131	Coin 9606	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.3–1.8 cm th = 0.3 cm	5F	507.60, 795.16	3	53	0	3	
AbD 88-132	Coin 9605	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.7 cm th = 0.3 cm	4E	403.31, 860.88	3	53	0	3	
AbD 88-133	IM122627	Broken and eroded model chariot base. Medium buff ware with chaff temper.	l = 7.2 cm w = 6.1 cm h = 4.4 cm hd = 1.2 cm	6B	677.27, 1181.38	1	9	0	2	
AbD 88-134	Coin 9604	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.5 cm th = 0.3 cm	4E	438.94, 873.62	3	53	0	3	
AbD 88-135	IM122628	Broken and eroded model wheel. Medium buff ware with chaff tem- per.	d = 9.2 cm th = 2.4 cm hd = 1.4 cm	5E	523.00, 829.98	1	10	14	2	
AbD 88-136	Coin 9603	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.6 cm th = 0.3 cm	4E	437.54, 872.16	3	53	0	3	
AbD 88-137	Coin 9602	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.4 cm th = 0.3 cm	4E	416.09, 884.59	3	53	0	3	
AbD 88-138	IM122629	Large sherd of a plain alabaster bowl, complete profile preserved.	rd = 16.5 cm bd = 7.2 cm h = 4.8 cm th = 0.8 cm	3E	355.81, 823.80	15	1	92	2	Fig. 67
AbD 88-139	IM122630	Hub of a model wheel. Medium buff ware.	l = 5.8 cm w = 5.4 cm th = 3.0 cm hd = 1.5 cm	3F	358.85, 739.14	1	10	14	2	
AbD 88-140	IM122631	Model chariot shield with top and bottom broken and flaking surface. Design shows figure of Shamash holding saw and rod and ring with one foot on a platform. Medium buff ware.	h = 7.5 cm w = 5.0 cm th = 2.0 cm hd = 0.4 cm	4E	423.72, 885.97	1	8	6	2	
AbD 88-141	IM122632	Biconical baked clay weight (spin- dle whorl?) of medium buff ware with heavy grit temper.	d = 5.7 cm h = 4.6 cm hd = 0.1 cm	4E	488.30, 882.33	1	68	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	-
AbD 88-142	IM122633	A spout or perhaps the end of a wall plaque. Medium to coarse buff ware with chaff temper.	l = 7.9 cm w = 5.6 cm d = 3.7 cm hd = 1.0 cm	31	394.59, 483.85	1	15	31	2	Fig. 51
AbD 88-143	IM122634	Eroded model wheel. Medium pinkish buff ware.	d > 5.95 cm th = 2.1 cm hd = 0.7 cm	4E	467.16, 879.81	1	10	14	2	
AbD 88-144	IM122635	Chipped model wheel. Medium orange ware with chaff and small grit temper.	d = 8.8 cm th = 2.6 cm hd = 1.0 cm	31	352.21, 413.86	1	10	14	2	
AbD 88-145	IM122636	Conical green glass bead, broken at bottom.	d = 2.6 cm h = 0.8 cm hd = 0.7 cm	4E	493.87, 854.53	25	18	0	3	
AbD 88-146	IM122637	Ceramic kiln spacer in the form of a tripod, one leg broken off. Medium buff ware with fine black grit temper.	l = 5.5 cm w = 4.5 cm th = 1.2 cm	4E	450.83, 881.57	1	59	0	2	
AbD 88-147	IM114000	Sherd with part of a figure of a nude female molded on the exte- rior. Medium-coarse buff ware with chaff temper.	l = 13.5 cm w = 12 cm th = 3.1 cm	3G	369.29, 694.43	1	3	16	2	Fig. 51
AbD 88-148	IM122638	Model wheel with all edges bro- ken off. Medium orange ware with grit temper.	d > 10 cm th > 2.5 cm hd = 1.7 cm	4D	428.34, 909.72	1	10	14	2	
AbD 88-149	IM122639	Pierced limestone disc, badly chipped and broken, perhaps part of a spindle whorl.	l = 4.8 cm w = 3.9 cm th = 1.2 cm hd = 1.2 cm	4E	460.67, 853.65	10	68	0	2	
AbD 88-150	IM122640	Ceramic kiln spacer in the form of a tripod. Medium buff ware with very fine grit temper.	l = 8.3 cm h = 3.6 cm th = 1.6 cm	4E	469.95, 881.89	1	59	0	2	
AbD 88-151	IM122641	Discoid bead of black stone.	d = 0.7 cm th = 0.2 cm hd = 0.3 cm	4G	417.79, 641.53	13	18	0	2	
AbD 88-152	IM122642	Part of a rattle in the form of a bird. Neck and upper body pre- served. Medium buff ware with fine grit and rare chaff temper.	l = 6.9 cm h = 4.3 cm w = 4.2 cm	3F	370.23, 701.85	1	58	70	2	Fig. 62
AbD 88-153	IM122643	Two fragments of iron with roughly circular cross sections.	l = 3.2, 1.9 cm w = 1.0, 0.7 cm th = 0.8, 0.6 cm	3J	344.96, 308.20	5	55	0	3	
AbD 88-154	IM122644	Greenstone pendant, broken, with two holes. Incisions on sides and around holes.	l = 3.3 cm w = 1.5 cm th = 0.7 cm hd = 0.3 cm	3J	339.66, 321.28	20	21	0	2	Fig. 70
AbD 88-155	IM122645	Eroded model chariot shield, parts of top and bottom broken off. Design shows figure of Shamash with saw and with one foot on a platform and two solar disks on either side of his head. Medium orange ware with fine grit and light chaff temper.	h = 9.0 cm w = 5.0 cm th = 1.5 cm hd = 0.4 cm	3F	356.28, 741.40	1	8	6	2	
AbD 88-156	IM122646	Broken and eroded model wheel. Medium orange ware.	d = 7.3 cm th = 1.9 cm hd = 1.3 cm	3Ј	307.62, 303.07	1	10	14	2	
AbD 88-157	IM122647	Fragment of a model wheel. Coarse buff ware with chaff tem- per.	d > 8.3 cm th = 3.0 cm hd = 1.1 cm	3F	370.81, 704.99	1	10	14	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 88-158	IM122648	Animal figurine with legs broken off. Medium pink ware with fine grit temper.	l = 9.2 cm h = 4.5 cm w = 3.6 cm.	31	368.40, 402.88	1	15	31	2	
AbD 88-159	IM122649	Exceptionally poorly made foot to a human statue, with a platform beneath it. Coarse buff ware with chaff temper.	l = 18.0 cm w = 11.0 cm h = 5.0 cm	3Ј	359.92, 323.49	1	16	50	2	Fig. 58
AbD 88-160	IM122650	One half of a deep green stone bowl.	rd = 14 cm bd = 6 cm h = 8.5 cm th = 0.8–1.5 cm	7K	712.31, 277.04	20	1	91	2	
AbD 88-161	IM122651	Model chariot base. Medium orange ware with chaff temper.	l = 7.2 cm w = 8.4 cm th = 5.1 cm hd = 0.9, 1.2 cm	3G	390.56, 680.98	1	9	0	2	
AbD 88-162	Coin 9601	Copper/bronze disk with two flanges at either side.	l = 2.0 cm w = 1.6 cm th = 0.3 cm	4E	464.62, 870.05	3	24	0	2	
AbD 88-163	IM122652	Animal figurine with long neck, head and legs broken off. Medium orange ware.	l = 7.3 cm h = 3.1 cm th = 4 cm	4J	407.91, 375.53	1	15	31	2	
AbD 88-164	IM122653	Part of a probably male figurine, head, arms, base broken, badly eroded. Medium pinkish ware with fine grit temper.	l = 6.2 cm w = 2.75 cm th = 1.8 cm	31	363.81, 430.88	1	15	32	2	
AbD 88-165	IM122654	Half of a model wheel. Medium buff ware with chaff temper.	d = 9 cm th = 4.2 cm hd = 1.0 cm	2Н	272.25, 528.38	1	10	14	2	
AbD 88-166	IM122655	Fragment of a limb of a human statue. Piece is pierced. Medium orange ware with chaff temper.	l = 7.0 cm w = 5.5 cm th = 1.8 cm	3J	300.90, 336.68	1	16	56	2	
AbD 88-167	IM122656	Six fragments of iron, one larger piece and other fragments, amor- phous in shape.	l = 8.5 cm w = 2.5 cm th = 1.6 cm	4E	451.00, 872.25	5	55	0	3	
AbD 88-168	IM122657	Iron fragment, folded.	l = 3.3 cm w = 2.3 cm th = 0.8 cm	5F	514.96, 798.37	5	55	0	3	
AbD 88-169	IM122658	Badly eroded model chariot shield, both top and bottom sections bro- ken off. Design shows central pole with sun disks on both sides. Medium pinkish-buff ware with chaff temper.	h = 6.9 cm w = 5.6 cm th = 1.4 cm	4J	455.94, 396.90	1	8	9	2	Fig. 55
AbD 88-170	IM122659	Fragment of a black glass bracelet with white lozenges with black central dots on the outside, trian- gular in section.	d = 7 cm w = 0.5 cm th = 0.6 cm	31	360.28, 436.25	25	20	82	3	
AbD 88-171	IM122660	One third of a model wheel. Medium orange ware with fine grit temper.	d = 12 cm th = 3.4 cm hd = 2.5 cm	3G	367.17, 629.82	1	10	0	2	
AbD 88-172	IM122661	Two leg fragments from terracotta statuary, probably human. Coarse buff ware with chaff temper.	l = 13.5, 8.2 cm w = 8.5, 8.0 cm th = 2.0, 2.0 cm	2Ј	298.03, 326.24	1	16	56	2	
AbD 88-173	IM122662	Model wheel with all edges bro- ken off. Medium buff ware with coarse chaff temper.	d > 7 cm th = 2.5 cm hd = 1.8 cm	5G	519.38, 662.06	1	10	14	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 88-174	IM122663	Broken model wheel. Medium pinkish-orange ware with chaff temper.	d > 8.2 cm th = 2.8 cm hd = 1.25 cm	2Н	288.97, 599.30	1	10	14	2	
AbD 88-175	IM122664	Eroded model chariot shield with very top broken off. Design shows figure of Shamash with saw and rod and ring with one foot on a platform. A solar disk on either side of his head. Medium orange ware with fine grit and rare chaff temper.	h = 10.0 cm w = 5.7 cm th = 2.8 cm hd = 1.5, 0.5 cm	3F	390.11, 781.19	1	8	6	2	
AbD 88-176	IM122665	Copper/bronze chisel or spatula, tip broken off.	l = 7.6 cm w = 1.0 cm th = 0.5 cm	31	300.74, 474.47	3	35	0	2	
AbD 88-177	IM122666	Two fragments of yellow glass bracelets with red and black trails, triangular in cross section.	d = 6 cm w = 0.6 cm th = 0.45 cm	6D 8D	625.51, 934.17 814.62, 955.30	25	20	80	3	
AbD 88-178	IM122667	Lower part of nude (?) male plaque. Medium buff ware with fine grit temper.	h = 4.3 cm w = 5.1 cm th = 1.1 cm	8C	847.06, 1042.30	1	14	18	2	Fig. 53
AbD 88-179	IM122668	Fragment of a copper/bronze blade with two hafting holes pre- served.	l = 3.7 cm w = 2.4 cm th = 1.4 cm hd = 0.4 cm	3E	366.58, 810.85	3	29	0	2	Fig. 65
AbD 88-180	IM122669	Model chariot base, broken and eroded. Medium buff ware with chaff temper.	l = 5.5 cm w = 7.0 cm h = 5.5 cm hd = 1.0, 1.1 cm	4E	462.09, 865.32	1	9	0	2	
AbD 88-181	IM122670	Plaque showing human head of medium grit tempered buff ware.	l = 3.8 cm w = 3.8 cm th = 2.4 cm	51	535.92, 445.69	1	14	19	2	Fig. 53
AbD 88-182	IM122671	Lentoid steatite spindle whorl, broken.	d = 4.0 cm th = 1.2 cm hd = 0.8 cm	4J	426.76, 337.03	20	68	0	2	
AbD 88-183	IM122672	Most of a model wheel. Coarse buff ware with fine grit temper.	d = 10.4 cm th = 3.1 cm hd = 1.3 cm	4J	474.92, 398.81	1	10	14	2	
AbD 88-184	IM122673	Hub of a model wheel. Medium orange ware with fine grit temper.	l = 5.2 cm w = 5.0 cm th = 2.0 cm hd = 1.5 cm	31	379.59, 415.58	1	10	14	2	
AbD 88-185	IM122674	Stem end of an Islamic pipe. Fine grey ware with no visible temper.	l = 2.1 cm w = 3.0 cm hd = 0.7-0.1 cm	4J	420.99, 365.03	1	69	0	2	
AbD 88-186	IM122675	Fragment of a model chariot base. Medium orange ware with fine grit temper.	l = 4.7 cm w = 5.8 cm h = 2.4 cm hd = 1.2 cm	4J	400.39, 399.59	1	9	0	2	
AbD 88-187	IM122676	Irregular lump of lead.	l = 3.2 cm w = 1.8 cm th = 0.4 cm	21	269.81, 463.93	4	55	0	2	
AbD 88-188	IM122677	Top fragment of a model chariot shield showing the tops of a pair of lion sickles. Medium orange ware with grit temper.	h = 5.3 cm w = 3.8 cm th = 1.2 cm hd = 0.3 cm	3F	955.30, 704.69	1	8	8	2	
AbD 88-189	IM122678	Model chariot base with front and back broken off. Medium to fine orange ware with chaff temper.	l = 6.2 cm w = 6.8 cm h = 3.8 cm hd = 1.3 cm	3G	379.92, 677.83	1	9	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 88-190	IM122679	Closed end of a cut glass object in mauve glass.	d = 1.4 cm l = 3.2 cm th = 0.1 cm	3Ј	336.11, 327.00	25	25	0	3	
AbD 88-191	IM122680	One third of an eroded model wheel. Medium buff ware with chaff temper.	d = 11.2 cm th = 2.2 cm hd = 1.4 cm	4I	408.16, 426.05	1	10	14	2	
AbD 88-192	IM122681	Model wheel with most edges broken off. Medium orange ware with chaff temper.	d = 11.5 cm th = 3.2 cm hd = 1.1 cm	31	319.80, 472.66	1	10	14	2	
AbD 88-193	IM122682	Vessel sherd with human or animal figure molded on exterior. Medium-coarse buff ware with chaff temper.	l = 9.0 cm w = 7.8 cm th = 3.9 cm	4J	406.38, 393.99	1	3	34	2	Fig. 51
AbD 88-194	IM122683	Broken model wheel. Medium pinkish-buff ware with fine grit and light chaff temper.	d = ca 9 cm th = 1.95 cm hd = ca 1.75 cm	3Ј	330.96, 317.67	1	10	14	2	
AbD 88-195	IM122684	Base sherd of a limestone bowl.	bd = 16.0 cm h = 4.9 cm th = 1.4 cm	5D	527.23, 964.42	10	1	92	2	
AbD 88-196	IM122685	Sherd, including knob, of a yel- lowish-green glass lid.	d = 4.0 h = 2.1 cm th = 0.3 cm	21	252.59, 490.56	25	25	0	3	
AbD 88-197	IM122686	Model wheel. Medium buff ware with chaff temper.	d = 12.2 cm th = 2.8 cm hd = 1.3 cm	2Н	275.20, 548.34	1	10	14	2	
AbD 88-198	IM122687	Headless, armless, legless, eroded figurine, probably female. Medium orange ware with chaff temper, possible cream slip.	l = 5.7 cm w = 4.6 cm th = 1.6 cm	4F	493.51, 778.73	1	15	32	2	
AbD 88-199	IM122688	Copper/bronze sickle blade frag- ment.	l = 6.8 cm w = 1.8 cm th = 0.3 cm	3G	352.56, 647.32	3	33	0	2	
AbD 88-200	IM122689	Model wheel, broken but with most of rim preserved. Medium buff ware with chaff temper.	d = 11.1 cm th = 3.9 cm hd = 1.2 cm	Sound- ing 3 Locus 2 Level 2 Feature 1	317.03, 474.68	1	10	14	2	
AbD 88-201	IM122690	Fragment of a model chariot base. Medium orange ware with no vis- ible temper.	l = 5.8 cm w = 3.9 cm h = 2.2 cm hd = 1.4 cm	4I	405.71, 432.09	1	9	0	2	
AbD 88-202	IM122691	Eroded model chariot shield with top and part of base broken off. Design shows lion mace flanked by two solar disks.	h = 7.1 cm w = 5.5 cm th = 1.2 cm	11E	1117.04, 879.68	1	8	9	2	
AbD 88-203	IM122692	Spiral copper/bronze ring.	d = 2.3 cm th = 0.4 cm hd = 1.3 cm	4J	475.64, 339.14	3	19	0	2	
AbD 88-204	IM122693	Model chariot base with part of base of shield preserved. Medium buff ware.	h = 7.8 cm w = 6.2 cm th = 5.9 cm hd = 1.3 cm	2Н	289.65, 544.56	1	9	0	2	
AbD 88-205	IM122694	Hub of a model wheel. Medium buff ware with chaff temper.	l = 6.6 cm w = 4.85 cm th = 2.1 cm hd = 1.4 cm	21	272.38, 467.56	1	10	14	2	
AbD 88-206	IM122695	Nude female plaque with feet and body above waist broken off. Hard gritty buff ware with fine black grit temper.	h = 5.8 cm w = 3.7 cm th = 2.6 cm	4J	420.84, 345.50	1	14	16	2	

Object #	IM #	Description	Size	Square	Findspot		Со	oding		Ref
						Mat	Obj	Dec	Date	
AbD 88-207	IM122696	Basalt cuboid with traces of wear on one face and pecking on two others.	l = 3.7 cm w = 3.6 cm h = 3.4 cm	2Н	273.04, 518.40	20	41	0	2	
AbD 88-208	IM122697	Eroded model wheel. Medium buff ware with fine grit temper.	d = 5.5 cm th = 3.2 cm hd = 0.7 cm	4K	433.25, 287.85	1	10	14	2	
AbD 88-209	IM122698	Front portion of a model chariot base with bottom part of shield preserved. Medium orange-buff ware.	h = 7.5 cm w = 6.6 cm th = 7.5 cm hd = 1.1 cm	4E	416.28, 874.40	1	9	0	2	Fig. 56
AbD 88-210	IM122699	One half of a matt green glass bead, conical in shape.	l = 0.8 cm w = 0.75 cm th = 0.45 cm hd = 0.25 cm	21	281.03, 455.83	25	18	0	3	
AbD 88-211	IM122700	One third of a model wheel. Medium orange ware with medium grit temper and greenish- buff slip partially preserved.	d = ca 11 cm th = 3.0 cm hd = 1.6 cm	5J	510.88, 367.87	1	10	14	2	
AbD 88-212	IM122701	One third of a limestone donut- shaped stone.	l = 11.1 cm w = 5.3 cm th = 7.4 cm	3G	366.95, 632.15	10	47	0	2	
AbD 88-213	IM122702	Plaque with male figure holding a staff, head and lower legs broken off. Medium buff ware with chaff temper.	h = 8.2 cm w = 6.1 cm th = 1.8 cm	7H	738.56, 563.25	1	14	19	2	Fig. 53
AbD 88-214	IM122703	Top half of a female figurine, Parthian in style, of medium pink- ish ware with grit temper.	l = 9.1 cm w = 5.35 cm th = 2.65 cm	4E	441.67, 897.34	1	14	16	2	Fig. 52
AbD 88-215	IM122704	Libation bowl of coarse olive green ware with heavy chaff temper. Two goats heads modeled on rim, facing inwards, broken.	bd = 24 cm h = 5.9 cm	5J	519.96, 359.11	1	1	31	2	Fig. 51
AbD 88-216	IM122705	Left hand of a terracotta statue. Fingers all broken off below the first knuckle, thumb missing. Hard, gritty buff ware with chaff temper.	l = 10.2 cm w = 8.7 cm th = 3.0 cm	3J	356.76, 326.31	1	16	52	2	Fig. 57
AbD 88-217	IM122706	Top fragment of a model chariot shield showing the tops of a pair of lion sickles with a solar disk between them. Medium buff ware with fine black grit temper.	h = 5.0 cm w = 3.2 cm th = 1.2 cm hd = 0.4 cm	4K	424.57, 291.91	1	8	8	2	
AbD 88-218	Coin 9600	Copper/bronze coin with traces on an impression on one side.	d = 0.85 cm th = 0.2 cm	ЗJ	350.43, 345.38	3	53	0	3	
AbD 88-219	IM122707	Fragment of a model wheel. Coarse buff ware with chaff tem- per.	d = 12 cm th = 2.8 cm hd = ca 1.2 cm	2H	297.56, 544.26	1	10	14	2	
AbD 88-220	IM122708	Broken and eroded model chariot base. Medium orange ware with chaff temper.	l = 5.4 cm w = 6.1 cm h = 4.2 cm hd = 1.1, 1.4 cm	4K	438.06, 288.06	1	9	0	2	
AbD 88-221	IM122709	Two thirds of a model wheel. Medium coarse buff ware with chaff temper.	d = 9.8 cm th = 3.1 cm hd = 0.9 cm	4F	402.50, 787.04	1	10	14	2	
AbD 88-222	IM122710	Shallow bowl with string-cut base. Medium buff ware with fine chaff temper.	rd = 17 cm bd = 7.5 cm h = 6.1 cm th = 1.3 cm	7D	768.39, 915.67	1	1	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 88-223	IM122711	Plaque fragment showing male head wearing a horned crown with both hands in front of the face. Overfired greenish ware with sparse fine grit temper.	h = 4.2 cm w = 3.4 cm th = 1 cm	31	378.34, 417.80	1	14	22	2	Fig. 53
AbD 88-224	IM122712	One third of a copper/bronze bracelet, inner face slightly flat-tened.	l = 4.1 cm w = 1.8 cm d = 0.4 cm	2I	280.58, 484.96	3	20	0	2	
AbD 88-225	IM122713	One quarter of an eroded model wheel. Soft, sandy buff ware with chaff temper.	d > 10 cm th = 1.6 cm hd = 1.1	4I	424.78, 431.15	1	10	14	2	
AbD 88-226	IM122714	Badly eroded model chariot base. Medium orange ware with chaff temper.	l = 5.8 cm w = 5.0 cm h = 3.3 cm hd = 1.4 cm	4I	415.52, 463.80	1	9	0	2	
AbD 88-227	IM122715	Broken green glass bead with white swirls.	l = 1.0 cm th = 0.7 cm hd = 0.2 cm	21	258.17, 477.71	25	18	0	3	
AbD 88-228	IM122716	Very eroded model chariot shield with base and part of top broken off. Faint traces of one lion sickle can be made out. Medium pinkish buff ware.	h = 8.1 cm w = 4.6 cm th = 1.7 cm hd = 0.3 cm	4J	430.68, 367.35	1	8	8	2	
AbD 88-229	IM122717	Nude female plaque, feet and upper body broken off. Hard fired reddish-buff ware with fine black grit temper.	h = 6.8 cm w = 3.8 cm th = 1.9 cm	21	292.53, 459.06	1	14	16	2	Fig. 53
AbD 88-230	Coin 9599	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.1 cm th = 0.3 cm	3F	355.53, 737.74	3	53	0	3	
AbD 88-231	IM122718	Small fragment of a rim of a bowl in fine alabaster or serpentine. Pale yellowish green with darker green bands.	l = .5 cm w = 1.5 cm th = 1.2 cm	21	282.14, 458.86	20	1	92	2	
AbD 88-232	IM122719	Rim fragment of a shallow bow in greenish stone with yellow bands.	d = 18.0 cm h = 1.7 cm th = 0.8 cm	31	345.74, 466.97	20	1	0	2	
AbD 88-233	IM122720	Broken shell ring.	d = 2.0 cm th = 0.5 cm hd = 1.4 cm	31	357.14, 449.61	30	19	0	2	
AbD 88-234	IM122721	Round agate ball, one end broken.	d = 1.5 cm	4I	438.94, 426.24	20	55	0	2	
AbD 88-235	IM122722	Top portion of the head of a lion statue, including one ear. Coarse buff ware with chaff temper.	l = 17 cm w = 17 cm th = 3.2 cm	ЗJ	355.95, 334.75	1	16	54	2	Fig. 59
AbD 88-236	IM122723	Sherd of a vessel of black and white granite.	l = 4.0 cm w = 2.2 cm th = 0.8 cm	31	361.70, 454.26	16	1	0	2	
AbD 88-237	IM122724	Animal figurine, missing head and legs. Medium orange ware with chaff temper.	l = 5.8 cm h = 3.4 cm th = 2.6 cm	21	286.74, 455.22	1	15	31	2	
AbD 88-238	IM122725	Model bed fragment showing toes of human figure. Medium green- ish ware with fine grit temper.	l = 3.15 cm w = 5.1 cm th = 2.1 cm	4J	410.14, 356.36	1	13	46	2	Fig. 54
AbD 88-239	IM122726	Hub of a model wheel. Medium buff ware with fine grit temper.	l = 5.9 cm w = 4.4 cm th = 1.5 cm hd = 1.2 cm	2H	291.90, 501.65	1	10	14	2	
AbD 88-240	IM122727	Iron fragment, bent with a square cross section.	l = 3.9 cm w = 0.9 cm th = 2.7 cm	4E	421.37, 860.23	5	39	0	3	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 88-241	IM122728	Discoid bead of black stone.	d = 0.7 cm th = 0.2 cm hd = 0.3 cm	21	291.07, 451.13	13	18	0	2	
AbD 88-242	IM122729	Sherd, chipped into a rough circle with a hole drilled in the middle. Medium pinkish-buff ware with fine black grit temper.	d = 11.9-12.35 cm th = 1.6 cm hd = 2.0 cm	4E	489.48, 895.71	1	22	0	2	
AbD 88-243	IM122730	Half of a model wheel. Medium- coarse buff ware with chaff temper.	d = 7.8 cm th = 3.2 cm hd = 1.5 cm	5J	522.70, 370.05	1	10	14	2	
AbD 88-244	IM122731	Nude female plaque broken off below waist. Hard gritty pinkish- orange ware with fine grit temper.	h = 6.5 cm w = 4.2 cm th = 2.8 cm	4J	476.43, 388.82	1	14	16	2	
AbD 88-245	IM122732	Eroded model chariot shield. Design shows figure of Shamash holding saw and with one foot on a platform. No other details can be made out. Medium orange ware with chaff temper.		4G	475.00, 681.38	1	8	6	2	
AbD 88-246	IM122733	Copper/bronze spearpoint with central flange.	l = 7.0 cm w = 2.3 cm th = 0.7 cm	4J	453.39, 355.08	3	38	0	2	Fig. 66
AbD 88-247		ca. 150 fragments of baked clay barrel cylinders carrying an 85 line inscription commemorating the building of the city wall of Mashkan-shapir by Sin-iddinam of Larsa. Three different shapes can be made out: a flat topped barrel, a macehead, and a round-topped barrel. The barrel shaped cylinders were pierced all the way through, the macehead shaped piece only partially. We only have a preserved length on the flat topped barrel cylinder. All are of coarse orange ware with a buff surface and a grey core.	Flat topped barrel: l = 17.4 cm d = 7.8-12.3 cm hd = 1.6 cm Macehead: l = 14.1 cm d = 7.4-13.5 cm hd = 2.0 cm Round topped barrel: l = 6.5 cm d = 10.5 cm hd = 2.0-6.6 cm	5K	ca. 553, 260	1	23	0	2	Figs. 78–100
AbD 88-248	IM122735	Sheep/goat animal figurine, one rear leg broken off. Sandy pinkish- orange ware with grey core and chaff temper.	l = 8.8 cm h = 10.6 cm th = 3.5	2H	280.04, 526.46	1	15	31	2	Fig. 52
AbD 88-249	IM122736	Fragment of a ceramic table. Fin- ger impressions under the spring- ing of the leg. One leg and part of top preserved. Medium buff ware with heavy chaff temper.	d = 24 cm h = 8.4 cm	4F	490.30, 786.85	1	5	0	2	
AbD 88-250	IM122737	Prow of a model boat, pierced. Medium buff ware with fine grit temper.	l = 7.75 cm w = 5.75 cm th = 3.15 cm	3К	364.22, 288.76	1	12	0	2	Fig. 54
AbD 88-251	IM122738	Model bed fragment showing springs with one leg preserved. Medium pinkish-buff ware with fine black grit temper.	l = 4.85 cm w = 4.4 cm th = 3.3 cm	4J	433.19, 358.09	1	13	45	2	Fig. 54
AbD 88-252	IM122739	Model chariot base, lower part of shield preserved, seat broken off. Shield fragment had architectural design.	h = 7.8 cm w = 6.1 cm th = 4.5 cm hd = 1.1 cm	5E	563.21, 814.89	1	9	0	2	Fig. 56
AbD 88-253	IM122740	Five fragments of a green glazed bowl with carinated rim and ring base. Sandy buff ware.	rd = 10 cm bd = 5 cm h = 4.3 cm	5F	504.01, 796.67	1	1	5	3	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 88-254	IM122741	Model chariot shield with base and part of top broken off. Design shows a pair of lion sickles flanking a solar disc and a crescent. Medium buff ware with chaff tem- per.	h = 6.5 cm w = 4.6 cm th = 1.7 cm hd = 0.3 cm	4I	402.68, 432.47	1	8	8	2	
AbD 88-255	IM113920	Limestone donut-shaped stone with flattened bottom.	d = 11.7 cm h = 4.3 cm hd = 3.5 cm	7F	795.21, 735.31	10	47	0	2	Fig. 72
AbD 88-256	IM122742	Body fragment from terracotta statuary, with some modeled deco- ration. Coarse buff ware with chaff temper.	l = 13.4 cm w = 20.5 cm th = 4.3 cm	3Ј	328.88, 340.42	1	16	58	2	Fig. 60
AbD 88-257	IM122743	Model chair with seated female figure and part of an animal (?) on her right. Head and upper right side broken off. Medium buff ware with fine grit temper.	h = 8.2 cm w = 5.9 cm th = 2.5 cm	4J	411.92, 363.01	1	11	42	2	Fig. 54
AbD 88-258	IM122744	Part of a large ceramic wheel with two flanges. Most closely resembles part of a ceramic pulley. Medium orange ware with fine grit temper.	l = 11.6 cm w = 6.6 cm th = 7.7 cm hd = 4.0 cm	3Н	366.56, 516.06	1	10	13	2	
AbD 88-259	IM122745	Model chariot base, seat broken off. Medium buff ware with chaff temper.	l = 7.1 cm w = 6.3 cm h = 3.4 cm hd = 1.3, 1.6	3Н	348.52, 583.00	1	9	0	2	
AbD 88-260	IM122746	Broken model chariot base. Medium buff ware with chaff tem- per.	l = 6.5 cm w = 6.5 cm h = 3.4 cm hd = 1.3 cm	2Н	274.06, 531.86	1	9	0	2	
AbD 88-261	IM122747	One quarter of a model wheel. Medium buff ware with fine grit temper.	d = ca 10.7 cm th = 8.7 cm hd = 2.6 cm	4J	437.04, 366.99	1	10	13	2	
AbD 88-262	IM122748	Chipped model wheel. Medium buff ware with chaff temper.	d = 10.1 cm th = 2.5 cm hd = 1.4 cm	5J	509.67, 384.21	1	10	14	2	
AbD 88-263	IM122749	Model wheel with no rim pre- served. Medium buff ware with chaff temper.	d > 9.6 cm th = 2.7 cm hd = 1.7 cm	4J	425.77, 314.49	1	10	13	2	
AbD 88-264	IM122750	Twelve assorted limb fragments from terracotta statuary, presum- ably human. All pieces were pierced. Coarse pinkish-red ware with chaff temper.		2J-3J	296.15– 303.22, 327.75– 337.95	1	16	56	2	
AbD 88-265	IM122751	Broken and eroded model wheel, no rim preserved. Medium buff ware with chaff temper.	d > 9.4 cm th = 4.2 cm hd = 0.75	5J	578.21, 396.67	1	10	14	2	
AbD 88-266	IM122752	Fragment of a head of a human statue, right ear preserved. Coarse orange ware with chaff temper.	l = 8.5 cm w = 9.0 cm th = 3.0 cm	2J	298.13, 333.80	1	16	51	2	Fig. 57
AbD 88-267	IM122753	Flattened quartzite disk, pierced, broken.	d = 13 cm th = 2.3 cm hd = 1.9 cm	ЗJ	359.08, 361.63	11	68	0	2	
AbD 88-268	IM122754	Copper/bronze arrowhead with one tang broken off.	l = 3.5 cm w = 1.75 cm th = 0.4 cm	4I	483.88, 416.61	3	38	0	2	
AbD 88-269	IM122755	Small, shallow bowl with string- cut base. Fine orange ware with fine grit temper.	rd = 9.5 cm bd = 3.5 cm h = 2.1 cm	2H	256.09, 507.51	1	1	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 88-270	IM122756	Part of a flat, oval shaped piece of ceramic with at least two holes drilled through one end. Medium orange ware with fine grit temper.	l = 7.3 cm w = 3.7 cm th = 1.4 cm hd = 1.5 cm	2Н	263.89, 514.03	1	63	0	2	
AbD 88-271	IM122757	Figurine, perhaps female, with head, arms and most of legs broken off, badly eroded. Medium buff ware with grit temper.	h = 7.9 cm $w = 4 cm$ $th = 2 cm$	2К	284.76, 291.63	1	15	33	2	
AbD 88-272	IM122758	Model bed fragment showing springs with one leg preserved. Overfired greenish ware with chaff temper.	l = 5.8 cm w = 5.3 cm th = 2.4 cm	31	359.90, 450.47	1	13	45	2	
AbD 88-273	IM122759	Broken model chariot base. Medium orange ware.	l = 5.7 cm w = 5.9 cm h = 4.5 cm hd = 1.2 cm	31	382.57, 459.16	1	9	0	2	
AbD 88-274	IM122760	Broken animal figurine with front half of torso, stumps of front legs, elongated neck and base of head preserved. Badly worn. Hard gritty greenish-brown ware with fine grit temper.	h = 6.9 cm w = 4.3 cm th = 2.3 cm	31	315.76, 495.63	1	15	30	2	
AbD 88-285	IM122761	Broken model chariot base. Medium buff ware with light chaff temper.	l = 7.0 cm w = 6.0 cm th = 5.2 cm hd = 1.3 cm	Sound- ing 3 Locus 2 Level 2	316.71, 476.62	1	9	0	2	
AbD 88-276	IM122762	One half of a model wheel. Soft, sandy pinkish-buff ware with very fine grit temper.	d > 9 cm th = 2.6 cm hd = 3.0 cm	2K	279.96, 287.47	1	10	13	2	
AbD 88-277	IM122763	Rim sherd of a pinkish glass bowl.	rd = 18 cm h = 4.8 cm th = 0.5 cm	3F	302.69, 739.83	25	1	0	3	
AbD 88-278	Coin 9598	Copper/bronze disk, probably a coin but no impression preserved.	d = 1.5 cm th = 0.3 cm	5E	595.78, 856.81	3	53	0	3	
AbD 88-279	IM122764	Sherd of a vessel of off-white quartzite with red streaks.	l = 3.5 cm w = 2.8 cm th = 0.8 cm	21	299.43, 496.24	26	1	0	2	
AbD 88-280	IM114800	Broken clay nail head with part of a Zabaya inscription. Of hard gritty buff ware with fine black grit temper.	d = 12.0 cm th = 1.5 cm	4J	454.36, 352.17	1	39	3	2	Fig. 101
AbD 88-281	IM122765	Rim sherd of a deep bowl of cream colored quartzite.	l = 5.0 cm w = 2.2 cm th = 0.8 cm	4E	448.51, 851.19	15	1	94	2	
AbD 88-282	IM122766	Broken model chariot base. Medium orange ware with fine chaff temper.	l = 6.6 cm w = 6.3 cm h = 3.5 cm hd = 1.2 cm	4E	462.45, 830.52	1	9	0	2	
AbD 88-283	IM122767	Fragment of a copper/bronze blade, with part of one hafting hole preserved.	l = 3.0 cm w = 1.65 cm th = 0.75 cm hd = 0.4 cm	4J	402.68, 321.15	3	29	0	2	
AbD 88-284	IM122768	Slightly curved iron fragment with circular cross section.	l = 3.5 cm d = 0.6 cm	4J	401.18, 364.95	5	40	0	3	
AbD 88-285	IM122769	Metal disc, concave on reverse with raised dots on obverse, tabs on both ends. Perhaps made of tin—probably modern.	l = 1.5 cm d = 1.1 cm th = 0.15 cm	31	376.27, 464.61	9	24	0	3	
AbD 88-286	IM122770	Curved fragment of iron with a circular cross section.	l = 3.1 cm d = 0.9 cm	ЗJ	325.24, 314.12	5	40	0	3	
Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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						Mat	Obj	Dec	Date	
AbD 88-287	IM122771	Three decorated body fragments of terracotta statues. Coarse buff ware with chaff and fine black grit temper.	l = 4.8, 1.5, 4.3 cm w = 8.2, 3.9, 10.2 cm th = 2.4, 1.6, 2.7 cm	2J-3J	296.91– 348.63, 332.09– 335.17	1	16	57	2	Fig. 61
AbD 88-288	IM122772	Eroded model chariot base. Medium orange ware with chaff temper.	l = 7.6 cm w = 7.4 cm h = 3.5 cm hd = 0.6 cm	5J	589.58, 336.35	1	9	0	2	
AbD 88-289	IM122773	Large limestone pierced weight in the shape of a flattened pear. Possi- bly an anchor.	l = 14.7 cm w = 12.2 cm th = 7.8 cm hd = 0.5 cm wgt = 1.9 kg	5J	534.31, 385.52	10	64	0	2	Fig. 71
AbD 88-290	IM122774	Mold for making a nude female plaque, mostly broken beneath the waist. Figurine wears a headdress. Hard gritty pinkish-orange ware with fine black grit temper.	h = 7.6 cm w = 4.7 cm th = 2.3 cm	6K	627.80, 269.67	1	65	16	2	Fig. 54
AbD 88-291	IM122775	Two thirds of a model wheel. Medium buff ware with fine grit temper.	d = 9.5 cm th = 3.1 cm hd = 0.7 cm	5J	542.83, 301.47	1	10	14	2	
AbD 88-292	IM122776	Model bed fragment showing lower legs of nude female figure with one leg preserved. Medium orange-buff ware with grit temper.	l = 4.5 cm w = 6.4 cm th = 2.6 cm	6J	626.84, 350.36	1	13	46	2	Fig. 54
AbD 88-293	IM122777	Flat piece of copper/bronze, blade fragment?	l = 3.5 cm w = 2.9 cm th = 0.7 cm	3H	341.72, 518.99	3	60	0	2	
AbD 88-294	IM122779	Model boat stern fragment with high curled end. Medium buff ware with very fine grit temper.	l = 4.6 cm w = 2.4 cm th = 2.5 cm	6J	628.54, 350.97	1	12	0	2	Fig. 54
AbD 88-295	IM122778	Lower portion (thighs and calves) of a nude female plaque. Soft sandy yellow-brown ware.	l = 4.0 cm w = 3.7 cm th = 2.0 cm	Sound- ing 2 Locus 2 Level 1	No exact prove- nience recorded.	1	14	16	2	
AbD 88-296	IM122780	Two copper/bronze blades, one long and thin with one blunt end and the other end broken off, the other is the tip of a sickle.	l = 12.6, 1.7 cm w = 1.7, 0.9 cm th = 0.3, 0.3 cm	3G	350.73, 641.32	3	29	0	2	Fig. 65
AbD 88-297	IM122781	Most of a figurine holding head and stomach of fine buff ware with fine grit temper. The figurine seems to be kneeling.	l = 8.8 cm w = 4.8 cm th = 2.9 cm	6J	609.73, 373.54	1	15	36	2	Fig. 52
AbD 88-298	IM122782	Part of a model chair back, per- haps, traces of lunar sickle and solar disk preserved. Medium orange ware with cream slip and fine grit temper.	l = 4.6 cm w = 4.0 cm th = 1.5 cm	6J	639.57, 352.55	1	14	0	2	
AbD 88-299	IM122783	Model bed fragment showing traces of springs, no feet preserved. Medium buff ware with grit tem- per.	l = 4.2 cm w = 3.3 cm th = 0.7 cm	6J	604.48, 361.51	1	13	45	2	
AbD 88-300	IM122784	Broken shell ring.	d = 2.3 cm th = 0.3 cm hd = 1.7 cm	4J	468.11, 321.38	30	19	0	2	
AbD 88-301	IM122785	Most of an eroded model wheel. Medium buff ware with fine grit temper.	d > 6.8 cm th = 2.8 cm hd = 1.1 cm	6J	607.17, 376.24	1	10	14	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 88-302	IM122786	Sherd, including knob, of a green glass lid.	d = 4.0 cm h = 2.9 cm th = 0.4 cm	21	255.43, 411.04	25	25	0	3	
AbD 88-303	IM122787	Perhaps part of a limb of a ceramic statue, hollow with molded relief. Medium buff ware with grit tem- per.	l = 11.0 cm w = 12.5 cm th = 2.0 cm	5J	532.37, 379.84	1	16	58	2	
AbD 88-304	IM122788	Base of a figurine? Solid piece of baked clay with two flutes impressed in one surface. Soft sandy pinkish-yellow ware with very fine chaff temper.	h = 6.7 cm w = 3.4 cm th = 1.4 cm.	6J	621.87, 342.58	1	14	0	2	
AbD 88-305	IM122789	Model bed fragment (?) showing springs. No legs preserved. Medium buff ware with very fine grit temper.	l = 3.0 cm w = 4.1 cm th = 1.7 cm	4K	475.95, 297.80	1	13	45	2	
AbD 88-306	IM122790	Half of a model wheel. Medium orange ware with grit temper.	d = 10.8 cm th = 4.2 cm hd = 1.2 cm	5J	581.87, 301.54	1	10	14	2	
AbD 88-307	IM122791	Broken model chariot base. Medium buff ware with chaff tem- per.	l = 7.4 cm w = 6.4 cm th = 4.9 cm hd = 1.2, 0.5	Sound- ing 3 Locus 3 Level 2	317.31, 475.15	1	9	0	2	
AbD 88-308	IM122792	Completely eroded model chariot shield. Medium orange ware with fine grit temper.	h = 9.5 cm w = 7.4 cm th = 1.8 cm hd = 0.5, 0.9 cm	31	379.56, 464.49	1	8	0	2	
AbD 88-309	IM122793	Model wheel, slightly chipped. Medium orange ware with fine grit temper.	d = 8.8 cm th = 2.8 cm hd = 1.3 cm	21	271.08, 430.50	1	10	14	2	
AbD 88-310	IM122794	Eroded model wheel. Medium buff ware with chaff temper.	d = 9.2 cm th = 3.8 cm hd = 0.6 cm	6J	625.41, 341.95	1	10	14	2	
AbD 88-311	IM122795	Ceramic lid or small bowl. Top (or base) is string-cut. Medium pink- ish-white ware with cream slip and grit temper.	rd = 6.8 cm bd = 2.7 cm h = 2.55 cm	4J	498.77, 310.93	1	4	0	2	
AbD 88-312	IM122796	Most of a model wheel. Medium buff ware with chaff temper.	d > 10.5 cm th = 2.7 cm hd = 1.6 cm	6J	602.18, 361.19	1	10	14	2	
AbD 88-313	IM122797	Nude female figurine fragment, broken at waist and above knees. Impressed pubic area. Dark red- dish-yellow ware with fine black grit temper.	l = 4.3 cm w = 4.0 cm th = 1.0	4J	489.06, 303.90	1	15	33	2	Fig. 52
AbD 88-314	IM122798	Half of a limestone donut-shaped stone, crudely shaped.	l = 4.1 cm w = 8.5 cm th = 5.6 cm	5J	533.13, 345.26	10	47	0	2	
AbD 88-315	IM122799	Most of a model wheel. Medium buff ware with chaff temper.	d = 10.25 th = 3 cm hd = 1.3 cm	6J	613.45, 328.26	1	10	14	2	
AbD 88-316	IM122800	Broken model wheel. Medium buff ware with fine grit temper.	d = 9 cm th = 4.05 cm hd = 0.8 cm	6J	600.28, 304.76	1	10	14	2	
AbD 88-317	IM122801	Limestone cuboid stone with traces of wear on all surfaces.	l = 3.6 cm w = 3.5 cm h = 3.4 cm	6J	609.71, 341.69	10	41	0	2	
AbD 88-318	IM122802	Model wheel. Soft sandy buff ware with chaff temper.	d = 11.1 cm th = 3.5 cm hd = 1.5 cm	5K	525.73, 261.72	1	10	14	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 88-319	IM122803	Ten sherds of a vessel of black stone with red and white veins.	l (4.4 cm w (2.2 cm th = 1.1 cm	31	331.26, 422.12	20	1	0	2	
AbD 88-320	IM122804	Rim and base fragments of a deep bowl of fine grained brown stone with white and yellow veins. The two pieces do not join.	l = 7.1, 4.7 cm w = 3.8, 6.1 cm th = 1.2, 0.7 cm	51	540.26, 401.89	27	1	94	2	
AbD 88-321	IM122805	Fragment of a blue glass bracelet or handle.	d = 4.0 cm th = 0.3 cm	31	318.83, 454.59	25	20	83	3	
AbD 88-322	IM1227806	Copper/bronze disk with two large flanges on either side.	l = 1.8 cm w = 1.5 cm th = 0.3 cm	5K	565.26, 264.64	3	24	0	2	Fig. 64
AbD 90-1		Base fragment of a deep alabaster bowl.	bd = ca 6 cm h = 4.7 cm th = 0.7–1.7 cm	6K	627.23, 240.59	15	1	91	2	
AbD 90-2		Base fragment of a bowl of whitish quartzite with orange veins.	bd = 10 cm h = 2.5 cm th = 1.1-1.5 cm	8 H	855.74, 546.82	27	1	92	2	
AbD 90-3		Base sherd of a bowl of yellow- orange quartzite.	bd = 6.3-6.9 cm h = 4.5 cm th = 0.9 -2.2 cm	East Mound		27	1		2	
AbD 90-4		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.8 cm th = 0.2 cm	3D	358.39, 917.18	3	53	0	3	
AbD 90-5		Green glass bottle stop.	d = 2.5 cm h = 1.5 cm th = 0.3 cm	Findspot unknow n		25	25	0	3	
AbD 90-6 MS90-1	IM139598	Top portion of a model chariot shield with top right corner bro- ken off. Design shows figure of Shamash holding rod and ring with a sun disks on each side of his head. Fine buff ware with no vis- ible temper.	h = 5.9 cm w = 5.2 cm th = .6-1.4 cm hd = .35 cm	3Н	348.80, 549.32	1	8	6	2	
AbD 90-7		Badly eroded model chariot shield with top broken off, no design vis- ible. Medium greenish ware with chaff temper.	h = 6.0 cm w = 5.4 cm th = 1.6 cm hd = 0.11 cm	6G	631.38, 638.52	1	8	8	2	
AbD 90-8 MS90-2	IM139599	Model chariot shield, top broken off. Design shows figure of Sha- mash holding saw and rod and ring with one foot on a platform. Crosshatched design around hole for yoke pole. Medium greenish ware with chaff temper.	h = 9.9 cm w = 4.3 cm th = 2.0 cm hd = 1.1–1.3 cm	2H	297.67, 547.58	1	8	6	2	Fig. 55
AbD 90-9 MS90-3	IM139600	Top half of a model chariot shield showing a pair of lion sickles with solar disk in between. Medium greenish ware with rare fine chaff temper.	h = 5.1 cm w = 4.9 cm th = 1.3 cm hd = 0.4 cm	2G	262.35, 609.81	1	8	8	2	
AbD 90-10		Badly eroded model chariot shield with top broken off. Fine greenish ware with some chaff temper.	h = 7.2 cm w = 4.4 cm th = 1.5 cm hd = 1.4 cm	3G	320.84, 630.40	1	8	0	2	
AbD 90-12		Two thirds of a model wheel. Sandy buff ware with fine grit temper.	d = 12 cm th = 3.1 cm hd = 0.9–1.1 cm	4H	460.66, 552.81	1	10	14	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 90-14		One third of a model wheel. Medium greenish buff ware with chaff temper.	d = 13 cm th = 4.2 cm hd = 2.7 cm	8H	894.83, 537.38	1	10	13	2	Fig. 56
AbD 90-16		Most of a model wheel. Fine buff ware with black grit temper.	d = 8 cm th = 4.1 cm hd = 0.7–0.8 cm	4H	447.62, 556.03	1	10	14	2	
AbD 90-18		Model chariot base. Medium buff ware with fine grit and chaff tem- per.	l = 8.0 cm w = 6.3 cm h = 5.3 cm hd = 1.0-1.2 cm	no prov- enance		1	9	0	2	
AbD 90-19		Model chariot base, axle hole and lower part of shield preserved. Medium orange ware with chaff temper.	h = 6.9 cm w = 6.1 cm th = 3.6 cm hd = 1.5, 1.1 cm	4D	411.67, 946.85	1	9	0	2	
AbD 90-20		Model chariot base. Medium buff ware with chaff temper.	l = 6.2 cm w = 6.8 cm h = 3.7 cm hd = 1.1, 1.5 cm	61	640.44, 469.91	1	9	0	2	
AbD 90-21		Rim fragment of a bowl with out- turned rim of pink layered quartz- ite.	d = 24 cm h = 8.7 cm th = 0.8 cm	81	832.31, 475.31	26	1	90	2	Fig. 67
AbD 90-24		Eroded model wheel. Medium greenish buff ware with chaff and fine black grit temper.	d = 8.0 cm th = 2.7 cm hd = 0.9 cm	2H	289.93, 579.68	1	10	14	2	
AbD 90-26		Most of a model wheel. Medium coarse greenish buff ware with chaff temper.	d = 9 cm th = 2.9 cm hd = 1.3 cm	2C		1	10	14	2	
AbD 90-27		Round, flat limestone grinding stone.	d = 10.2 cm th = 5.5 cm	9J	939.32, 396.30	10	54	0	2	
AbD 90-28		Half of a model wheel. Coarse orange ware with rare chaff tem- per.	d = ca 8 cm th = 2.9 cm hd = 1.2 cm	8C	871.42, 1045.13	1	10	14	2	
AbD 90-29		One half of a stone sphere in pink limestone, depression worn in bro- ken edge.	d = 14 cm th = 6.5 cm hd = 5.0 cm	6H	606.08, 544.75	20	54	0	2	Fig. 77
AbD 90-30		Half of a model wheel. Coarse buff ware with chaff temper.	d = 9 cm th = 2.4 cm hd = 1.1 cm	4D	440.84, 938.32	1	10	14	2	
AbD 90-32		Decorative base of a vessel in brown glass.	l = 5.1 cm w = 5.0 cm th = 0.8 cm	8H	820.62, 579.49	25	25	0	3	
AbD 90-34		One third of a model wheel. Medium orange ware with grit temper.	d = 6 cm th = 2.2 cm hd = 0.9 cm	9H	929.27, 499.71	1	10	14	2	
AbD 90-36		Chipped hematite celt.	l = 3.8 cm w = 2.7 cm th = 1.1 cm	5D	549.70, 978.55	13	32	0	2	
AbD 90-38		Fragment of a polished green shale celt.	l = 2.9 cm w = 2.9 cm th = 1.0 cm	2E	261.79, 864.53	20	38	0	2	
AbD 90-39 MS90-8	IM139604	Round copper/bronze bead.	d = 0.9 cm h = 0.8 cm hd = 0.2 cm	3Н	381.68, 576.91	3	18	0	2	Fig. 64
AbD 90-40 MS90-9	IM139605	Barrel-shaped bead of red quartz- ite.	d = 1.1 cm l = 2.3 cm hd = 0.2 cm	1H		20	18	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 90-42 MS90-10	IM139606	Pinkish conical glass bead.	d = 1.8-1.95 cm h = 0.6 cm hd = 0.7-0.8 cm	2F	249.32, 745.69	25	18	0	3	Fig. 70
AbD 90-46		Roughly rectangular limestone grinder with traces of wear on both ends.	l = 7.4 cm w = 6.4 cm th = 3.6 cm	51	567.45, 447.58	10	45	0	2	Fig. 76
AbD 90-47 MS90-14	IM139610	Oval bead of marbled quartz.	d = 0.6 cm l = 1.6 cm hd = 0.15 cm	3D	367.27, 953.43	19	18	0	2	
AbD 90-48		Limestone cuboid stone with traces of wear on all sides.	l = 3.9 cm w = 3.9 cm h = 3.9 cm	8J	880.48, 394.79	10	41	0	2	
AbD 90-49		Somewhat eroded model wheel. Medium buff fabric with chaff temper.	d = 10.1 cm th = 2.8 cm hd = 1.1-1.2 cm	9H	916.64, 525.07	1	10	14	2	
AbD 90-50 MS90-15	IM139611	Copper/bronze spearpoint.	l = 10.3 cm w = 2.35 cm th = 0.8 cm	Central part of site.		3	38	0	2	Fig. 66
AbD 90-51		Slightly tapering ceramic tube, perhaps the base of a male figurine. Medium orange-buff ware with black grit temper.	h = 8.1 cm w = 2.7 cm th = 2.7 cm	9C	901.74, 1051.35	1	15	32	2	
AbD 90-52		Fragment of a large circular ceramic tray with impressed deco- ration. Coarse orange ware with coarse chaff temper.	l=17.8 w=15.0 th = 1.6-2.4 cm	4H	439.11, 541.09	1	4	0	2	
AbD 90-54		Sherd of a stone bowl of brown and white quartzite.	l = 5.7 cm w = 3.2 cm th = 1.1 cm	6D	600.98, 959.09	27	1	0	2	
AbD 90-55		Flat ovoid grinder of brown finegrained quartzite. Green stains on surface may be traces of copper oxide	l = 9.3 cm w = 8.1 cm th = 1.4 cm	4H	461.42, 548.47	19	56	0	2	
AbD 90-56 MS90-16		Trapezoidal quartzite grinder with evidence of wear on all sides and ends.	l = 12.7 cm w = 8.4 cm th = 5.8 cm	2E	299.03, 874.50	19	44	0	2	Fig. 76
AbD 90-57		Nearly complete bowl of light orange buff ware with chaff temper and string cut base.	rd = 15 cm bd = 5.8 cm th = 0.6 cm	4G	434.41, 622.46	1	1	0	2	
AbD 90-69		Shaft fragment of a copper/bronze pin or rod with a square cross-sec- tion.	l = 17.0 cm w = 0.7 cm th = 0.7 cm	6C	628.18, 1056.26	3	34	0	2	Fig. 65
AbD 90-75 MS90-24	IM139615	Complete rattle in the form of a cow (?), lower legs broken off. Object still rattles. Medium fine orange ware with grit temper.	l = 11.7 cm h = 5.5 cm th = 4.6 cm	4H	482.78, 513.30	1	58	70	2	Fig. 62
AbD 90-88 MS90-32	IM139623	Oval carnelian bead.	d = 0.4 cm l = 1.3 cm hd = 0.1 cm	4J	479.35, 310.38	12	18	0	2	
AbD 90-91 MS90-34	IM139625	Bottom portion of a figurine, hol- low inside but solid towards more pointed base. Exterior has finger- nail impressions, of medium buff ware with no visible temper.	l = 7.7 cm w = 4.2 cm th = 0.7 cm	4D	484.22, 927.72	1	15	35	2	Fig. 52
AbD 90-94 MS90-35	IM139626	Rim fragment of a shallow bowl of pink quartzite, slightly out-turned rim.	d = 24 cm h = 5.4 cm th = 0.8 cm	7H	777.84, 575.34	26	1	90	2	
AbD 90-96		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.0-1.2 cm th = 0.3 cm	3Н	389.05, 595.24	3	53	0	3	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 90-101		One third model wheel. Medium- coarse pinkish-buff ware with chaff temper.	d = 7.2 cm th = 2.1 cm hd = 0.8 cm	9C	935.91, 1049.84	1	10	14	2	
AbD 90-102		Copper/bronze ring fragment.	d = ca. 2.3 cm th = 0.5-0.8 cm hd = 1.6 cm	4H	443.46, 538.64	3	19	0	2	
AbD 90-108 MS90-41	IM139632	Complete shell ring.	d = 2.4 cm th = 0.4 cm hd = 1.6 cm	South mound		30	19	0	2	
AbD 90-111		Shallow bowl, fine light buff ware with fine black grit and some chaff temper. Parthian in date.	rd = 33.5 cm. bd = 10.8 cm. h = 8.5 cm.	4E	406.83, 887.05	1	1	0	3	Fig. 50
AbD 90-115		Prismatic flint core with some cor- tex remaining on one side.	l = 6.7 cm w = 4.9 cm th = 4.3 cm	5Н	558.76, 548.53	18	31	0	2	Fig. 74
AbD 90-121 MS90-51	IM139642	Spherical carnelian bead.	d = 0.2 cm h = 0.2 cm hd = 0.1 cm	4H	442.14, 546.01	12	18	0	2	
AbD 90-130		Model chariot base, right side somewhat broken. Medium buff ware with rare chaff temper.	l = 5.9 cm w = 6.7 cm h = 4.9 cm hd = 1.2 cm	3Н	302.88, 557.25	1	9	0	2	
AbD 90-133		Model chariot base. Fine greenish- buff ware with no visible temper.	l = 6.2 cm w = 4.4 cm h = 3.9 cm hd = 0.7 cm	Central Mound		1	9		2	
AbD 90-157		Fragment of a black glass bracelet with a faint olive green trail, circu- lar in cross section.	l = 4.9 cm d = 0.5 cm	4H	457.45, 584.76	25	20	83	3	
AbD 90-174		One half of a conical blue glass bead.	d = 1.55 cm h = 0.95 cm hd = 0.45 cm	9H	920.18, 522.77	25	18	0	3	
AbD 90-185		Quartzite cuboid with most faces showing traces of wear.	l = 4.2 cm w = 4.2 cm h = 4.2 cm	South- west part of the site.		20	41		2	
AbD 90-208		Broken ceramic tripod, Fine orange ware with buff slip and fine black grit temper.	l = 5.7 cm w = 6.6 cm th = 2.0 cm	4H95III Locus 8 Level 3	407.75, 593.10	1	59	0	2	
AbD 90-227 MS90-102		Pinkish brown marble macehead fragment, flecked with white and brown.	l = 5.4 cm w = 5.3 cm hd = 2.8 cm	4H95III Locus 6 Level 2	407.20, 591.52	14	52	0	2	
AbD 90-229 MS90-103	IM139681	Very worn nude female plaque broken off below waist. Medium buff ware with fine black grit tem- per.	h = 5.7 cm w = 4.6 th = 1.7 cm	61	671.24, 402.27	1	14	16	2	Fig. 53
AbD 90-230 MS90-104	IM139682	Barrel-shaped hematite balance weight. Weight 1.4 gm.	l = 1.4 cm d = 0.5 cm	8H	852.85, 568.22	13	48	0	2	Fig. 71
AbD 90-231		Glass ? handle ? bottle top. Opaque brown-gray damage. Probably the stem of a glass or dish.	l = 3.9 cm w = 1.6 cm th = 1.6 cm	7G	792.96, 694.26	25	25	0	3	
AbD 90-232		Flint blade with denticulate edges.	l = 2.9 cm w = 1.3 cm th = 0.3 cm	8H	886.52, 542.86	15	29	92	2	Fig. 74
AbD 90-233		Broken limestone cuboid with one face showing traces of wear.	l = 4.4 cm w = 3.8 cm h = 2.0 cm	7H	715.64, 583.41	10	41	0	2	
AbD 90-234 MS90-105	IM139683	Copper/bronze amulet in the shape of a seated dog. No ring for suspension.	l = 2.2 cm h = 1.8 cm th = 0.9 cm	7G	702.79, 652.17	3	15	31	2	Fig. 64

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	•
AbD 90-235		Roughly rectangular grinder of dark grey stone with orange veins, traces of wear on ends.	l = 8.5 cm w = 5.7 cm th = 3.4 cm	7G	752.53, 615.84	20	45	0	2	
AbD 90-236 MS90-106	IM139684	Cylindrical bead of black stone.	d = 0.4 cm l = 0.7 cm hd = 0.1 cm	71	752.16, 403.96	20	18	0	2	
AbD 90-237		Very eroded model wheel. Medium buff ware with grit tem- per.	d = 6 cm th = 2.1 cm hd = 1.1 cm	7G	794.40, 655.74	1	10	14	2	
AbD 90-238		Flint nodule with a couple of flakes struck off.	l = 5.6 cm w = 3.7 cm th = 2.7 cm	71	756.77, 421.60	18	31	0	2	
AbD 90-239		Roughly rectangular grinder of fine grained layered stone, sides are polished and there are signs of wear on both ends.	l = 8.5 cm w = 6.2 cm th = 3.9 cm	71	751.92, 411.68	20	45	0	2	Fig. 76
AbD 90-240		Translucent green glass handle, flattened with indentations.	l = 2.9 cm w = 1.0 cm th = 0.4 cm	7K	775.94, 273.74	25	20	84	3	
AbD 90-241		Limestone grinder in the shape of a truncated cone, traces of wear on narrow end.	l = 9.3 cm w = 6.3 cm th = 5.0 cm	7K	751.82, 271.82	20	45	0	2	Fig. 76
AbD 90-242		Broken basalt cuboid, no visible signs of wear.	l = 3.7 cm w = 3.8 cm h = 1.9 cm	7K	774.12, 259.35	20	41	0	2	
AbD 90-243		Flattened quartzite grinder with wear on two faces and one end.	l = 5.9 cm w = 5.9 cm th = 4.1 cm	7K	796.87, 283.39	20	44	0	2	
AbD 90-244		Model wheel, slightly broken. Medium fine orange ware with fine black grit temper.	d = 9.2 cm th = 2.2 cm hd = 1.3 cm	6K	686.46, 282.00	1	10	14	2	
AbD 90-245		Broken basalt cuboid, very smooth but with no apparent signs of wear.	l = 4.1 cm w = 3.9 cm th = 1.7 cm	7K	792.77, 287.11	20	41	0	2	
AbD 90-246		Rim fragment of a deep alabaster bowl with out-turned rim.	l = 4.1 cm w = 3.2 cm th = 1.7 cm	7J	762.40, 346.72	15	1	93	2	
AbD 90-247		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.3–1.5 cm th = 0.15 cm	7K	725.57, 244.58	3	53	0	3	
AbD 90-248		Flint blade with retouched edges.	l = 4.3 cm w = 1.6 cm th = 0.3 cm	7G	711.37, 644.07	18	29	0	2	Fig. 74
AbD 90-250		Denticulate flint blade.	l = 2.5 cm w = 1.3 cm th = 0.4 cm	7G	756.74, 609.58	18	29	0	2	
AbD 90-251		Curved fragment of copper/ bronze, probably part of a bracelet.	l = 4.3 cm d = 0.6 cm	7I	748.40, 491.90	3	20	0	2	
AbD 90-252 MS90-108	IM139712/1	Discoid bead of light brown stone.	d = 0.7 cm h = 0.1 cm hd = 0.2 cm	8G	811.17, 688.33	20	18	0	2	
AbD 90-253		Quartzite cuboid stone with traces of wear on most surfaces.	l = 3.9 cm w = 3.9 cm th = 3.7 cm	7K	775.14, 288.08	11	41	0	2	
AbD 90-254 MS90-109		Ovoid carnelian bead, ends chipped.	d = 0.6 cm l = 1.2 cm hd = 0.1 cm	7K	752.05, 297.57	12	18	0	2	
AbD 90-255		Obsidian blade with little or no retouch.	l = 2.2 cm w = 1.6 cm th = 0.4 cm	7G	752.90, 640.67	17	29	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 90-256		Head of a copper/bronze pin. Both head and shaft are square in cross-section. End broken off.	l = 3.1 cm w = 0.7 cm th = 0.4 cm	8G	804.90, 683.68	3	34	0	2	
AbD 90-257		Broken macehead of dark grey stone with white bands.	l = 5.0 cm w = 4.4 cm th = 3.5 cm hd = 0.7 cm	7J	749.32, 307.55	20	52	0	2	
AbD 90-258		Rim fragment of a deep bowl of hard olive green bubbly stone.	rd = 8.0 cm h = 5.3 cm th = 0.8 cm	7K	766.12, 277.45	20	1	91	2	
AbD 90-259		Roughly D-shaped grinder of pinkish-grey limestone, one end broken, other end has traces of wear.	l = 7.0 cm w = 6.1 cm th = 4.0 cm	7H	728.73, 590.93	20	45	0	2	
AbD 90-260		Flint blade with little or no retouch.	l = 2.9 cm w = 1.1 cm th = 0.3 cm	7K	755.50, 205.64	18	29	0	2	
AbD 90-261		Sherd of a limestone vessel, flat, perhaps part of a base.	l = 4.8 cm w = 3.4 cm th = 1.9 cm	7G	776.36, 647.17	10	1	0	2	
AbD 90-262		Limestone grinder with a triangu- lar section, signs of wear on one end, other end broken off.	l = 5.8 cm w = 5.4 cm th = 2.6 cm	7K	750.61, 273.82	20	45	0	2	
AbD 90-264		Hub of a model wheel. Medium buff ware with chaff and fine black grit temper.	d > 4.3 cm th = 2.0 cm hd = 0.7 cm	7K	767.26, 263.25	1	10	14	2	
AbD 90-266		Chipped shale celt.	l = 8.7 cm w = 6.0 cm th = 1.9 cm	7J	754.30, 358.28	20	32	0	2	
AbD 90-267		Neck of a green glass bottle.	rd = 1.4 cm h = 2.6 cm th = 0.15 cm	7J	734.59, 381.19	25	25	0	3	
AbD 90-270		One half of a limestone donut- shaped stone.	l = 8.4 cm w = 5.6 cm th = 3.3 cm hd = 2.7 cm	7J	728.53, 383.17	10	47	0	2	
AbD 90-271		Very eroded model wheel with rim broken off. Medium orange ware with sand temper.	d > 5.4 cm th = 2.2 cm hd = 0.8 cm	6K	683.73, 263.27	1	10	14	2	
AbD 90-272		Model chariot base with seat bro- ken off. Medium-coarse greenish- buff ware with rare chaff temper.	l = 6.6 cm w = 6.4 cm h = 3.0 cm hd = 1.0 cm	7J	799.19, 394.30	1	9	0	2	
AbD 90-273		Flat oval piece of fossiliferous limestone with chipping on one edge.	l = 6.05 cm w = 5.1 cm th = 1.6 cm	7K	751.02, 299.07	10	55	0	2	Fig. 77
AbD 90-275		One end of a flat, rectangular piece of copper/bronze, part of a blade perhaps.	l = 2.8 cm w = 2.6 cm th = 0.2 cm	7J	716.02, 367.16	3	60	0	2	
AbD 90-276 MS90-111	IM139712/2	Round carnelian bead, flattened.	d = 0.8 cm h = 0.6 cm hd = 0.1 cm	7J	707.91, 326.75	12	18	0	2	
AbD 90-278		Part of a large limestone grinding stone.	l = 8.4 cm w = 8.6 cm th = 3.2 cm	7J	734.61, 374.93	10	54	0	2	
AbD 90-279		Rounded base to a closed vessel of white alabaster or quartzite.	d = 6.5 cm h = 4.5 cm th = 0.3–1.6 cm	7J	790.71, 353.73	15	3	95	2	
AbD 90-280		Quartzite cuboid with wear on only a single face.	l = 5.1 cm w = 5.0 cm h = 4.7 cm	6K	685.07, 281.81	11	41	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 90-281 MS90-112	IM139712/3	Round carnelian bead, flattened and chipped.	d = 0.7 cm h = 0.4 cm hd = 0.15 cm	7J	713.55, 304.76	12	18	0	2	
AbD 90-282 MS90-113	IM139714	Model chair with male and female figures, heads and base of legs bro- ken off. Medium greenish ware with fine black grit temper.	h = 5.5 cm w = 5.8 cm th = 3.8 cm	7K	702.89, 283.41	1	11	43	2	Fig. 54
AbD 90-289 MS90-120		Flat, rectangular copper/bronze object, rounded on one end, with a flange at the other.	l = 2.6 cm w = 1.7 cm th = 0.3 cm	7K	751.52, 245.94	3	55	0	2	
AbD 90-290		Broken black glass bead with red and white swirls.	l = 1.0 cm d = 0.7 cm th = 0.2 cm	8G	833.38, 616.53	25	18	0	3	
AbD 90-291		Broken and eroded model chariot base. Medium greenish-buff ware with chaff temper.	l = 6.7 cm w = 6.1 cm h = 3.1 cm hd = 1.1 cm	7G	797.07, 648.18	1	9	0	2	
AbD 90-292		Broken limestone mortar.	l = 10.7 cm w = 7.2 cm th = 6.4 cm	7K	762.97, 296.37	10	42	0	2	
AbD 90-293		Copper/bronze disk with two small flanges on opposite sides.	d = 2.0–2.1 cm th = 0.3 cm	8G	876.90, 638.53	3	24	0	2	
AbD 90-294		Trapezoidal grinder of dark grey stone with white inclusions, bro- ken. Traces of wear on two sides.	l = 5.8 cm w = 4.8 cm th = 4.6 cm	7K	765.79, 265.28	20	44	0	2	
AbD 90-295 MS90-121		Old Babylonian goblet. Medium buff ware with grit temper. Black painted band on interior and exte- rior of rim.	rd = $10.5-11$ cm bd = $6-6.3$ cm h = 23.1 cm	6C	648.23, 1053.71	1	2	1	2	Fig. 50
AbD 90-296 MS90-122	IM139686	Model chariot shield, top broken off. Design shows the figure of Nergal holding lion sickle, with one foot on a platform. Zigzag design around hole for yoke pole. Medium greenish ware with grit temper.	h = 7.6 cm w = 5 cm th = 1.6 cm hd = 0.8 cm	8K	824.32, 280.63	1	8	7	2	Fig. 55
AbD 90-297		Model chariot base with seat bro- ken off. Medium greenish-buff ware with chaff temper.	l = 4.5 cm w = 5.9 cm th = 4.5 cm hd = 1.6 cm	8G	887.93, 623.18	1	9	0	2	
AbD 90-298		Broken shell ring.	d = 2.4 cm th = 0.3 cm hd = 1.8 cm	81	897.46, 470.48	30	19	0	2	
AbD 90-299		Copper/bronze disk, probably a coin but no impression preserved, broken.	d = 0.8 cm th = 0.1 cm	8H	898.65, 555.44	3	53	0	3	
AbD 90-300 MS90-123		Eroded model chariot shield, bro- ken off at top and bottom. Figure of Shamash can just be made out. Medium buff-green ware with chaff temper.	h = 9.7 cm w = 5.2 cm th = 1.6 cm hd = 0.4 cm	4G	443.47, 625.67	1	8	6	2	
AbD 90-301 MS90-124	IM139718/1	Baked clay lentoid spindle whorl. Fine buff ware with fine black grit temper.	d = 3.1 cm h = 0.8 cm hd = 0.5 cm	8J	806.08, 301.97	1	50	0	2	
AbD 90-302		Limestone cuboid with slight traces of wear on all surfaces.	l = 4.9 cm w = 4.65 cm h = 4.7 cm	8L	869.16, 165.26	20	41	0	2	
AbD 90-303 MS90-125	IM139716/1	Discoid bead of dark grey stone.	d = 0.95 cm h = 0.4 cm hd = 0.3 cm	8L	864.15, 160.99	20	18	0	2	
AbD 90-304		Knob to a semi-transparent glass lid.	l = 1.6 cm w = 1.3 cm th = 1.2 cm	9L	928.89, 185.21	25	25	0	3	

Object #	IM #	Description	Size	Square	Findspot		Co	oding		Ref
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AbD 90-305		Broken greenstone cuboid, with signs of wear on top an bottom edges.	l = 5.1 cm w = 3.0 cm h = 3.5 cm	8J	882.70, 390.03	20	41	0	2	
AbD 90-306		Tip of a copper/bronze chisel.	l = 2.6 cm w = 0.4 cm th = 0.3 cm	9L	933.44, 170.03	3	39	0	2	Fig. 65
AbD 90-307		Curved fragment of copper/ bronze, square in cross-section, flattened at one end, broken at the other.	l = 1.6 cm w = 0.4 cm th = 0.4 cm	8J	833.52, 328.25	3	40	0	2	
AbD 90-308		Copper/bronze sickle, part of blade and fragment of handle sur- viving; the two pieces do not join.	l = 9.2, 1.4 cm w = 4.1, 1.5 cm th = 0.2, 0.3 cm	7G	722.20, 684.28	3	33	0	2	
AbD 90-310 MS90-127	IM139688	Duck weight of fine grained grey limestone, incisions on neck, head broken off.	l = 7.5 cm w = 5.2 cm th = 3.4 cm	71	710.75, 472.19	10	49	0	2	Fig. 71
AbD 90-312		Flint blade with little or no retouch.	l = 4.0 cm w = 1.2 cm th = 0.2 cm	71	727.32, 448.92	18	29	0	2	
AbD 90-313		Quartzite cuboid with one pol- ished edge and the opposite edge pecked.	l = 4.4 cm w = 4.3 cm h = 3.8 cm	7K	739.04, 271.40	11	41	0	2	
AbD 90-314		Quartzite cuboid, with signs of wear on all sides.	l = 4.6 cm w = 4.7 cm h = 4.9 cm	7K	762.16, 265.71	19	41	0	2	
AbD 90-316		Discoid piece of copper/bronze with trace of flanges on both sides.	l = 1.5 cm w = 1.2 cm th = 0.2 cm	8K	870.13, 280.26	3	24	0	2	
AbD 90-317		Broken cuboid of dense dark grey stone.	l = 5.4 cm w = 5.4 cm h = 3.5 cm	61	860.07, 493.97	20	41	0	2	
AbD 90-318		Eroded model wheel. Medium orange ware with chaff temper.	d = 4-6 cm th = 2.2 cm hd = .758 cm	81	864.32, 458.69	1	10	14	2	
AbD 90-319		Broken model wheel. Medium- coarse ware with chaff temper.	l = 6.2 cm w = 2.9 cm th = 2.7 cm hd = 2.1 cm	8H	860.47, 582.79	1	10	13	2	
AbD 90-320		Roughly rectangular grinder of fine grained grey stone with signs of wear on both ends.	l = 7.0 cm w = 4.7 cm th = 3.4 cm	8J	884.83, 381.05	20	45	0	2	
AbD 90-321		Quartzite cuboid with wear on one side and chipping on the opposite side.	l = 5.1 cm w = 4.7 cm h = 4.4 cm	7K	722.70, 296.14	11	41	0	2	
AbD 90-322		Flat piece of copper/bronze, part of either a large blade or perhaps a bowl.	l = 5.8 cm w = 4.95 cm th = 0.3 cm	7K	781.33, 279.10	3	60	0	2	
AbD 90-323		Quartzite cuboid with several faces showing traces of wear.	l = 4.9 cm w = 4.6 cm h = 4.7 cm	7K	774.57, 230.31	11	41	0	2	
AbD 90-324		Quartzite cuboid with traces of wear on several surfaces.	l = 3.8 cm w = 3.8 cm h = 3.6 cm	7K	746.69, 231.40	11	41	0	2	
AbD 90-325		Fragment of a copper/bronze blade with one hafting hole pre- served.	l = 3.1 cm w = 1.9 cm th = 0.2 cm hd = 0.4 cm	7J	799.35, 335.61	3	29	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 90-326 MS90-129	IM139690	Worn plaque showing presentation scene, divine figure to right and very top broken off. Medium buff ware with fine grit temper.	h = 6.6 cm w = 5.4 cm th = 0.6-1.8 cm	7K	787.52, 261.01	1	14	20	2	
AbD 90-327	IM139691	Most of a model wheel. Coarse greenish-buff ware with chaff temper.	d = 9 cm th = 2.3 cm hd = 1.1 cm	7H	716.07, 589.99	1	10	14	2	
AbD 90-328 MS90-130		Plaque showing presentation scene, only the heads of the figures and three solar symbols preserved. Medium-fine green ware with fine black grit temper.	h = 3.8 cm w = 5 cm th = 0.7–1.3 cm	7K	772.02, 288.44	1	14	20	2	Fig. 53
AbD 90-329		Broken shell ring.	d = 2.5 cm th = 0.35 cm hd = 1.8 cm	7J	702.49, 330.88	30	19	0	2	
AbD 90-330		Retouched flint blade.	l = 2.7 cm w = 1.4 cm th = 0.3 cm	7J	700.37, 301.23	18	29	0	2	
AbD 90-331		Most of a model chariot base. Medium-coarse buff ware with fine black grit temper.	l = 5.4 cm w = 6.9 cm h = 6.0 cm hd = 1.4 cm	81	838.99, 411.71	1	9	0	2	
AbD 90-332		Trapezoidal quartzite grinder with wear on two sides.	l = 7.1 cm w = 6.5 cm th = 4.6 cm	81	804.20, 496.05	11	44	0	2	
AbD 90-333		Broken shale celt.	l = 5.5 cm w = 4.7 cm th = 2.5 cm	71	772.21, 458.37	20	32	0	2	
AbD 90-334 MS90-131	IM139719/1	Round carnelian bead, flattened.	d = 0.5 cm h = 0.3 cm hd = 0.2 cm	8G	816.13, 684.56	12	18	0	2	
AbD 90-335		Eroded model chariot wheel. Medium orange-buff ware with chaff temper and buff slip.	d > 8.4 cm th = 3.1 cm hd = 0.9 cm	71	714.34, 400.52	1	10	14	2	
AbD 90-337		Half of a cylindrical green frit bead.	d = 0.9 cm h = 0.6 cm hd = 0.15 cm	7J	749.75, 352.30	24	18	0	2	
AbD 90-340		Copper/bronze spearpoint with central flange and both ends bro- ken off.	l = 5.1 cm w = 2.3 cm th = 0.4 cm	7J	794.57, 333.84	3	38	0	2	
AbD 90-341		One half of a limestone donut- shaped stone.	l = 8.4 cm w = 4.3 cm h = 2.4 cm hd = ca 2.4 cm	7J	714.96, 381.94	10	47	0	2	
AbD 90-343		Model chariot shield, seat broken off. Medium-fine orange ware with coarse grit temper.	l = 5.8 cm w = 5.7 cm th = 2.9 cm hd = 0.8 cm	8H	846.07, 522.00	1	9	0	2	
AbD 90-344		Sheet of copper/bronze rolled into a cone and pierced several times,end broken off. Probably a strainer for beer drinking	l = 4.8 cm w = 1.2 cm th = 0.2 cm	7K	717.08, 244.65	3	55	0	2	Fig. 65
AbD 90-345		Quartzite cuboid grinder with traces of wear on several faces.	l = 4.0 cm w = 4.0 cm th = 4.1 cm	71	768.30, 475.75	20	41	0	2	
AbD 90-346		Broken shell ring.	l = 1.7 cm w = 0.2 cm th = 0.2 cm	81	830.00, 423.79	30	19	0	2	
AbD 90-347		Rim fragment of a simple bowl in yellow quartzite with orange streaks.	d = 13 cm h = 2.7 cm th = 1.2 cm	7J	712.38, 325.92	27	1	92	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	-
AbD 90-348		One third of a limestone donut- shaped stone.	l = 5.8 cm w = 5.4 cm th = 4.5 cm	7J	789.29, 351.76	10	47	0	2	
AbD 90-349		Tapering rectilinear quartzite grinder with signs of wear on both ends.	l = 14.9 cm w = 4.3 cm th = 4.4 cm	7H	727.61, 555.13	20	45	0	2	
AbD 90-350		Broken quartzite cuboid, badly worn.	l = 4.2 cm w = 4.2 cm h = 3.9 cm	7K	747.26, 248.41	11	41	0	2	
AbD 90-351		Most of a model wheel. Fine buff ware with fine black grit temper.	d > 6.1 cm th = 1.1 cm hd = 0.8 cm	7H	771.29, 540.88	1	10	14	2	
AbD 90-352		Base fragment of a bowl of cream colored quartzite with orange veins.	bd = 6 cm h = 1.8 cm th = 0.8 cm	7J	774.21, 337.03	27	1	92	2	
AbD 90-356		Quartzite cuboid, no traces of wear.	l = 4.7 cm w = 4.8 cm h = 4.7 cm	91	900.93, 404.77	11	41	0	2	
AbD 90-357 MS90-134	IM139692	Nude female plaque, legs broken off. Plain figure with shoulder- length hair. Fine greenish-buff ware with fine black grit temper.	h = 4.3 cm w = 5.6 cm th = 1.75 cm	9J	934.78, 313.97	1	14	16	2	Fig. 53
AbD 90-358		Two thirds of a model wheel. Medium greenish buff ware with chaff temper.	d = 8.9 cm th = 2.5 cm hd = 1.2 cm	8L	876.49, 183.19	1	10	14	2	
AbD 90-359		Retouched obsidian blade.	l = 2.0 cm w = 1.2 cm th = 0.4 cm	91	941.85, 418.05	17	29	0	2	Fig. 74
AbD 90-360		Flat piece of copper/bronze.	l = 2.1 cm w = 2.1 cm th = 0.2 cm	8K	817.54, 290.60	3	60	0	2	
AbD 90-361		Obsidian blade with little or no retouch.	l = 2.6 cm w = 1.4 cm th = 0.3 cm	9K	942.79, 287.08	17	29	0	2	
AbD 90-362		Base fragment of an alabaster vat.	bd = ca 9 cm $h = 4.3 cm$ $th = 2.6 cm$	9J	926.68, 351.71	15	1	94	2	
AbD 90-363		Tip of a copper/bronze chisel.	l = 3.5 cm d = 0.45 cm	9J	969.40, 358.69	3	35	0	2	Fig. 65
AbD 90-364		Fragment of a black glass bracelet with faint orange-brown and white trails, circular in cross sec- tion.	l = 5.6 cm d = 0.6 cm	9Ј	997.80, 321.76	25	20	83	3	
AbD 90-366		Circular bead with flat bottom of grey-brown stone, broken.	d = 1.4 cm h = 0.75 cm hd = 0.4 cm	9K	943.55, 275.50	20	18	0	2	
AbD 90-367		Pierced basalt weight (?), broken, subrectangular in shape.	l = 4.4 cm w = 3.3 cm th = 1.5 cm hd = 0.4 cm	9H	957.38, 507.24	20	68	0	2	Fig. 73
AbD 90-368		One half of a globular blue glass bead.	d = 0.9 cm h = 0.5 cm hd = 0.3 cm	9J	950.19, 342.75	25	18	0	3	
AbD 90-369		Roughly rectangular quartzite grinder with traces of wear on both ends.	l = 7.4 cm w = 5.7 cm th = 5.0 cm	7K	742.23, 243.95	11	45	0	2	
AbD 90-370		Sherd of a vessel of translucent yel- low-green quartzite.	l = 7.0 cm w = 3.1 cm th = 1.1 cm	7H	776.19, 521.10	27	1	0	2	
AbD 90-371		Broken shell ring.	d = 2.7 cm th = 0.4 cm	9J	918.92, 310.76	30	19	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 90-372		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.4 cm th = 0.2 cm	9K	968.55, 279.41	3	53	0	3	
AbD 90-373		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.0–1.1 cm th = 0.1 cm	9J	970.80, 353.99	3	53	0	3	
AbD 90-374		Limestone donut-shaped stone, somewhat oval in shape.	l = 8.1 cm w = 7.3 cm h = 3.6 cm hd = 2.4 cm	71	774.13, 482.73	10	47	0	2	Fig. 72
AbD 90-375		Roughly trapezoidal quartzite grinder with traces of wear on one end.	l = 4.7 cm w = 3.4 cm th = 3.0 cm	81	837.95, 497.89	11	45	0	2	
AbD 90-376		Copper/bronze pin with most of head intact, end broken off. Cross- section is square by the head, round nearer the tip.	l = 4.95 cm w = 1.2 cm th = 0.9 cm	8K	823.33, 264.35	3	39	0	2	
AbD 90-377		Base sherd of a bowl of yellow- orange quartzite.	bd = 16 cm h = 2.6 cm th = 1.5 cm	71	714.59, 427.71	27	1	92	2	
AbD 90-378		Top of the seat of a model chariot base. Medium greenish-buff ware with chaff temper.	l = 3.4 cm w = 2.2 cm th = 1.57 cm hd = 1.13 cm	9H	980.24, 203.22	1	9	0	2	
AbD 90-379		One third of a limestone donut- shaped stone.	l = 7.6 cm w = 3.6 cm th = 4.3 cm	7J	759.75, 312.97	10	47	0	2	
AbD 90-380 MS90-135	IM139719/2	Spherical carnelian bead.	d = 0.75 cm h = 0.5 cm	8K	819.96, 289.07	12	18	0	2	
AbD 90-381		Flatish piece of copper/bronze with circular grooves on one edge, perhaps part of a bowl.	l = 4.2 cm w = 2.1 cm th = 0.6 cm	9J	924.26, 361.38	3	60	0	2	
AbD 90-382		Model wheel, broken. Medium greenish-buff ware with chaff tem- per.	d = 9-10 cm th = 2.4 cm hd = 1.3-1.5 cm	91	900.91, 433.29	1	10	14	2	
AbD 90-383		Fragment of a pierced rectangular limestone weight.	l = 4.2 cm w = 3.7 cm th = 2.6 cm	7K	730.68, 287.87	10	68	0	2	
AbD 90-384		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.2–1.4 cm th = 0.1 cm	8L	845.48, 178.20	3	53	0	3	
AbD 90-385 MS90-136		Discoid bead of dark grey stone.	d = 0.7 cm h = 2.5 cm hd 0.2 cm	9K	942.95, 214.60	20	18	0	2	
AbD 90-386		Shaft fragment of a copper/bronze pin, tapers slightly towards one end and becomes square in cross sec- tion.	l = 5.2 cm d = 1.0 cm	81	802.33, 479.75	3	34	0	2	
AbD 90-387		Copper/bronze rod with a small flange at one end. Very well pre- served.	l = 2.5 cm w = 0.4 cm th = 0.3 cm	9J	900.35, 391.10	3	39	0	3	Fig. 65
AbD 90-388 MS90-137		Discoid bead of white stone.	d = 0.8 cm h = 0.3 cm hd = 0.25 cm	9J	976.94, 354.03	15	18	0	2	
AbD 90-389		Rim fragment of a pot in white quartzite with orange streaks, rim turned outward.	rd = 17 cm h = 2.0 cm th = 1.0 cm	6K	600.52, 272.14	15	1	90	2	
AbD 90-390 MS90-138		Spherical carnelian bead.	d = 0.4 cm h = 0.5 cm hd = 0.1 cm	8K	833.91, 296.76	12	18	0	2	
AbD 90-391		End of a greenstone celt.	l = 4.2 cm w = 3.3 cm th = 1.0 cm	9J	927.66, 351.93	20	32	0	2	

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AbD 90-392		Quartzite cuboid with signs of wear on two surfaces.	l = 4.3 cm w = 4.6 cm h = 4.3 cm	91	969.08, 490.08	19	41	0	2	Fig. 76
AbD 90-393		Trapezoidal quartzite grinder.	l = 5.45 cm w = 6.4 cm th = 4.8 cm	8H	856.95, 516.62	20	44	0	2	
AbD 90-394		Quartzite cuboid with traces of wear on two surfaces.	l = 4.5 cm w = 4.5 cm h = 4.4 cm	8K	896.60, 222.16	11	41	0	2	
AbD 90-395		Most of a model wheel. Medium orange ware with chaff temper.	d = 10.2 cm th = 2.4 cm hd = 1.2 cm	9L	939.06, 171.00	1	10	14	2	
AbD 90-396		D-shaped fine-grained grey- brown grinder with a slightly pit- ted surface.	l = 7.2 cm w = 7.5 cm th = 3.4 cm	7K	739.96, 235.26	20	45	0	2	
AbD 90-397 MS90-139	IM139719/3	Round, flattened carnelian bead.	d = 0.7 cm h = 0.3 cm hd = 0.05 cm	8L	864.93, 175.43	12	18	0	2	
AbD 90-398		Sherd of a greenstone vessel.	l = 6.0 cm w = 5.1 cm th = 1.9 cm	8J	808.64, 334.63	20	1	0	2	
AbD 90-399		Sherd of an alabaster vessel.	l = 2.7 cm w = 2.0 cm th = 0.8 cm	8K	817.65, 253.30	15	1	0	2	
AbD 90-400		Quartzite cuboid with traces of wear on several faces.	l = 4.1 cm w = 3.9 cm h = 4.1 cm	8J	827.43, 316.33	11	41	0	2	
AbD 90-401		Cuboid of medium grained black and red stone, traces of wear on two sides.	l = 5.4 cm w = 5.3 cm h = 4.3 cm	91	905.27, 445.14	20	41	0	2	
AbD 90-420 MS90-157		Eroded model chariot shield with top and bottom broken off. Design shows traces of lion mace. Medium buff ware with chaff tem- per.	h = 6.1 cm w = 6.4 cm th = 1.5 cm hd = 0.4 cm	8E	879.51, 837.01	1	8	9	2	
AbD 90-421		Flint blade with little or no retouch.	l = 2.5 cm w = 1.2 cm th = 0.3 cm	10F	1032.86, 724.49	18	29	0	2	
AbD 90-422		Flint blade with little or no retouch.	l = 2.5 cm w = 0.9 cm th = 0.2 cm	10J	1057.43, 395.29	18	29	0	2	
AbD 90-423		Eroded and broken model wheel. Medium buff ware with chaff tem- per.	d > 5.4 cm th = 1.6 cm hd = 0.7 cm	10G	1063.31, 622.32	1	10	14	2	
AbD 90-424		Obsidian blade with little or no retouch.	l = 1.8 cm w = 1.0 cm th = 0.3 cm	10J	1098.78, 369.95	17	29	0	2	
AbD 90-425		Retouched obsidian blade.	l = 2.1 cm w = 1.3 cm th = 0.2 cm	10G	1061.26, 618.93	17	29	0	2	
AbD 90-426 MS90-158		Discoid bead of dark grey stone	d = 0.5 cm th = 0.1 cm hd = 0.1 cm	10F	1087.89, 774.20	20	18	0	2	
AbD 90-427		Fragment of a dark blue spiral glass bracelet, circular cross section but with one end squared off.	l = 4.0 cm d = 0.5 cm	10E	1031.70, 855.52	25	20	81	3	
AbD 90-428 MS90-159	IM139719/4	Spherical carnelian bead.	d = 0.7 cm h = 0.6 cm hd = 0.1 cm	8G	804.30, 697.21	12	18	0	2	

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AbD 90-429		Cuboid stone with traces of wear on several surfaces.	l = 3.2 cm w = 3.1 cm h = 3.1 cm	91	910.35, 468.96	20	41	0	2	
AbD 90-430 MS90-160	IM139716/2	Round limestone bead, flattened.	d = 0.9 cm h = 0.6 cm hd = 0.1 cm	8G	854.62, 695.14	10	18	0	2	
AbD 90-431		Flint blade with little or no retouch.	l = 1.5 cm w = 0.7 cm th = 0.1 cm	10G	1075.27, 647.17	18	29	0	2	
AbD 90-432 MS90-161	IM139713/1	Barrel shaped hematite balance weight. Weight 2.9 gm	l = 2.2 cm w = 0.7 cm	8E	856.33, 821.59	13	48	0	2	Fig. 71
AbD 90-433		Broken quartzite cuboid with traces of wear on several faces.	l = 4.6 cm w = 4.7 cm h = 3.2 cm	8D	879.63, 903.18	11	41	0	2	
AbD 90-434 MS90-162	IM139716/3	Cylindrical bead of dark grey stone.	d = 0.8 cm h = 0.6 cm hd = 0.2 cm	10J	1053.16, 381.19	20	18	0	2	
AbD 90-435 MS90-163	IM139716/2	Cylindrical carnelian bead.	d = 0.35 cm l = 0.8 cm hd = 0.1 cm	10G	1071.76, 611.50	12	18	0	2	
AbD 90-436		Eroded model wheel. Medium buff ware with fine black grit tem- per.	d = 7.2 cm th = 3.3 cm hd = 0.7 cm	9D	980.36, 967.07	1	10	14	2	
AbD 90-437		Broken quartzite cuboid with traces of wear on several faces.	l = 4.2 cm w = 3.9 cm h = 2.7 cm	71	716.52, 428.83	11	41	0	2	
AbD 90-438		Black glass spiral bracelet with yel- low trails, circular in cross section but with one end square.	l = 4.3 cm d = 0.5 cm	8F	836.91, 788.77	25	20	84	3	
AbD 90-439		Roughly rectangular limestone grinder with traces of wear on both ends.	l = 7.6 cm w = 6.1 cm th = 3.8 cm	10G	1097.75, 609.94	10	45	0	2	
AbD 90-440		Fragment of a semi-translucent green glass bracelet with yellow and orange trails, roughly triangu- lar in section.	l = 4.2 cm w = 0.4 cm th = 0.3 cm	8E	885.77, 870.79	25	20	80	3	
AbD 90-441 MS90-164	IM139719/5	Tear-drop shaped balance weight of alabaster.	d = .8 cm h = 1.05 cm	8D	870.64, 919.58	15	48	0	2	Fig. 71
AbD 90-442		Broken model wheel. Medium orange with are fine black grit and chaff temper.	d = 6.8 cm th = 2.5 cm hd = 0.8 cm	9C	918.88, 1018.38	1	10	14	2	
AbD 90-443 MS90-165	IM139716/4	Discoid lapis lazuli bead.	d = 0.55 cm h = 0.2 cm hd = 0.2 cm	8D	879.30, 902.21	21	18	0	2	
AbD 90-444		Limestone grinder in the shape of a truncated cone, wide end bro- ken, traces of wear on narrow end.	l = 8.7 cm w = 6.3 cm th = 5.4 cm	8J	876.69, 380.33	20	45	0	2	Fig. 76
AbD 90-445		One half of a model wheel. Medium buff ware with chaff tem- per.	d = 7.4 cm th = 2.9 cm hd = 1.0 cm	8E	824.86, 851.72	1	10	14	2	
AbD 90-446		Hub of a model wheel. Medium buff ware with fine black grit tem- per.	l = 5.9 cm w = 5.5 cm th = 2.4 cm hd = 1.0 cm	10G	1054.48, 601.68	1	10	14	2	
AbD 90-447		Obsidian blade with denticulate edges.	l = 2.3 cm w = 1.9 cm th = 0.1 cm	9C	942.23, 1030.19	17	29	0	2	Fig. 74
AbD 90-448		Limestone cuboid, surface flaking away so no traces of wear are pre- served.	l = 5.4 cm w = 5.1 cm h = 4.8 cm	10G	1068.26, 647.15	10	41	0	2	

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AbD 90-449		Broken shell ring.	d = 1.8 cm th = 0.2 cm	8K	836.00, 285.21	30	19	0	2	
AbD 90-450		Hub fragment of a model wheel. Medium buff ware with chaff tem- per.	l = 4.7 cm w = 3.8 cm th = 1.6 cm hd = 0.8 cm	9G	967.12, 654.35	1	10	14	2	
AbD 90-451		Faceted discoid hematite balance weight. Weight = 1.5 g.	l = 1.15 cm w = 1.1 cm th = 0.5 cm	10E	1018.46, 844.08	13	48	0	2	Fig. 71
AbD 90-452		Hub fragment of a model wheel. Medium buff ware with chaff tem- per.	l = 7.1 cm w = 4.6 cm th = 2.3 cm hd = 1.0 cm	91	944.50, 473.59	1	10	14	2	
AbD 90-453		Eroded model wheel, edges bro- ken off. Medium buff ware with chaff temper.	d > 8.2 cm th = 2 cm hd = 2.1 cm	9D	989.23, 934.11	1	10	13	2	
AbD 90-454		One third of a model wheel. Coarse pinkish-buff ware with chaff temper, cream slip.	d > 14 cm th = 4.3 cm hd = ca 3.0 cm	10G	1058.97, 634.62	1	10	13	2	
AbD 90-455 MS90-166		Cylinder seal of black stone show- ing presentation scene with nude female.	d = 1 cm l = 2.15 cm hd = 0.4 cm	11I	1107.90, 484.37	20	17	66	2	Fig. 69
AbD 90-456		Model wheel, all edges broken off. Medium buff ware with black grit temper.	d > 6 cm th = 2.65 hd = 1.8	10E	1013.44, 802.83	1	10	14	2	
AbD 90-457		Fragment of a fluted base of a translucent green glass vessel.	d = 8 cm h = 1.6 cm th = 1.1 cm	10F	1072.60, 765.74	25	25	0	3	
AbD 90-458		Eroded model wheel. Medium orange ware with fine grit and chaff temper and buff slip.	d = 9.2 cm th = 2.7 cm hd = 1.0 cm	8D	869.71, 913.67	1	10	14	2	
AbD 90-459		Model wheel, slightly chipped. Medium orange ware with fine black grit and chaff temper and buff slip.	d = 9.2 cm th = 1.8 cm hd = 0.7 cm	8D	879.77, 900.75	1	10	14	2	
AbD 90-460 MS90-167		Circular bead with flat bottom of black stone.	d = 0.55 cm h = 0.25 cm hd = 0.2 cm	8K	818.08, 258.06	20	18	0	2	
AbD 90-461 MS90-168		Ceramic bottle stop. Fine orange ware with traces of a buff slip and black grit temper.	w = 6.9 cm l = 7.5 cm	9G	924.15, 663.19	1	62	0	2	Fig. 51
AbD 90-462		Flint blade with one denticulate edge.	l = 1.8 cm w = 0.9 cm th = 0.2 cm	9F	927.97, 745.04	18	29	0	2	Fig. 74
AbD 90-463		Discoid bead of red-brown stone with black inclusions.	d = 2.5 cm th = 1.3 cm hd = 0.6 cm	10G	1053.23, 638.24	20	18	0	2	
AbD 90-464		Irregular grinder of fine grained brown stone, traces on wear on both ends.	l = 7.3 cm w = 5.4 cm th = 3.4 cm	10I	1091.62, 491.39	20	45	0	2	
AbD 90-465		Flat smoothed stone, broken, of fine grained purple stone.	l = 6.7 cm w = 3.8 cm th = 1.2 cm	9F	991.76, 791.30	20	56	0	2	
AbD 90-466		Flint blade with little or no retouch, broken.	l = 1.4 cm w = 1.7 cm th = 0.3 cm	9E	994.70, 800.97	18	29	0	2	
AbD 90-467 MS90-169	IM139694	Male plaque, probably nude, fac- ing right with left arm on chest. Lower limbs broken off. Medium green ware with chaff temper.	h = 6 cm w = 4.8 cm th = 1.6 cm	9E	924.54, 818.17	1	14	18	2	Fig. 53

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AbD 90-468		One half of a copper/bronze ring.	d = ca 2.4.cm th = 0.5 cm	9E	970.70, 831.29	3	19	0	2	
AbD 90-469		Fragment of a spiral dark green glass bracelet, circular in cross sec- tion.	l = 3.8 cm d = 0.7 cm	9F	917.41, 779.16	25	20	81	3	
AbD 90-470 MS90-170		Sherd of a simple shallow chlorite bowl.	rd = 22 cm h > 4 cm th = 0.9 cm	91	988.76, 415.08	20	1	92	2	
AbD 90-471		One half of a limestone donut- shaped stone, irregularly shaped.	l = 10.5 cm w = 5.7 cm th = 3.7 cm hd = 1.8 cm	10G	1075.25, 653.84	10	47	0	2	
AbD 90-472		Most of a model wheel. Medium coarse orange ware with chaff temper.	d = 9 cm th = 2 cm hd = 0.5 cm	8E	898.43, 890.96	1	10	14	2	
AbD 90-473		Fragment of a green glass bracelet with a yellow trail on the outside and a thin black trail on the inside, triangular in cross section.	l = 4.2 cm w = 0.4 cm th = 0.4 cm	8E	806.33, 842.07	25	20	80	3	
AbD 90-474		Discoid bead of dark grey stone.	d = 1.1 cm th = 0.7 cm hd =4 cm	10E	1039.80, 807.62	20	18	0	2	
AbD 90-475		Fragment of a semi-translucent green glass bracelet with exterior yellow and orange trails and a black trail on the inside, triangular in section.	l = 4.9 cm w = 0.4 cm th = 0.3 cm	8E	826.40, 895.94	25	20	80	3	
AbD 90-476 MS90-171	IM139619	Biconical carnelian bead.	d = 0.4 cm l = 0.7 cm hd = 0.1 cm	10F	1060.79, 732.74	12	18	0	2	
AbD 90-477		Shaft section of a copper/bronze rod or pin, slightly square cross- section.	l = 5.5 cm w = 0.5 cm th = 0.5 cm	9E	968.02, 880.24	3	39	0	2	
AbD 90-478 MS90-172	IM139719/7	Round, flattened carnelian bead.	d = 0.6 cm h = 0.3 cm hd = .1 cm	8F	852.50, 701.36	12	18	0	2	
AbD 90-479		Broken shell ring.	d = 2.5 cm th = 0.3 cm	9E	980.79, 830.16	30	19	0	2	
AbD 90-480		Small flat base to an alabaster vessel.	bd = 3.2 cm h = 1.6 cm th = 0.5 cm	8E	879.27, 817.64	15	3	0	2	
AbD 90-481		Denticulate obsidian blade.	l = 2.8 cm w = 1.1 cm th = 0.2 cm	10I	1049.17, 418.50	17	29	0	2	
AbD 90-482 MS90-173		Chipped hematite ovoid balance weight. Weight = 1.4 g	l = 1.95 cm d = 0.5 cm	10E	1077.84, 863.45	13	48	0	2	Fig. 71
AbD 90-483		Model wheel. Medium orange- buff ware with fine black grit and chaff temper and buff slip.	d = 7.3–7.5 cm th = 2.2 cm hd = 0.8 cm	91	925.66, 462.98	1	10	14	2	
AbD 90-484		Copper/bronze disk, probably a coin but no impression preserved.	d = 0.9 cm th = 0.3 cm	9G	979.13, 644.16	3	53	0	3	
AbD 90-485 MS90-174	IM139719/8	Spherical carnelian bead.	d = 0.75 cm h = 0.7 cm hd = 0.15 cm	10E	1081.05, 863.26	12	18	0	2	
AbD 90-486		Denticulate obsidian blade.	l = 2.2 cm w = 0.9 cm th = 0.2 cm	101	1082.21, 406.18	17	29	0	2	
AbD 90-487		Limestone grinder in the shape of a truncated cone, traces of wear on the narrower end.	l = 5.5 cm w = 4.8 cm th = 2.2 cm	10F	1086.45, 702.58	20	45	0	2	

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AbD 90-488		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.0–1.1 cm th = 0.3 cm	9G	930.06, 618.08	3	53	0	3	
AbD 90-489		Eye-shaped brown stone with natural circles, perhaps selected for its resemblance to a human eye.	l = 6.5 cm w = 4.3 cm th = 1.2 cm	9К	943.85, 274.96	20	55	5	2	
AbD 90-490		Denticulate flint blade.	l = 2.6 cm w = 1.2 cm th = 0.3 cm	101	1078.65, 447.85	18	29	0	2	Fig. 74
AbD 90-491		Most of a shallow limestone platter with at least two holes drilled in the sides.	rd = 14 cm bd = 12 cm h = 2.8 cm th = 1.6 cm hd = 0.5 cm	9D	945.28, 973.70	10	1	95	2	Fig. 68
AbD 90-492		Copper/bronze disk, probably a coin but no impression preserved.	d = 0.9-1.2 cm th = 0.2 cm	10I	1031.78, 425.36	3	53	0	3	
AbD 90-494		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.1–1.2 cm th = 0.2 cm	8E	843.43, 846.61	3	53	0	3	
AbD 90-495 MS90-175	IM139719/9	Spherical carnelian bead.	d = 0.6 cm h = 0.55 hd = 0.1 cm	91	925.05, 471.37	12	18	0	2	
AbD 90-496		Cuboid of layered stone, traces of wear on all surfaces.	l = 4.6 cm w = 4.4 cm h = 3.7 cm	8J	821.83, 365.61	20	41	0	2	
AbD 90-498		Base of a blue-grey glass bowl.	bd = 3 .0 cm h = 2.75 cm th = 0.5 cm	8K	821.48, 299.47	25	1	0	3	
AbD 90-499		Barrel-shaped balance weight of fine grained grey stone, slightly chipped. Weight = 2.0 g.	l = 2.5 cm d = 0.7 cm	9C	939.64, 1016.69	13	48	0	2	Fig. 71
AbD 90-500 MS90-178	IM139715	Brass (?) rod with rounded end. Other end is broken off beyond an area with decoration.	l = 6.2 cm d = 0.3-0.5 cm	9C	927.98, 1085.87	8	55	0	3	Fig. 64
AbD 90-501		Fragment of a green glass bracelet with orange-yellow and black trails and red and green splotches, trian- gular in section.	d = 7.8 cm w = 0.9 cm th = 0.6 cm	8E	832.96, 823.87	25	20	82	3	
AbD 90-502		Cylindrical fine grained grey stone, one end broken off, ring carved around preserved end, one shallow drill hole on surface, pierced at break.	l = 3.7 cm w = 1.5 cm th = 1.1 cm hd = 0.3 cm	9G	924.84, 638.75	20	55	0	2	Fig. 77
AbD 90-503		Hub of a model chariot wheel. Medium orange ware with grit temper.	l = 5.7 cm w = 5.4 cm th = 2.1 cm hd = 0.9 cm	8D	873.27, 977.56	1	10	14	2	
AbD 90-504		Most of a model wheel. Medium buff ware with fine black grit tem- per.	d = 5.9 cm th = 2.3 cm hd = 0.6 cm	91	940.55, 487.50	1	10	14	2	
AbD 90-505		Roughly oval grinder of medium- fine grained brown-grey stone with traces of wear on both ends	l = 9.3 cm w = 7.2 cm th = 5.6 cm	7G	744.25, 637.88	20	45	0	2	Fig. 76
AbD 90-506 MS90-179	IM139719/ 10	Spherical carnelian bead.	d = 0.5 cm h = 0.5 cm hd = .2 cm	8E	838.34, 808.77	12	18	0	2	
AbD 90-507		One half of a pierced double axe of fine grained grey-brown stone (diorite?).	l = 4.4 cm w = 4.2 cm th = 4.0 cm hd = 1.4 cm	9C	905.44, 1038.32	20	32	0	2	Fig. 73
AbD 90-508		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.0–1.3 cm th = 0.1 cm	11E	1116.57, 835.04	3	53	0	3	

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AbD 90-509		Shaft fragment of a copper/bronze pin or rod. May have more wire wrapped around the middle, or just a larger amount of corrosion.	l = 4.6 cm w = 1.0 cm th = 1.0 cm	9C	903.09, 998.90	3	39	0	2	
AbD 90-510		Broken model wheel. Medium orange ware with black grit tem- per.	d = 9.2 cm th = 3.1 cm hd = 0.9–1.0 cm	10G	1030.69, 616.55	1	10	14	2	
AbD 90-511		Round stone polished on all but one side. Made of smooth orange stone, not carnelian.	d = 2.4 cm th = 1.05 cm	10E	1055.00, 872.62	20	55	0	2	
AbD 90-512		Rim fragment of a deep bowl of light blue-grey stone.	rd = 10 cm h = 2.53 cm th = 0.7 cm	8K	804.82, 281.23	20	1	91	2	
AbD 90-513		Fragment of a green glass bracelet with orange-tan and yellow trails on exterior, black trail on interior, and undulating red trail on exte- rior, triangular in cross section.	l = 5.9 cm d = 0.6 cm	8E	857.91, 853.16	25	20	80	3	
AbD 90-514		Squat cylindrical carnelian bead, broken.	d = 0.6 cm l = 0.6 cm hd = 0.4 cm	11E	1117.64, 800.32	15	18	0	2	
AbD 90-515		Quartzite cuboid with traces of wear on several sides.	l = 3.8 cm w = 3.9 cm h = 4.0 cm	81	859.75, 454.22	11	41	0	2	
AbD 90-516 MS90-180	IM139695	Black stone cylinder seal depicting combat between mythological creatures.	l = 2.6 cm d = 1.1 cm hd = 0.2 cm	10F	1081.73, 770.97	20	17	68	2	Fig. 69
AbD 90-517		Elongated oval grinder of mottled grey, white and brown stone with traces of wear on both ends.	l = 10.1 cm w = 3.7 cm th = 3.4 cm	91	924.14, 463.19	20	45	0	2	Fig. 76
AbD 90-518		Cuboid of layered stone, traces of wear on several faces.	l = 4.5 cm w = 4.3 cm h = 4.2 cm	91	930.04, 487.66	20	41	0	2	
AbD 90-519		Sherd of an alabaster vessel.	l = 2.9 cm w = 2.7 cm th = 1.0 cm	10F	1046.43, 784.18	15	1	0	2	
AbD 90-520 MS90-181	IM139696	Head end of a copper/bronze nee- dle.	l = 16.5 cm d = 0.7 cm hd = 0.2 cm	9C	923.43, 1005.25	3	34	0	2	Fig. 65
AbD 90-521		Copper/bronze ring fragment.	d = 1.9 cm th = 0.3 cm	9D	954.57, 937.03	3	19	0	2	
AbD 90-522		Curved copper/bronze rod, bro- ken at both ends.	l = 2.3 cm d = 0.5 cm	10I	1060.84, 440.29	3	40	0	2	
AbD 90-523		Quartzite cuboid with traces of wear on several faces.	l = 4.8 cm w = 5.3 cm h = 4.9 cm	9C	927.04, 1004.27	11	41	0	2	
AbD 90-524 MS90-182	IM139697	Spiral copper/bronze ring.	d = 2.4 cm th = 0.9	8E	828.95, 859.44	3	19	0	2	Fig. 64
AbD 90-525 MS90-183	IM139719/ 11	Spherical bead of translucent yel- low-brown stone.	d = 1.3–1.4 cm h = 0.95 cm hd = 0.3 cm	11E	1129.55, 799.31	20	18	0	2	
AbD 90-526		Cuboid of layered quartzite with traces of wear on several faces.	l = 4. cm w = 4.5 cm h = 4.2 cm	8K	823.00, 250.20	11	41	0	2	
AbD 90-527		Base sherd of a bowl of white quartzite with thin brown veins.	bd = 1.8 cm h = 2.2 cm th = 1.4 cm	10D	1043.20, 949.30	27	1	92	2	
AbD 90-528 MS90-184	IM139719/ 12	Spherical carnelian bead.	d = 0.9 cm h = 0.8 cm hd = 0.2 cm	8F	828.97, 786.06	12	18	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 90-529 MS90-185		Copper/bronze spearpoint.	l = 10.4 cm w = 2.45 cm th = 0.45 cm	9C	938.78, 1004.49	3	38	0	2	Fig. 66
AbD 90-530		Cylindrical red-brown glass bead, chipped.	l = 1.8 cm d = 0.5 cm hd = 0.2-0.4 cm	6K	608.97, 279.98	25	18	0	3	
AbD 90-531		Sherd of a vessel of white stone with thin brown veins.	l = 2.3 cm w = 2.1 cm th = 1.1 cm	9G	987.43, 622.51	20	1	0	2	
AbD 90-532		Flat piece of copper/bronze.	l = 4.0 cm w = 3.75 cm th = 0.6 cm	7G	753.53, 614.01	3	60	0	2	
AbD 90-533		Sherd of a simple bowl of pink quartzite.	d = unknown $l = 3.2 cm$ $w = 2.0 cm$ $th = 0.8 cm$	6K	600.64, 258.67	26	1	92	2	
AbD 90-534		Sherd of a simple shallow alabaster bowl.	rd = 12 cm h > 2.8 cm th = 0.7 cm	10H	1036.32, 539.42	15	1	92	2	
AbD 90-535		Fragment of a discoid limestone grinder, surface shows signs of pol- ish.	l = 7.2 cm w = 4.0 cm th = 1.3 cm	8D	893.41, 996.63	20	56	0	2	
AbD 90-536 MS90-186		Agate bead, shaped in a truncated cone.	d = 0.7 cm h = 0.6 cm hd = 0.25 cm	10I	1025.53, 422.09	20	18	0	2	Fig. 70
AbD 90-540		Quartzite grinder with wear on both surfaces and ends.	l = 7 cm w = 7.4 cm th = 4.3 cm	7K	746.52, 246.26	11	44	0	2	Fig. 75
AbD 90-541		Sherd of a simple shallow bowl of pink quartzite.	rd = 24 cm h = 3.1 cm th = 1.6 cm	7D	732.87, 940.93	26	1	92	2	Fig. 67
AbD 90-542		Fragment of a green glass bracelet with external tan and yellow trails and an internal black trail, triangu- lar in section.	l = 4.1 cm d = 0.5 cm	7D	717.82, 917.60	25	20	80	3	
AbD 90-543		Fragment of a spiral dark blue glass bracelet, circular in cross section.	l = 4.5 cm d = 0.6 cm	8D	832.28, 905.08	25	20	81	3	
AbD 90-544		Limestone grinding stone or door socket, broken.	l = 22 cm w = 13.4 cm th = 5.8 cm	8J	817.28, 346.34	10	55	0	2	
AbD 90-545		Fragment of a green glass bracelet with tan and yellow trails on exte- rior and a thin black trail on inte- rior, triangular in cross section.	l = 3.4 cm w = 0.3 cm th = 0.6 cm	7D	748.38, 931.72	25	20	80	3	
AbD 90-546		Fragment of a fluted base in green glass.	l = 2.5 cm w = 4.6 cm th = 0.6 cm	11E	1117.76, 800.97	25	25	0	3	
AbD 90-547		Broken copper/bronze ring.	d = 1.7 cm th = 0.2 cm	7B	780.75, 1101, 06	3	19	0	2	
AbD 90-548		Rear portion of a model chariot base. Medium orange ware with chaff and black grit temper.	l = 3.8 cm w = 7.4 cm h = 3.1 cm hd = 0.9 cm	7C	788.71, 1092.37	1	9	0	2	
AbD 90-549		Copper/bronze disk, probably a coin but no impression preserved.	d = 0.9-1.1 cm th = 0.1 cm	7D	754.48, 902.74	3	53	0	3	
AbD 90-550		Copper/bronze fragment curved into an s-shape.	l = 2.2 cm d = 0.3-0.4 cm	8E	848.08, 816.64	3	40	0	2	
AbD 90-551		Copper/bronze wire; earring??	l = 1.4 cm w = 0.9 cm d = 0.2 cm	7C	733.22, 1047.01	3	95	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 90-552		Copper/bronze blade fragment, with one hafting hole preserved.	l = 2.3 cm w = 1.4 cm th = 0.3 cm hd = 0.5 cm	7D	743.91, 973.58	3	29	0	2	
AbD 90-553		Fragment of a translucent green glass bracelet with thin black trail on inside, broad turquoise trail on the outside, triangular section.	l = 2.1 cm w = 0.2 cm th = 0.2 cm	7D	738.16, 906.31	25	20	80	3	
AbD 90-554		Fragment of a spiral black glass bracelet with yellow trails, circular in cross section.	l = 5.2 cm d = 0.4 cm	7G	797.50, 669.09	25	20	81	3	
AbD 90-555		Fragment of a green glass bracelet with yellow and orange trails on exterior and thin black trail on interior. Oval cross section, tapers at one end.	l = 3.9 cm w = 0.3-0.6 cm th = 0.3-0.5 cm	7D	729.88, 903.37	25	20	80	3	
AbD 90-556		Half of a globular bead of black stone.	d = 1.2 cm h = 0.9 cm hd = 0.4 cm	7D	740.54, 904.64	20	18	0	2	
AbD 90-557 MS90-190	IM139717	Ceramic kiln spacer in the form of a tripod. Medium buff ware with grit temper.	l = 6.0 cm h = 4.5 cm th = 1.1 cm	7C	732.51, 1015.86	1	59	0	2	Fig. 62
AbD 90-558		Fragment of a spiral dark blue glass bracelet with light grey-blue trails, round in cross section.	l = 3.2 cm d = 0.65 cm	9E	955.94, 833.62	25	20	84	3	
AbD 90-559		One half of a completely eroded limestone cylinder seal.	d = 1.0 cm l = 2.3 cm hd = 0.2 cm	7J	794.92, 310.95	20	17	0	2	
AbD 90-560 MS90-191	IM139699	Cylinder seal in rock crystal show- ing presentation scene with a seated deity and some fill figures. Includes an inscription to Aya and Shamash.	d = 1.3 cm l = 2.4 cm hd = 0.3 cm	8D	845.18, 947.90	20	17	65	2	Fig. 69
AbD 90-562		Shaft fragment of a copper/bronze pin.	l = 5.7 cm d = 0.6 cm	8D	837.03, 919.48	3	34	0	2	
AbD 90-563 MS90-193	IM139713/2	Lentoid shaped hematite weight. Weight = 0.9 g.	l = 1.9 cm d = 0.4 cm	7D	739.07– 761.03, 901.13– 904.92	13	48	0	2	Fig. 71
AbD 90-564		Fragment of a translucent green glass bracelet with external yellow and orange trails and an internal black trail, triangular in cross sec- tion.	l = 4.5 cm w = 0.4 cm th = 0.4 cm	7D	715.63, 914.37	25	20	80	3	
AbD 90-565 MS90-194		Barrel shaped agate bead.	d = 0.5 cm l = 1.4 cm hd = 0.1 cm	10I	1021.14, 445.68	20	18	0	2	
AbD 90-567		Sherd of a vessel of translucent yel- low quartzite with orange mar- bling.	l = 4.9 cm w = 3.2 cm th = 0.8 cm	10G	1048.14, 604.68	27	1	0	2	
AbD 90-568		Model chariot base fragment, part of axle hole preserved. Medium buff ware with chaff temper.	l = 4.5 cm w = 3.6 cm h = 3.5 cm hd = .9-1.05 cm	91	944.84, 470.36	1	9	0	2	
AbD 90-569 MS90-195	IM139700	Limestone mortar found widely scatted in four pieces, worn though the base.	d = 17.7 cm h = 17.9 cm th = 3.2 cm	9E and 8F	926.31, 826.55 899.30, 785.87 923.12, 801.68 908.39, 831.62	10	42	0	2	Fig. 75

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	-
AbD 90-570 MS90-196	IM139701	Broken limestone cylinder seal showing presentation scene.	d = 1.1 cm l = 1.75 cm hd = 0.3 cm	81	853.60, 421.17	20	17	66	2	Fig. 69
AbD 90-571		Copper/bronze blade fragment.	l = 4.2 cm w = 3.8 cm th = 0.3 cm	9D	957.32, 947.67	3	33	0	2	
AbD 90-572		Two hubs of model wheels. Both of medium orange ware with chaff temper and buff slip.	d > 7, 6.4 cm th = 1.9, 1.7 cm hd = 1.1. 1.3 cm	7D	781.76, 912.19	1	10	14	2	
AbD 90-573 MS90-197	IM135761	Sherd of an Old Babylonian goblet with part of a cuneiform stamp. Sherd comes from near the base of the vessel, stamp is oriented verti- cally. Medium-fine buff ware with grit temper.	l = 5.2 cm w = 5.5 cm th = 1.3 cm	8E	855.96, 821.35	1	2	3	2	Fig. 107
AbD 90-574		Broken and eroded model chariot base. Coarse buff ware with grit temper.	l = 6.3 cm w = 5.3 cm h = 3.1 cm hd = 1.3, 1.4 cm	91	939.90, 449.51	1	9	0	2	
AbD 90-575		Model chariot base. Medium greenish buff ware with medium fine chaff temper.	l = 7.3 cm w = 6.3 cm h = 3.7 cm hd = 0.7, 0.8 cm	10H	1039.89, 557.02	1	9	0	2	
AbD 90-576		Retouched obsidian blade.	l = 3.1 cm w = 0.7 cm th = 0.3 cm	10I	1038.92, 448.07	17	29	0	2	Fig. 74
AbD 90-577		Eroded model wheel. Medium orange-buff ware with medium fine sand and chaff temper.	d > 6.6 cm th = 1.6 cm hd = 0.8 cm	91	912.69, 468.57	1	10	14	2	
AbD 90-578		Eroded model wheel. Medium buff ware with chaff temper.	d > 7 cm th = 1.7 cm hd = 0.7 cm	91	924.37, 494.50	1	10	14	2	
AbD 90-579 MS90-198	IM139702	Male figurine with head, arms and bottom of base broken off. Traces of some object held in front of chest. Fine grey-buff ware with grit temper.	h = 9.2 cm w = 5.0 cm th = 3.1 cm	8D	832.71, 959.24	1	15	32	2	Fig. 52
AbD 90-580 MS90-199	IM139703	Model chariot shield, top chipped and bottom broken off, design shows pair of lion sickles on both sides of a solar disk and a lunar sickle, with various other dots. Medium buff ware with sand tem- per and cream slip.	l = 10.8 cm w = 5.3 cm th = 2.6 cm hd = 0.3, 1.3 cm	9Н	989.24, 531.58	1	8	8	2	Fig. 55
AbD 90-581		Two fragments of translucent green glass bracelets with orange and yellow trails on exterior and thin black trail on interior, trian- gular in section.	l = 3.6, 2.7 cm w = 0.5, 0.3 cm th = 0.5, 0.3 cm	7D	733.13– 733.38, 905.25– 905.39	25	20	80	3	
AbD 90-582 MS90-200		Chip of a cylinder seal in black stone, part of an inscription and the legs of a male figure are pre- served.	l = 1.1 cm w = 1.3 cm th = 0.5 cm hd = 0.1 cm	10D	1012.73, 985.30	20	17	0	2	Fig. 108
AbD 90-583		Eroded model wheel. Medium buff ware with chaff temper.	d = 8.6 cm th = 3.2 cm hd = 1.0 cm	91	929.04, 488.90	1	10	14	2	
AbD 90-584 MS90-201	IM139718/2	Baked clay conical spindle whorl. Fine orange ware with grit temper.	d = 4.0 cm h = 1.2 cm hd = 0.6 cm	8B	886.33, 1118.12	1	50	0	2	Fig. 62

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
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AbD 90-585 MS90-202	IM139713/2	Lentoid shaped hematite balance weight. Weight = 1.9 gm	l = 2.3 cm d = 0.5 cm	8B	893.51, 1131.71	13	48	0	2	Fig. 71
AbD 90-586 MS90-203	IM139704	Copper/bronze ring.	d = 2.6 cm th = 0.4 cm	8C	881.31, 1087.89	3	19	0	2	
AbD 90-587		Fragment of a translucent green glass bracelet with thin black trail on inside and broad turquoise trail on outside, triangular in section.	l = 2.5 cm w = 0.3 cm th = 0.3 cm	7D	735.85, 907.36	25	20	80	3	
AbD 90-588		Shaft fragment of a copper/bronze pin.	l = 5.4 cm d = 0.5 cm	8D	847.31, 937.37	3	39	0	2	Fig. 65
AbD 90-589 MS90-204		Spiral copper/bronze ring.	d = 1.4 cm th = 0.2 cm	7C	777.84, 1007.69	3	19	0	2	Fig. 64
AbD 90-590		Base fragment of a deep vat of fine-grained buff stone mottled with brown and grey.	bd = ca 10 cm h = 7.4 cm th = 3.0 cm	8D	807.56, 969.69	20	1	94	2	
AbD 90-591		Eroded model wheel. Medium buff ware with chaff temper.	d = 8.4 cm th = 3.2 cm hd = 0.6 cm	8D	847.83, 901.20	1	10	14	2	
AbD 90-592		Base of a model chariot shield with a bit of the base attached. No design visible.	h = 5.3 cm w = 5.3 cm th = 1.8 cm hd = 0.8 cm	8E	856.01, 838.26	1	9	0	2	
AbD 90-593 MS90-205		Cylinder seal fragment of dark grey stone, only a lion-mace staff, a nude female, the back of a male figure and a human head are pre- served.	l = 2.35 cm d = 0.95 cm hd = 0.4 cm	7C	721.70, 1050.41	20	17	0	2	Fig. 69
AbD 90-594		Hub of a model wheel. Medium buff ware with chaff temper and traces of a cream slip.	l = 3.9 cm w = 3.1 cm th = 4.6 cm hd = 1.0 cm	7D	783.62, 904.31	1	10	14	2	
AbD 90-595		Hub of a model wheel. Medium- fine orange ware with grit temper.	d > 4.6 cm th = 3.9 cm hd = 0.8 cm	7D	799.64, 938.28	1	10	14	2	
AbD 90-596		Copper/bronze rivet.	l = 0.9 cm w = 0.8 cm th = 0.8 cm	10I	1069.56, 432.62	3	55	0	2	Fig. 65
AbD 90-597		One third of a model wheel. Medium greenish-buff ware with chaff temper.	d = 12–14 cm th = 7.8 cm hd = 2.1 cm	7K	789.49, 232.18	1	10	13	2	Fig. 56
AbD 90-599		Fragment of a copper/bronze blade with one hafting hole pre- served.	l = 2.5 cm w = 1.8 cm th = 0.2 cm	10I	1083.93, 444.31	3	29	0	2	
AbD 90-600		Eroded model wheel. Medium orange ware with grit temper and buff slip.	d = 10 cm th = 2.7 cm hd = 0.7 cm	7B	708.89, 1125.49	1	10	14	2	
AbD 90-601		Two-thirds of a model wheel. Medium buff ware with fine black grit and chaff temper.	d = 9 cm th = 1.9 cm hd = 2.0 cm	8J	859.56, 396.84	1	10	13	2	
AbD 90-602 MS90-207		Discoid bead of dark grey stone.	d = 0.5 cm h = 0.35 cm hd = 0.2 cm	8K	837.75, 270.70	20	18	0	2	
AbD 90-603		Decorative stem to a light green glass vessel.	l = 4.1 cm d = 2.1-2.4 cm	9E	1000.42, 815.95	25	25	0	3	
AbD 90-604		Obsidian blade with little or no retouch.	l = 2.1 cm w = 1.0 cm th = 0.2 cm	7B	746.65, 1102.83	17	29	0	2	
AbD 90-605		Most of a model wheel. Medium- coarse orange ware with chaff tem- per and buff slip.	d = 11 cm th = 3.4 cm hd = 0.9 cm	7B	734.57, 1181.38	1	10	14	2	

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AbD 90-606		Sherd of a vessel in alabaster.	l = 5.9 cm w = 5.4 cm th = 0.9 cm	8D	846.23, 984.64	15	1	0	2	
AbD 90-607		Animal figurine with broken head, legs and rear torso. Medium buff ware with chaff temper.	l = 7.4 cm h = 3.1 cm w = 2.8 cm	7B	734.95, 1181.94	1	15	31	2	
AbD 90-608 MS90-208		Bottom part of an eroded model chariot shield. Traces of the bot- tom of a pair of lion sickles with a sickle on a stand between them can be made out. Medium buff ware with grit temper.	h = 6.2 cm w = 4.1 cm th = 2.1 cm hd = 1.0 cm	7C	709.56, 1056.95	1	8	8	2	
AbD 90-609 MS90-209	IM139762	Five fragments of baked clay barrel cylinders, coarse chaff tempered orange ware with buff surface, grey core.	l = 5.8-1.8 cm w = 4.4 - 1.4 cm th = 1.3-0.4 cm	5K	ca. 552, 263	1	23	0	2	
AbD 90-610		Half of a spherical carnelian bead.	d = 0.5 cm h = 0.2 cm hd = 0.1 cm	5C	586.61, 1086.99	12	18	0	2	
AbD 90-611		Hub of a model wheel. Medium- fine grey-buff ware with chaff temper and greenish-buff slip.	l = 5.7 cm w = 5.1 cm th = 3.9 cm hd = 1.8 cm	9K	909.40, 263.13	1	10	14	2	
AbD 90-612		Fragment of a spiral black glass bracelet, round in cross section.	l = 4.6 cm d = 0.5 cm	5C	511.74, 1010.65	25	20	81	3	
AbD 90-613 MS90-210		Spherical bead of black stone.	d = 0.3 cm h = 0.4 cm hd = 0.1 cm	5D	536.93, 951.67	20	18	0	2	
AbD 90-614		Broken shell ring.	d = 3.0 cm th = 0.3 cm	6C	641.84, 1093.17	30	19	0	2	
AbD 90-615		Bent and twisted copper rod, bro- ken at both ends.	l = 2.1 cm d = 0.3–0.4 cm	6C	634.46, 1074.49	3	40	0	2	
AbD 90-616		Axle fragment of a model chariot base. Medium buff ware with light chaff temper.	l = 3.4 cm w = 3.75 cm h = 2.8 cm hd = 1.2 cm	7B	753.64, 1152.30	1	9	0	2	
AbD 90-617		Broken model chariot base. Medium buff ware with chaff tem- per.	l = 4.8 cm w = 6.6 cm h = 4.8 cm hd = 0.9, 1.2 cm	6C	645.36, 1000.94	1	9	0	2	
AbD 90-618 MS90-211	IM139706	Small, shallow dish, slightly irregu- lar rim, uneven string-cut base. Medium-fine orange-red ware with chaff temper.	rd = 8.8–8.9 cm bd = 4.4 cm h = 1.9–2.5 cm	4D	496.52, 913.81	1	1	0	2	
AbD 90-619		Rectangular piece of fossiliferous limestone with beveled edges, one end broken off.	l = 3.1 cm w = 2.8 cm th = 1.1 cm	7B	786.68, 1194.40	10	55	0	2	Fig. 77
AbD 90-620		Quartzite cuboid with traces of wear on several surfaces.	l = 4.2 cm w = 4.1 cm h = 4.1 cm	8C	803.97, 1041.00	20	41	0	2	
AbD 90-621		Badly eroded model wheel. Medium orange ware with chaff temper.	d = 9.2 cm th = 4.0 cm hd = 1.0 cm	5C	516.75, 999.77	1	10	14	2	
AbD 90-622		Baked clay lentoid spindle whorl, broken. Fine buff ware with fine grit temper.	l = 4.3 cm w = 2.5 cm h = 1.1 cm hd = 0.4 cm	4D	431.18, 907.26	1	50	0	2	
AbD 90-623		Copper/bronze disk, probably a coin but no impression preserved.	d = 0.8-1.0 cm th = 0.1 cm	4D	495.52, 929.34	3	53	0	3	

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AbD 90-624		Part of a model wheel. Medium buff ware with chaff temper.	d = 10-10.5 cm th = 2.9 cm hd = 1.3 cm	7B	783.47, 1153.05	1	10	14	2	
AbD 90-625		Fragment of a green glass bracelet with yellow and orange trails and red and blue/green splotches, tri- angular in section.	d = 8.5-9 cm w = 0.8 cm th = 0.5 cm	6D	641.09, 925.98	25	20	82	3	
AbD 90-626		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.2 cm th = 0.2 cm	4D	469.06, 927.53	3	53	0	3	
AbD 90-627		Lentoid marble spindle whorl, bro- ken.	l = 3.25 cm w = 2.2 cm h = 0.9 cm hd = 0.8 cm	6C	680.96, 1090.03	14	50	0	2	
AbD 90-628		Chipped model wheel. Medium buff ware with black grit and chaff temper.	d = 7.7 cm th = 4.2 cm hd = 1.0 cm	8C	828.48, 1040.32	1	10	14	2	
AbD 90-629		Slightly chipped model wheel. Medium buff ware with chaff tem- per.	d = 8.1 cm th = 2.7 cm hd = 0.9 cm	8C	829.01, 1017.10	1	10	14	2	
AbD 90-630		Copper/bronze disk, probably a coin but no impression preserved.	d = 0.6–0.8 cm th = 0.1 cm	4D	486.35, 925.88	3	53	0	3	
AbD 90-631		Retouched obsidian blade.	l = 2.1 cm w = 1.3 cm th = 0.3 cm	8C	835.32, 999.54	17	29	0	2	
AbD 90-632		One third of a model wheel. Medium buff ware with chaff tem- per. Two other model wheel frag- ments are included which are probably part of the same wheel but which do not join.	d = 9 cm th = 2.4 cm hd = 0.7 cm	5D	518.84, 954.34	1	10	14	2	
AbD 90-633 MS90-212	IM139707	U-shaped copper/bronze wire, wrapped with more wire on both ends, perhaps part of an earring or fibula.	l = 1.3 cm w = 1.1 cm d = 0.1 cm	6B	695.96, 1119.06	2	95	0	3	Fig. 64
AbD 90-634		Neck of a bottle of translucent col- orless glass.	d = 1.5 cm h = 4.5 cm th = 0.3 cm	6D	667.16, 902.35	25	25	0	3	
AbD 90-635		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.5–1.6 cm th = 0.1 cm	4D	496.09, 946.27	3	53	0	3	
AbD 90-636 MS90-213		Model wheel. Fine orange ware with chaff temper and buff slip.	d = 8.2 cm th = 2.4 cm hd = 0.7 cm	8C	828.67, 1049.07	1	10	14	2	Fig. 56
AbD 90-637		Base fragment of a deep limestone bowl.	bd = 7 cm h = 1.7 cm th = 0.4 cm	4D	475.75, 981.91	10	1	91	2	
AbD 90-638		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.2–1.5 cm th = 0.1 cm	4D	414.66, 952.58	3	53	0	3	
AbD 90-639		One quarter of a model wheel. Medium buff ware with chaff tem- per.	d = ca 24 cm th = 5.1 cm hd = 2.9 cm	8C	827.08, 1048.30	1	10	13	2	Fig. 56
AbD 90-640 MS90-214	IM139708	Copper/bronze cotter pin.	l = 2.1 cm w = 0.6 cm th = 0.2 cm hd = 0.1 cm	6C	627.96, 1080.78	3	55	0	2	Fig. 65
AbD 90-641		Ceramic bottle stop. Medium-fine orange ware with grit temper.	l = 5.8 cm w = 6.4 cm	5C	599.28, 1061.82	1	62	0	2	
AbD 90-642		Eroded model wheel. Medium pinkish-buff ware with chaff tem- per.	d = 6.1 cm th = 2.1 cm hd = 0.7 cm	7C	758.21, 1042.82	1	10	14	2	

Object # IM #	Description Size Square Findspot Coding						Ref			
						Mat	Obj	Dec	Date	•
AbD 90-643		Base of a stemmed green transpar- ent glass.	d = 3.8 cm h = 1.5 cm th = 1.1 cm	3E	332.19, 817.73	25	25	0	3	
AbD 90-644		Most of a model wheel. Medium buff ware with chaff temper.	d = 10.6 cm th = 2.7 cm hd = 1.1 cm	6B	675.76, 1173.07	1	10	14	2	
AbD 90-645		Ovoid piece of limestone with depressions on both sides.	l = 16.2 cm w = 11.7 cm th = 7.3 cm	9K	962.68, 233.91	10	55	0	2	Fig. 77
AbD 90-646		Shaft fragment of a copper/bronze pin.	l = 4.0 cm w = 0.55 cm th = 0.35 cm	7C	755.11, 1000.95	3	34	0	2	
AbD 90-647 MS90-215	IM139709	Horse and rider figurine with head, legs and rider broken off. Medium green-brown ware with chaff temper.	l = 7.8 cm h = 5.9 cm th = 3.5 cm	10G	1003.69, 661.39	1	15	30	2	
AbD 90-648		Rim fragment of a deep bowl with out-turned rim, of greenish-grey, bubbly stone.	d = 16 cm h = 4.5 cm th = 1.4 cm	4D	489.48, 895.71	20	1	0	2	Fig. 68
AbD 90-649		Model wheel fragment, buff ware with medium grit temper.	d > 8 cm th = 3.1 cm hd = 2.5 cm	3E	313.24, 833.54	1	10	13	2	
AbD 90-650		Model wheel. Medium buff ware with chaff temper.	d = 10.1 cm th = 2.9 cm hd = 1.4 cm	10G	1030.65, 620.38	1	10	14	2	
AbD 90-651		Copper/bronze wire; earring??	l = 1.8 cm w = 1.4 cm d = 0.2 cm	7B	730.04, 1164.38	3	95	0	2	
AbD 90-652		Copper/bronze coin with traces of an impression on one face.	d = 1.2 cm th = 0.5 cm	10E	1001.23, 823.34	3	53	0	3	
AbD 90-653		Round limestone bead, flattened, broken.	d = 0.9 cm h = 0.4 cm hd = 0.2 cm	6D	687.59, 987.42	10	18	0	2	
AbD 90-654		One third of a model wheel. Medium orange ware with chaff temper.	d = 11–12 cm th = 2.8 cm hd = 1.6 cm	7B	780.45, 1154.56	1	10	14	2	
AbD 90-655 MS90-218		Bow-shaped rod with chisel tip, broken at other end, of copper/ bronze or perhaps brass. In very good condition.	l = 5.4 cm w = 0.6 cm d = 0.4 cm	6D	688.32, 901.55	3	35	0	2	Fig. 65
AbD 90-656		Decorative stem to a grey translu- cent glass vessel.	d = 2.4 cm l = 5.4 cm	3E	386.29, 894.26	25	25	0	3	
AbD 90-657		Badly eroded model chariot shield, one side and base broken off. Medium orange ware with chaff and grit temper.	h = 8.8 cm w = 4.4 cm th = 1.8 cm	6D	696.47, 900.28	1	8	0	2	
AbD 90-658		Decorative copper/bronze frag- ment, a crescent or ring attached to a larger object.	l = 1.0 cm w = 1.2 cm th = 0.5 cm	6D	659.41, 980.49	3	55	0	2	Fig. 64
AbD 90-659		Shaft fragment of a copper/bronze pin.	l = 7.1 cm d = 0.55–0.6 cm	7B	788.19, 1182.70	3	34	0	2	
AbD 90-660		Hub of a model wheel. Medium orange ware with grit temper.	d > 7.4 cm th = 3.0 cm hd = 0.9 cm	8C	804.16, 1042.79	1	10	14	2	
AbD 90-661		Broken model wheel. Medium buff ware with chaff temper.	d > 7.5 cm th = 2.6 cm hd = 0.5 cm	6C	689.62, 1011.15	1	10	14	2	
AbD 90-662		Solid fragment of olive-yellow glass, perhaps part of a weight or ingot.	l = 5.8 cm w = 4.7 cm th = 4.4 cm	6B	661.22, 1140.21	25	55	0	3	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 90-663		Model wheel fragment. Medium orange ware with grit temper.	d > 11 cm th = 2.9 cm hd = 4 cm	6B	617.03, 1112.46	1	10	13	2	
AbD 90-664		Shaft fragment of a copper/bronze pin, slightly curved, tapering to one end, square in cross-section.	l = 3.2 cm w = 0.5 cm th = 0.5 cm	6C	623.62, 1064.97	3	39	0	2	
AbD 90-665		Somewhat eroded model wheel. Fine orange-buff ware with grit and sparse chaff temper.	d = 6.6 cm th = 1.7 cm hd = 0.5 cm	6B	634.59, 1133.60	1	10	14	2	
AbD 90-666		Broken model wheel. Medium buff ware with chaff temper.	d > 7 cm th = 2.3 cm hd = 1.0 cm	4D	477.33, 906.32	1	10	14	2	
AbD 90-667		Quartzite cuboid with traces of wear on one face.	l = 3.5 cm w = 3.4 cm h = 3.7 cm	6C	655.75, 1002.25	11	41	0	2	
AbD 90-668		Flint blade with little or no retouch.	l = 3.0 cm w = 1.3 cm th = 0.2 cm	9C	944.97, 1007.10	18	29	0	2	Fig. 74
AbD 90-690		Eroded model wheel. Medium orange ware with grit temper.	d = 6.0 cm th = 1.9 cm hd = 0.9 cm	6B	677.45, 1109.43	1	10	14	2	
AbD 90-691		One third of a model wheel. Medium-fine greenish buff ware with grit and chaff temper.	d = 9.6 cm th = 2.8 cm hd = 1.1 cm	6D	638.02, 975.45	1	10	14	2	
AbD 90-692		Model chariot base with bottom broken off. Medium buff ware with grit temper.	l = 5.9 cm w = 4.7 cm h = 2.5 cm hd = 1.1, 1.2 cm	5D	598.29, 997.74	1	9	0	2	
AbD 90-693		Half of a model wheel. Medium greenish-buff ware with chaff temper.	d = 9.5 cm th = 2.3 cm hd = 1.05 cm	8C	815.18, 1043.56	1	10	14	2	
AbD 90-694		Broken biconical dark blue glass bead.	l = 0.8 cm w = 0.5 cm th = 0.4 cm hd = 0.1 cm	6B	668.74, 1152.92	25	18	0	3	
AbD 90-695		Sherd of a vessel in mottled and layered stone of black, white and grey.	l = 7.4 cm w = 4.2 cm th = 1.1 cm	7B	750.43, 1108.30	20	1	0	2	
AbD 90-696		Copper/bronze disk, probably a coin but no impression preserved.	d = 1.3 cm th = 0.15 cm	5D	506.28, 915.48	3	53	0	3	
AbD 90-697		Broken model wheel. Medium orange ware with grit and chaff temper, grey core.	d = 9.6 cm th = 2.4 cm hd = 0.9 cm	7B	733.81, 1180.62	1	10	14	2	
AbD 90-698		Quartzite cuboid with signs of wear on two sides.	l = 7.3 cm w = 5.9 cm h = 5.9 cm	6B	660.84, 1176.47	11	41	0	2	
AbD 90-699		Flat piece of copper/bronze, slightly thicker in the center. Per- haps part of a blade or a spearpoint.	l = 4.9 cm w = 3.4 cm th = 0.7 cm	8C	849.70, 1084.04	3	60	0	2	
AbD 90-700 MS90-216	IM139710	Copper/bronze bracelet with wire entwined around a central bar in a herringbone pattern. Very well preserved.	l = 3.9 cm w = 0.2 cm th = 0.2 cm	5D	581.69, 965.19	3	20	0	2	Fig. 64
AbD 90-701		Eroded model wheel. Medium orange ware with grit temper.	d = 4.3 cm th = 0.9 cm hd = 0.5 cm	8D	844.17, 916.76	1	10	14	2	
AbD 90-702		Sherd of a vessel in alabaster.	l = 7.6 cm w = 6.3 cm th = 1.2 cm	6D	643.82, 993.56	15	1	0	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 90-703		Eroded and broken model wheel. Medium orange ware with grit temper.	d > 7 cm th = 3.0 cm hd = 1.2 cm	11E	1145.72, 800.85	1	10	14	2	
AbD 90-704		Fragment of a green glass bracelet with a yellow trail on the outside and a thin black trail on the inside, triangular in cross section.	l = 4.9 cm w = 0.6 cm th = 0.6 cm	7D	768.75, 927.97	25	20	80	3	
AbD 90-705		Ovoid basalt donut-shaped stone, irregularly shaped.	l = 9.4 cm w = 8.2 cm h = 2.5-5.1 cm hd = 2.0 cm	9H	962.82, 531.11	20	47	0	2	
AbD 90-707		Hub of a model chariot. Medium orange-buff ware with grit temper and buff slip.	l = 3.6 cm w = 3.0 cm th = 1.7 cm hd = 0.6 cm	7D	760.46, 917.69	1	10	14	2	
AbD 90-708		Broken and eroded model wheel. Medium buff ware with fine grit and chaff temper.	d = 8.4 cm th = 2.5 cm hd = 0.9 cm	7B	783.85, 1102.26	1	10	14	2	
AbD 90-709		Head end of a copper/bronze pin. Both head and shaft are somewhat rounded in cross-section, end bro- ken off.	l = 2.8 cm w = 0.8 cm th = 0.7 cm	10E	1077.32, 811.24	3	34	0	2	
AbD 90-710		Fragment of a green glass bracelet with tan and yellow trails on exte- rior and black trail on interior, tri- angular cross-section.	l = 5.1 cm d = 0.5 cm	7D	738.40, 917.06	25	20	80	3	
AbD 90-711		Two fragments of green glass bracelets with orange and yellow trails on exterior and a thin black trail on interior, triangular in cross section.	l = 3.8, 3.6 cm d = 0.4 cm	8E	885.35– 885.75, 868.92– 869.80	25	20	80	3	
AbD 90-712		Broken model wheel. Medium orange war with chaff temper and buff slip.	d = 10.8 cm th = 2.8 cm hd = 1.1 cm	101	1036.98, 440.72	1	10	14	2	
AbD 90-713		Most of a model wheel. Medium- fine orange ware with grit temper.	d = 6.9 cm th = 2.1 hd = 0.8 cm	7D	794.42, 924.11	1	10	14	2	
AbD 90-714		Shaft fragment of a copper/bronze pin.	l = 7.1 cm d = 0.5 - 0.6 cm	6C	645.03, 1057.94	3	34	0	2	
AbD 90-715		Shaft fragment of a copper/bronze pin.	l = 4.4 cm d = 0.2 cm	7B	797.26, 1156.45	3	34	0	2	
AbD 90-716 MS90-217		Fragment of a very worn cylinder seal in greenish-grey stone. Possi- ble traces of one figure.	l = 1.9 cm w = 0.8 cm th = 0.4 cm	101	1059.12, 427.46	20	17	0	2	
AbD 90-717		Very eroded model wheel. Medium buff ware with grit tem- per.	d > 5.8 cm th = 2.9 cm hd = 1.0 cm	8J	885.52, 381.83	1	10	14	2	
AbD 90-718		Hub of a model wheel. Medium- fine greenish buff ware with chaff temper.	l = 7.9 cm w = 6.9 cm th = 3.6 cm hd = 0.8 cm	5D	577.25, 978.29	1	10	14	2	
AbD 90-719		Fragment of a spiral dark blue glass bracelet with blue-green trails, cir- cular in cross section, one end square.	l = 3.7 cm d = 0.65 cm	11H	1178.20, 518.59	25	20	84	3	
AbD 90-720		One third of a model wheel. Medium orange ware with chaff and grit temper.	d = 8.0 cm th = 3.0 cm hd = 0.7 cm	81	907.25, 484.61	1	10	14	2	
AbD 90-721		Base of a male figurine with slightly hollow base. Medium buff fabric with grit temper.	h = 7.0 cm w = 3.4 cm th = 3.4 cm	9E	917.51, 803.31	1	15	32	2	

Object #	IM #	Description	Size	Square	Findspot		Со	ding		Ref
						Mat	Obj	Dec	Date	
AbD 90-722		Model wheel, slightly broken. Medium orange-buff ware with grit and chaff temper.	d = 10.4 cm th = 3.2 cm hd = 1.1 cm	10G	1039.71, 671.51	1	10	14	2	
AbD 90-723		Sherd with early Islamic stamp on it. Hard fired medium ware with grit temper.	l = 4.2 cm w = 3.9 cm th = 0.8-1.0 cm	10H	1016.10, 553.30	1	3	4	3	Fig. 51
AbD 90-724		Broken cuboid stone with traces of wear on several sides.	l = 4.3 cm w = 4.1 cm h = 2.4 cm	7C	780.58, 1027.10	11	41	0	2	
AbD 90-725		Hub of a model wheel. Medium orange buff ware with grit and chaff temper and buff slip.	l = 5.0 cm w = 3.5 cm th = 1.9 cm hd = 1.1 cm	11G	1123.57, 605.12	1	10	14	2	
AbD 90-726		Model chariot base fragment, only the seat preserved. Medium fine buff ware with medium-fine grit temper.	h = 4.6 cm w = 4.3 cm th = 2.0 cm hd = 1.2 cm	9D	953.73, 905.36	1	9	0	2	
AbD 90-727		Fragment of an ovoid hematite weight.	l = 1.3 cm w = 0.9 cm	7D	714.79, 918.69	13	48	0	2	
AbD 90-742		Most of a model wheel. Fine buff ware with grit and chaff temper.	d = 8.2 cm th = 3.2 cm hd = 1.2 cm	7D	726.78, 997.20	1	10	14	2	
AbD 90-743		Model wheel fragment. Coarse buff ware with chaff temper.	d > 11.8 cm th = 3.5 cm hd = 1.5 cm	7D	759.99, 943.94	1	10	14	2	
AbD 90-744 MS90-240	IM139711	Flattened sub-triangular bead of pink limestone with hole pierced longitudinally.	l = 2.0 cm w = 1.2 cm th = 0.3 cm hd = 0.2 cm	6C	621.62, 1051.18	20	18	0	2	
AbD 90-745		Limestone cuboid, chipped, with traces of wear on several sides.	l = 5.5 cm w = 5.4 cm h = 4.0 cm	7D	732.71, 922.28	20	11	0	2	
AbD 90-746 MS90-241	IM139604	Round copper/bronze bead.	d = 0.5 cm h = 0.2 cm hd = 0.1 cm	6B	672.55, 1108.49	3	18	0	2	
AbD 90-747		Half of a model wheel. Fine buff ware with fine black grit temper.	d = 6.9 cm th = 2.95 cm hd = 0.75 cm	7D	773.05, 899.57	1	10	14	2	
AbD 90-748		Fragment of a translucent green glass handle, or possibly a bracelet, twisted.	l = 2.4 cm d = 0.2 cm	3E	387.52, 898.46	25	20	84	3	
AbD 90-749		Fragment of a translucent green glass handle, or possibly a bracelet.	l = 3.8 cm w = 0.8 cm th = 0.6 cm	6D	695.88, 936.18	25	20	80	3	
AbD 90-750		Green glass bracelet fragment with internal black trail, and external orange-yellow trail with an undu- lating red line, triangular in cross section.	l = 4.0 cm w = 0.75 cm th = 0.6 cm	7D	767.95, 910.56	25	20	82	3	
AbD 90-752 MS90-256		Deep jar with ring base. Medium buff ware with grit temper.	rd = 21.2 cm bd = 12 cm h = 23.4 cm	8C	820.53, 1017.57	1	3	0	2	
AbD 90-753		Part of a large basalt bowl with tri- pod legs, one leg preserved.	d = 32 cm h = 4.2 cm th = 2.2 cm	7C	743.47, 1057.18	23	1	0	2	Fig. 75
AbD 90-754		Sherd of a platter in medium grain brown stone with black streaks.	rd = unknown l = 14.6 cm w = 11.7 cm th = 5.2 cm	7B	715.31, 1181.00	20	1	95	2	

Object #	IM #	Description	Size	Sauana	Eindenat		C	dina		Def
<i>Objeti</i> #	11/1 #	Description	5120	Square	Tinuspoi		Co	uing		. Кеј
						Mat	Obj	Dec	Date	
AbD 90-755		One third of a limestone donut- shaped stone.	l = 10.3 cm w = 4.2 cm h = 4.0 cm	5C	517.55, 1057.85	10	47	0	2	
AbD 90-756 MS 90-258	IM139716/5	Old Babylonian goblet. Medium- fine buff ware with grit temper	rd = 11 bd = 6.2 h = 23.2 cm	8C	821.37, 1016.99	1	2	0	2	Fig. 50
AbD 90-758		Discoid bead of black stone.	d = 0.7 cm h = 0.3 cm hd = 0.3 cm	6C	638.94, 1091.25	20	18	0	2	

Appendix IV Key for Object Coding

Material

- 1 Ceramic 2 unbaked clay 3 copper\bronze 4 lead 5 iron 8 brass 9 other metal 10 limestone 11 sandstone
- 12 carnelion 13 hematite 14 marble 15 alabaster 16 b/w granite 17 obsidian 18 chert/flint 19 quartz 20 other stone
- 21 lapis
 22 steatite
 23 basalt
 24 frit/faiance
 25 glass
 26 pink alabaster
 27 orange streaked quarzite
 30 shell
- 31 bone 35 bitumen 36 slag 37 cement 40 gold 41 silver

Objects

1 bowl	25 bottle or glass	49 duckweight	73 bathtub burial
2 goblet	26 tablet	50 whorl	74 misc. burial
3 jar	27 sealing	51 palette	75 door socket
4 lid	28 brick	52 macehead	76 slingstone
5 offering table	29 blade	53 coin	78 pot burial
6 potstand	30 point	54 misc. grinder	80 hammer stone
7 complete chariot	31 core	55 misc.	81 cone\conical object
8 chariot shield	32 ax/adze	56 flattened grinder	82 tool—misc
9 chariot base	33 sickle	57 disc	84 nodule
10 chariot wheel	34 needle/pin	58 rattle	85 cobble
11 chair	35 chisel	59 tripod	87 ground stone
12 boat	36 fish hook	60 flat misc	89 stele, relief
13 bed	37 fish spear	61 incense burner	90 hinge
14 plaque	38 spear/arrowhead	62 bottle stop	91 space
15 figurine	39 nail—misc.	63 loom weight	92 ingot
16 statuary	40 curved misc.	64 anchor	93 mask
17 cylinder seal	41 cuboid	65 mold	94 mirror
18 bead	42 mortar	66 inlay	95 earring
19 ring	43 pestle	67 tweezers	96 scale pans
20 bracelet	44 hexagonal grinder	68 pierced weight	97 miniature tools
21 amulet	45 D-shaped grinder	69 pipestem—late	98 stamp seal
22 pierced piece	46 whetstone	70 modern grave	99 lamp
23 barrel cylinder	47 donut	71 slipper coffin	
24 misc. jewelry	48 weight	72 pithos	

Decoration

Pots	Plaques	Chairs	Seals
1 paint	16 nude female	40 Nergal	65 presentation-seated
2 incision	17 clothed female	41 architectural	66 presentation-standing
3 inscribed	18 nude male	42 female	67 figures
4 stamped	19 clothed male	43 couple	68 heraldic
5 glazed	20 presentation		69 geometric
78 applique	21 lion—animal	Beds	C C
	22 deity		Rattle
Chariots	23 couple	45 springs	
	1	46 female	70 animal
6 Shamash	Figurines		71 geometric
7 Nergal	8	Statuary	C
8 lion sickles	30 horse and rider	1	Amulet
9 lion mace	31 animal	50 human foot	
10 other	32 charioteer	51 human head—whole	74 animal
	33 female	52 human hand	
Wheels	34 male	53 lion paw	Stone Bowls
	35 with scales	54 lion head—animal	
13 large > 1.2 cm.	36 in pain	55 horse hoof	90 shallow bowl w/ rim
14 small < 1.2 cm.	1	56 limb	91 deep bowl w/out rim
		57 body	92 plain shallow bowl
		58 misc.	93 deep bowl w/ rim
			94 deep vat w/ rim
			95 closed vessel
			<i>y</i> e 1000 e a <i>i</i> 600 e 1

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Appendix V Objects by Findspot

Square	Object #						
6B	AbD 88-89		AbD 90-661		AbD 90-520		AbD 90-749
	AbD 88-133		AbD 90-664		AbD 90-523	7D	AbD 88-222
	AbD 90-633		AbD 90-667		AbD 90-529		AbD 90-541
	AbD 90-644		AbD 90-714		AbD 90-668		AbD 90-542
	AbD 90-662		AbD 90-744	3D	AbD 90-4		AbD 90-545
	AbD 90-663		AbD 90-758		AbD 90- 47		AbD 90-549
	AbD 90-665	7C	AbD 88-6	4D	AbD 87-294		AbD 90-552
	AbD 90-690		AbD 90-459		AbD 88-148		AbD 90-553
	AbD 90-694		AbD 90-460		AbD 90-19		AbD 90-555
	AbD 90-698		AbD 90-474		AbD 90-30		AbD 90-556
	AbD 90-746		AbD 90-548		AbD 90-91		AbD 90-563
7B	AbD 90-547		AbD 90-551		AbD 90-618		AbD 90-563
	AbD 90-600		AbD 90-557		AbD 90-622		AbD 90-564
	AbD 90-604		AbD 90-589		AbD 90-623		AbD 90-572
	AbD 90-605		AbD 90-593		AbD 90-626		AbD 90-572
	AbD 90-607		AbD 90-608		AbD 90-630		AbD 90-581
	AbD 90-616		AbD 90-642		AbD 90-635		AbD 90-581
	AbD 90-619		AbD 90-646		AbD 90-637		AbD 90-587
	AbD 90-624		AbD 90-724		AbD 90-638		AbD 90-594
	AbD 90-651		AbD 90-753		AbD 90-648		AbD 90-595
	AbD 90-654	8C	AbD 88-178		AbD 90-666		AbD 90-704
	AbD 90-659		AbD 90-28	5D	AbD 88-195		AbD 90-707
	AbD 90-695		AbD 90-586		AbD 90-36		AbD 90-710
	AbD 90-697		AbD 90-620		AbD 90-613		AbD 90-713
	AbD 90-708		AbD 90-628		AbD 90-621		AbD 90-727
	AbD 90-715		AbD 90-629		AbD 90-632		AbD 90-742
	AbD 90-754		AbD 90-636		AbD 90-692		AbD 90-743
8B	AbD 90-584		AbD 90-639		AbD 90-696		AbD 90-745
	AbD 90-585		AbD 90-660		AbD 90-700		AbD 90-750
5C	AbD 90-610		AbD 90-693		AbD 90-718	8D	AbD 88-177
	AbD 90-612		AbD 90-699	6D	AbD 88-167		AbD 90-433
	AbD 90-641		AbD 90-752		AbD 90-54		AbD 90-441
	AbD 90-755		AbD 90-756		AbD 90-625		AbD 90-443
6C	AbD 90-69	9C	AbD 90-51		AbD 90-634		AbD 90-458
	AbD 90-295		AbD 90-101		AbD 90-653		AbD 90-459
	AbD 90-614		AbD 90-442		AbD 90-655		AbD 90-503
	AbD 90-615		AbD 90-447		AbD 90-657		AbD 90-535
	AbD 90-617		AbD 90-499		AbD 90-658		AbD 90-543
	AbD 90-627		AbD 90-500		AbD 90-691		AbD 90-560
	AbD 90-640		AbD 90-507		AbD 90-702		AbD 90-562

Square	Object #						
	AbD 90-579		AbD 88-214		AbD 90-603	5F	AbD 87-2
	AbD 90-588		AbD 88-240		AbD 90-652		AbD 87-4
	AbD 90-590		AbD 88-242		AbD 90-709		AbD 87-7
	AbD 90-591		AbD 88-281	11E	AbD 88- 57		AbD 87-14
	AbD 90-606		AbD 88-282		AbD 88-202		AbD 87-22
	AbD 90-631		AbD 90-111		AbD 90-508		AbD 87-24
	AbD 90-701	5E	AbD 88-135		AbD 90-514		AbD 87-20
9D	AbD 88-54		AbD 88-252		AbD 90-546		AbD 87-23
	AbD 90-436		AbD 88-278		AbD 90-703		AbD 87-28
	AbD 90-453	6E	AbD 87-12	2F	AbD 90-42		AbD 87-29
	AbD 90-491		AbD 87-16	3F	AbD 87-15		AbD 87-30
	AbD 90-509		AbD 87-18		AbD 88-22		AbD 87-37
	AbD 90-521		AbD 87-45		AbD 88-56		AbD 87-40
	AbD 90-546	7E	AbD 87-3		AbD 88-56		AbD 87-42
	AbD 90-571		AbD 87-17		AbD 88-66		AbD 87-43
	AbD 90-726		AbD 87-36		AbD 88-74		AbD 87-58
10D	AbD 90-527		AbD 87-89		AbD 88-79		AbD 87-70
	AbD 90-582		AbD 87-216		AbD 88-83		AbD 87-76
3E	AbD 88-119		AbD 90-747		AbD 88-87		AbD 87-139
	AbD 88-120	8E	AbD 90-420		AbD 88-95		AbD 87-140
	AbD 88-123		AbD 90-432		AbD 88-96		AbD 88-24
	AbD 88-126		AbD 90-440		AbD 88-99		AbD 88-129
	AbD 88-127		AbD 90-445		AbD 88-103		AbD 88-131
	AbD 88–138		AbD 90-472		AbD 88-107		AbD 88-168
	AbD 88-179		AbD 90-473		AbD 88-108		AbD 88-253
	AbD 90-643		AbD 90-475		AbD 88-113	6F	AbD 87-8
	AbD 90-649		AbD 90-480		AbD 88-121	75	AbD 87-5
	AbD 90-656		AbD 90-494		AbD 88-125	, -	AbD 87-41
	AbD 90-748		AbD 90-501		AbD 88-139		AbD 88-12
4E	AbD 88-67		AbD 90-506		AbD 88-152		AbD 88-16
112	AbD 88-117		AbD 90-513		AbD 88-155		AbD 88-81
	AbD 88-118		AbD 90-524		AbD 88-157		AbD 88-255
	AbD 88-122		AbD 90-550		AbD 88-175	8F	AbD 87-203
	AbD 88-124		AbD 90-573		AbD 88-188	01	AbD 88-1
	AbD 88-128		AbD 90-592		AbD 88-230		AbD 88-3
	AbD 88-130		AbD 90-711		AbD 88-277		AbD 90-438
	AbD 88-132	9F	AbD 88–92	4F	AbD 87–19		AbD 90-478
	AbD 88-134		AbD 90-466	-11	AbD 87-213		AbD 90-528
	AbD 88-136		AbD 90-467		AbD 87-227		AbD 90-569
	AbD 88-137		AbD 90-468		AbD 87-235	9F	AbD 88-25
	AbD 88-140		AbD 90-477		AbD 87-236	71	AbD 90-462
	AbD 88-141		AbD 90-479		AbD 87-238		AbD 90-465
	AbD 88-143		AbD 90-558		AbD 87-240		AbD 90-469
	AbD 88-145		AbD 90-569		AbD 87-249	10E	AbD 90-421
	AbD 88-146		AbD 90-721		AbD 87-250	101	AbD 90-426
	AbD 88-140	10E	AbD 90-427		AbD 87-250		AbD 90-457
	AbD 88-150	IUE	AbD 90-451		AbD 87-205		AbD 90-476
	AbD 88-162		AbD 90-451		AbD 87-202		AbD 90-470
	AbD 88 142		AbD 00 474		AbD 87 205		ADD 90-48/
	ADD 00-102		ADD 90-4/4		ALD 88 109		AbD 00 510
	ADD 88-1//		ADD 90-482		ADD 88-198	145	ADD 90-519
	ADD 88-180		ADD 90-485		ADD 88-221	11F	ADD 88-45
	AbD 88-209		ADD 90-511		ADD 88-249		AbD 90-525

Appendix V

Square	Object #						
2G	AbD 90-9		AbD 88-245		AbD 87-208		AbD 90-647
3G	AbD 87-49		AbD 90-57		AbD 87-220		AbD 90-650
	AbD 88-17		AbD 90-300		AbD 87-254		AbD 90-722
	AbD 88-19	5G	AbD 87-75		AbD 87-265	11G	AbD 90-595
	AbD 88-31		AbD 87-78		AbD 88-8		AbD 90-725
	AbD 88-34		AbD 87-99		AbD 90-7	2H	AbD 88-165
	AbD 88-36		AbD 87-126	7G	AbD 88-26		AbD 88-174
	AbD 88-39		AbD 87-134		AbD 88-98		AbD 88-197
	AbD 88-50		AbD 87-137		AbD 90-231		AbD 88-204
	AbD 88-51		AbD 87-141		AbD 90-234		AbD 88-207
	AbD 88-59		AbD 87-152		AbD 90-235		AbD 88-219
	AbD 88-69		AbD 87-163		AbD 90-237		AbD 88-239
	AbD 88-73		AbD 87-164		AbD 90-248		AbD 88-248
	AbD 88-75		AbD 87-181		AbD 90-250		AbD 88-248
	AbD 88-86		AbD 87-191		AbD 90-255		AbD 88-248
	AbD 88-100		AbD 87-195		AbD 90-261		AbD 88-260
	AbD 88-101		AbD 87-196		AbD 90-291		AbD 88-269
	AbD 88-104		AbD 87-200		AbD 90-308		AbD 88-270
	AbD 88-111		AbD 87-201		AbD 90-505		AbD 90-8
	AbD 88-112		AbD 87-222		AbD 90-532		AbD 90-24
	AbD 88-114		AbD 87-231		AbD 90-554	3Н	AbD 87-96
	AbD 88-115		AbD 88-13	8G	AbD 87-108		AbD 87-107
	AbD 88-116		AbD 88-61		AbD 87-145		AbD 87-184
	AbD 88-147		AbD 88-173		AbD 88-2		AbD 88-14
	AbD 88-161	6G	AbD 87-32		AbD 90-252		AbD 88-18
	AbD 88-171		AbD 87-33		AbD 90-256		AbD 88-20
	AbD 88-189		AbD 87-38		AbD 90-290		AbD 88-21
	AbD 88-199		AbD 87-39		AbD 90-293		AbD 88-27
	AbD 88-212		AbD 87-46		AbD 90-297		AbD 88-35
	AbD 88-296		AbD 87-50		AbD 90-334		AbD 88-38
	AbD 90-10		AbD 87-51		AbD 90-430		AbD 88-41
4G	AbD 87-25		AbD 87-52		AbD 90-648		AbD 88-42
	AbD 87-26		AbD 87-53	9G	AbD 88-105		AbD 88-43
	AbD 87-27		AbD 87-55		AbD 90-450		AbD 88-49
	AbD 87-31		AbD 87-60		AbD 90-461		AbD 88-52
	AbD 87-34		AbD 87-62		AbD 90-484		AbD 88-58
	AbD 87-35		AbD 87-63		AbD 90-488		AbD 88-62
	AbD 87-44		AbD 87-65		AbD 90-502		AbD 88-64
	AbD 87-47		AbD 87-66		AbD 90-531		AbD 88-65
	AbD 87-48		AbD 87-67		AbD 90-547		AbD 88-72
	AbD 87-54		AbD 87-68	10G	AbD 90-423		AbD 88-76
	AbD 87-59		AbD 87-71		AbD 90-425		AbD 88-77
	AbD 87-61		AbD 87-72		AbD 90-431		AbD 88-78
	AbD 87-83		AbD 87-77		AbD 90-435		AbD 88-84
	AbD 87-170		AbD 87-85		AbD 90-439		AbD 88-85
	AbD 87-189		AbD 87-131		AbD 90-446		AbD 88-88
	AbD 87-243		AbD 87-132		AbD 90-448		AbD 88-90
	AbD 87-264		AbD 87-148		AbD 90-454		AbD 88-91
	AbD 88-7		AbD 87-151		AbD 90-463		AbD 88-94
	AbD 88-46		AbD 87-190		AbD 90-471		AbD 88-258
	AbD 88-60		AbD 87-199		AbD 90-510		AbD 88-259
	AbD 88-151		AbD 87-207		AbD 90-567		AbD 88-293

Objects by Findspot

Square	Object #						
	AbD 90-6		AbD 88-80		AbD 88-110		AbD 88-285
	AbD 90-39		AbD 88-93		AbD 90-2		AbD 88-308
	AbD 90-96		AbD 88-109		AbD 90-14		AbD 88-319
	AbD 90-130		AbD 90-12		AbD 90-32		AbD 88-321
4H	AbD 87-21		AbD 90-16		AbD 90-230		AbD 90-703
	AbD 87-81		AbD 90-52		AbD 90-232	4I	AbD 87-91
	AbD 87-87		AbD 90-55		AbD 90-299		AbD 87-94
	AbD 87-95		AbD 90-75		AbD 90-319		AbD 87-103
	AbD 87-100		AbD 90-102		AbD 90-343		AbD 87-106
	AbD 87-101		AbD 90-121		AbD 90-393		AbD 87-109
	AbD 87-102		AbD 90-157	9H	AbD 90-49		AbD 87-111
	AbD 87-104	5H	AbD 87-56		AbD 90-174		AbD 87-117
	AbD 87-105		AbD 87-64		AbD 90-367		AbD 87-119
	AbD 87-112		AbD 87-69		AbD 90-580		AbD 87-121
	AbD 87-114		AbD 87-74		AbD 90-705		AbD 87-123
	AbD 87-115		AbD 87-80	10H	AbD 90-534		AbD 87-125
	AbD 87-116		AbD 87-82		AbD 90-575		AbD 87-136
	AbD 87-120		AbD 87-86		AbD 90-655		AbD 87-138
	AbD 87-122		AbD 87-113		AbD 90-723		AbD 87-153
	AbD 87-124		AbD 87-118	11H	AbD 88-70		AbD 87-160
	AbD 87-135		AbD 87-133		AbD 88 71		AbD 87-161
	AbD 87-142		AbD 87-178		AbD 90-719		AbD 87-165
	AbD 87-146		AbD 87-214	2I	AbD 88-187		AbD 87-167
	AbD 87-150		AbD 87-257		AbD 88-196		AbD 87-168
	AbD 87-155		AbD 88-63		AbD 88-205		AbD 87-176
	AbD 87-156		AbD 88-106		AbD 88-210		AbD 87-185
	AbD 87-157		AbD 90-115		AbD 88-224		AbD 87-186
	AbD 87-162		AbD 90-646		AbD 88-227		AbD 87-192
	AbD 87-169	6H	AbD 87-98		AbD 88-229		AbD 87-202
	AbD 87-172		AbD 87-147		AbD 88-231		AbD 87-212
	AbD 87-179		AbD 87-197		AbD 88-237		AbD 87-217
	AbD 87-182		AbD 87-198		AbD 88-241		AbD 87-221
	AbD 87-183		AbD 87-204		AbD 88-279		AbD 87-224
	AbD 87-194		AbD 87-211		AbD 88-302		AbD 87-230
	AbD 87-209		AbD 87-219		AbD 88-309		AbD 87-233
	AbD 87-210		AbD 87-232	31	AbD 87-158		AbD 87-234
	AbD 87-223		AbD 87-248		AbD 88-48		AbD 87-237
	AbD 87-226		AbD 87-256		AbD 88-142		AbD 87-244
	AbD 87-228		AbD 87-259		AbD 88-144		AbD 87-245
	AbD 87-229		AbD 87-266		AbD 88-158		AbD 87-246
	AbD 87-239		AbD 87-292		AbD 88-164		AbD 87-247
	AbD 87-251		AbD 88-33		AbD 88-170		AbD 87-252
	AbD 87-253		AbD 90-29		AbD 88-176		AbD 88-28
	AbD 87-260	7H	AbD 88-213		AbD 88-184		AbD 88-40
	AbD 87-291		AbD 90-94		AbD 88-192		AbD 88-82
	AbD 87-310		AbD 90-233		AbD 88-223		AbD 88-191
	AbD 88-10		AbD 90-259		AbD 88-232		AbD 88-201
	AbD 88-23		AbD 90-327		AbD 88-233		AbD 88-225
	AbD 88-30		AbD 90-349		AbD 88-236		AbD 88-226
	AbD 88-32		AbD 90-351		AbD 88-272		AbD 88-234
	AbD 88-37		AbD 90-370		AbD 88-273		AbD 88-254
	AbD 88-53	8H	AbD 88-44		AbD 88-274		AbD 88-268
Appendix V

Square	Object #						
5I	AbD 87-1		AbD 87-312		AbD 90-483		AbD 88-9
	AbD 87-10		AbD 88-181		AbD 90-495		AbD 88-153
	AbD 87-57		AbD 88-320		AbD 90-504		AbD 88-154
	AbD 87-79		AbD 90-46		AbD 90-517		AbD 88-156
	AbD 87-84	6I	AbD 87-188	_	AbD 90-518		AbD 88-159
	AbD 87-88		AbD 87-242		AbD 90-568		AbD 88-166
	AbD 87-90		AbD 87-258		AbD 90-574		AbD 88-190
	AbD 87-91		AbD 87-267		AbD 90-577		AbD 88-194
	AbD 87-92		AbD 87-273		AbD 90-578		AbD 88-216
	AbD 87-93		AbD 87-275		AbD 90-583		AbD 88-218
	AbD 87–97		AbD 87-277		AbD 90-720		AbD 88-235
	AbD 87-110		AbD 87-290	101	AbD 88-55		AbD 88-256
	AbD 87-127		AbD 87-293		AbD 90-464		AbD 88-264
	AbD 87-128		AbD 87-302		AbD 90-481		AbD 88-267
	AbD 87-129		AbD 87-304		AbD 90-486		AbD 88-286
	AbD 87-130		AbD 87-307		AbD 90-490		AbD 88-287
	AbD 87-143		AbD 90-20		AbD 90-492	4J	AbD 88-163
	AbD 87-144		AbD 90-229		AbD 90-522	5	AbD 88-169
	AbD 87-149	7I	AbD 90-236	_	AbD 90-536		AbD 88-182
	AbD 87-149		AbD 90-238		AbD 90-565		AbD 88-183
	AbD 87-154		AbD 90-239		AbD 90-576		AbD 88-185
	AbD 87-159		AbD 90-251		AbD 90-596		AbD 88-186
	AbD 87-166		AbD 90-310		AbD 90-599		AbD 88-193
	AbD 87-171		AbD 90-312		AbD 90-703		AbD 88-203
	AbD 87-173		AbD 90-333		AbD 90-712		AbD 88-206
	AbD 87-174		AbD 90-335		AbD 90-716		AbD 88-228
	AbD 87-175		AbD 90-345	11I	AbD 87-269		AbD 88-238
	AbD 87-177		AbD 90-374		AbD 90-455		AbD 88-244
	AbD 87-180		AbD 90-377	2J	AbD 87-276		AbD 88-246
	AbD 87-187		AbD 90-437		AbD 87-278		AbD 88-251
	AbD 87-205	I8	AbD 88-68	_	AbD 87-283		AbD 88-257
	AbD 87-206		AbD 90-21		AbD 87-286		AbD 88-261
	AbD 87-215		AbD 90-298		AbD 87-287		AbD 88-263
	AbD 87-218		AbD 90-317		AbD 88-172		AbD 88-280
	AbD 87-225		AbD 90-318		AbD 88-173		AbD 88-283
	AbD 87-225		AbD 90-331		AbD 88-177		AbD 88-284
	AbD 87-241		AbD 90-332		AbD 88-264		AbD 88-300
	AbD 87-261		AbD 90-346		AbD 88-266		AbD 88-311
	AbD 87-262		AbD 90-375		AbD 88-287		AbD 88-313
	AbD 87-268		AbD 90-386		AbD 90-286		AbD 90-88
	AbD 87-271		AbD 90-515	ЗJ	AbD 87-270	5J	AbD 88-211
	AbD 87-288		AbD 90-570		AbD 87-272		AbD 88-215
	AbD 87-295	9I	AbD 88-11	_	AbD 87-274		AbD 88-243
	AbD 87-296		AbD 90-34		AbD 87-279		AbD 88-262
	AbD 87-297		AbD 90-356		AbD 87-280		AbD 88-265
	AbD 87-298		AbD 90-359		AbD 87-281		AbD 88-288
	AbD 87-299		AbD 90-382		AbD 87-282		AbD 88-289
	AbD 87-300		AbD 90-392		AbD 87-284		AbD 88-291
	AbD 87-301		AbD 90-401		AbD 87-285		AbD 88-303
	AbD 87-306		AbD 90-429		AbD 87-286		AbD 88-306
	AbD 87-308		AbD 90-452		AbD 87-287		AbD 88-314
	AbD 87-309		AbD 90-470		AbD 88-5	6J	AbD 88-292

Objects by Findspot

Square	Object #						
	AbD 88-294		AbD 90-305		AbD 90-244		AbD 90-369
	AbD 88-297		AbD 90-307		AbD 90-271		AbD 90-383
	AbD 88-298		AbD 90-320		AbD 90-280		AbD 90-396
	AbD 88-299		AbD 90-398		AbD 90-389		AbD 90-540
	AbD 88-301		AbD 90-400		AbD 90-530		AbD 90-597
	AbD 88-304		AbD 90-444		AbD 90-533	8K	AbD 88-29
	AbD 88-310		AbD 90-496	7K	AbD 88-4		AbD 90-296
	AbD 88-312		AbD 90-544		AbD 88-160		AbD 90-316
	AbD 88-315		AbD 90-601		AbD 88-167		AbD 90-360
	AbD 88-316		AbD 90-717		AbD 88-177		AbD 90-376
	AbD 88-317	9Ј	AbD 90-27		AbD 88-188		AbD 90-380
ĺ	AbD 88-102		AbD 90-357		AbD 90-240		AbD 90-390
	AbD 90-246		AbD 90-362		AbD 90-241		AbD 90-394
	AbD 90-257		AbD 90-363		AbD 90-242		AbD 90-399
	AbD 90-266		AbD 90-364		AbD 90-243		AbD 90-449
	AbD 90-267		AbD 90-368		AbD 90-245		AbD 90-460
	AbD 90-270		AbD 90-371		AbD 90-247		AbD 90-498
	AbD 90-272		AbD 90-373		AbD 90-253		AbD 90-512
	AbD 90-275		AbD 90-381		AbD 90-254		AbD 90-526
	AbD 90-276		AbD 90-387		AbD 90-258		AbD 90-602
	AbD 90-278		AbD 90-388		AbD 90-260	9K	AbD 90-361
	AbD 90-279		AbD 90-391		AbD 90-262		AbD 90-366
	AbD 90-281	J10	AbD 90-422		AbD 90-264		AbD 90-372
	AbD 90-325		AbD 90-424		AbD 90-273		AbD 90-378
	AbD 90-329		AbD 90-434		AbD 90-282		AbD 90-385
	AbD 90-330	2K	AbD 88-271		AbD 90-289		AbD 90-489
	AbD 90-337		AbD 88-276		AbD 90-292		AbD 90-611
	AbD 90-340	3К	AbD 88-250		AbD 90-294		AbD 90-645
	AbD 90-341	4K	AbD 88-208		AbD 90-313	8L	AbD 90-302
	AbD 90-347		AbD 88-217		AbD 90-314		AbD 90-303
	AbD 90-348		AbD 88-220		AbD 90-321		AbD 90-358
	AbD 90-352		AbD 88-305		AbD 90-322		AbD 90-384
	AbD 90-379	5K	AbD 88-247		AbD 90-323		AbD 90-397
	AbD 90-559		AbD 88-318		AbD 90-324	9L	AbD 90-304
J	AbD 87-13		AbD 88-322		AbD 90-326		AbD 90-306
	AbD 88-97		AbD 90-609		AbD 90-328		AbD 90-395
	AbD 90-48	6K	AbD 88-290		AbD 90-344		
	AbD 90-301		AbD 90-1		AbD 90-350		

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