Chapter 3

Urban Form at Tell Brak Across Three Millennia

Jason Ur

Introduction

A common but implicitly held idea in Mesopotamian archaeology is that once urbanism appeared, Mesopotamia was thereafter an urban civilization. Despite various ups and downs through the millennia, which saw individual settlements wax and wane, the city as a settlement form was the defining characteristic of its cultural tradition. It is understood that not all Mesopotamian cities were alike, but there exists an idea that there was a durable essence to its particular type of urbanism. This study will consider one urban place, Tell Brak in northeastern Syria, over a span of almost 3000 years. In particular, it will consider variation in urban form at Brak in its initial incarnation in the fourth millennium BC, its later third-millennium BC reincarnation as Nagar, and finally its mid second-millennium BC form (Table 3.1). Rather than being one city that experienced phases of expansion and contraction, the mound at Tell Brak holds the remains of three qualitatively different cities. The differences in urban form were not insignificant variations around an essential theme but were rather manifestations of evolving social and political structures and institutions. This study will describe the various spatial configurations at Brak, their sociopolitical implications, and their places in broader patterns of urbanism in Mesopotamia.

Archaeological definitions of urbanism

Current trends in archaeological definitions of urbanism have moved away from spatial and demographic aspects to focus more on issues of specialization and inequality (see e.g. Cowgill 2004; Smith 2003). Cities are places that have functions not found in other settlements. Cities are centres of political power; they host religious institutions; they are centres of craft specialization and markets. These aspects have been considered to be better indicators of urban status than spatial size or population. This renewed focus on specialization and inequality rightly brings them and other neglected early complex societies into the discussion of early urbanism.

The danger of de-emphasizing scale and demography is that it can potentially swell the ranks of urban places to the point where the term ceases to have any meaning. Two examples will show the pitfalls of an over-inclusive definition. In the early second millennium BC, Chagar Bazar hosted an administrative complex from which officials of the king Samsi-Addu conducted censuses of pastoral nomadic groups in the vicinity (Talon 1997). It was thus a centre of power and administration that performed a central function for its hinterland. However, Chagar Bazar was only 12 hectares at its maximum and probably had fewer than 1500 inhabitants (McMahon *et al.* 2001; 2009). Almost a millennium earlier, Tell al-Raqa'i was the location of a temple and a monumental circular building complex interpreted as a grain-storage structure (Schwartz 1994). Raqa'i thus had a religious function and served as a centre for cereal redistribution, but its spatial extent did not exceed 0.4 ha. It is increasingly clear that small settlements were much more complex than our models generally assume, and that the belief in the broad existence of small self-sufficient villages with little intra-community status or wealth differences comes from the archaeological over-emphasis on large sites.

If most, if not all, settlements are complex and specialized in some way or another, why do only some of them become spatially and demographically large? A common tendency in human settlements is to grow up to a point and then fission, as one component of the community leaves to form a new settlement elsewhere (Bandy 2004). There are many possible reasons, but frequently such a split results from conflict between families or lineages that renders continued cohabitation difficult or impossible (Johnson 1982). The demographic size at which these splits are most likely to occur is remarkably regular cross-culturally, generally between 150–200 persons (Bintliff 1999). For a settlement to increase beyond this threshold, there

Table 3.1. *Regional and local archaeological periodizations for northern Mesopotamia. LC = Late Chalcolithic; EJ = Early Jazira (Periodization from Oates* et al. *2001, table 1; absolute dates from Akkermans & Schwartz 2003 and Wright & Rupley 2001.)*

Approx. cal. years BC	Brak	Northern Mesopotamia		Southern Mesopotamia	LC & EJ chronology
6500–5900	A	Proto-Hassuna/Pre-Halaf		'Ubaid	
5900–5200	B	Halaf			
5200–4400	C	Northern 'Ubaid			
4400–4100	D	Terminal 'Ubaid		Late 'Ubaid	LC 1
4100–3800	E	Northern Early Uruk		Early Uruk	LC 2
3800–3600	F	Northern Middle Uruk		Middle Uruk	LC 3
3600–3300					LC 4
3300–3000	G	Late Uruk		Late Uruk	LC 5
3000–2900	H	Post-Uruk		Early Dynastic I through Early Dynastic III	EJ 0
2900–2600	J	Ninevite 5			EJ I
2600–2500	K			Early Dynastic IIIa	EJ II
2500–2300	L			Early Dynastic IIIb	EJ III
2300–2100	M	Akkadian			EJ IV
2100–2000	N	Post-Akkadian		Ur III	EJ V
2000–1800		Middle Bronze I		Isin-Larsa	
1800–1600	P	Middle Bronze II/Khabur		Old Babylonian	
1600–1350	Q	Mitanni	LBA	Kassite	
1350–1200	R	Middle Assyrian			
1200–900		Iron I/Aramean		Post-Kassite	
900–600	S	Neo-Assyrian/Iron II			

must be in place social and political institutions to ameliorate these naturally occurring tensions and to resolve in some other way the conflicts that would otherwise result in the fissioning of the community. With settlement growth come increased opportunities for interpersonal tensions to erupt into conflict; continued growth therefore also requires continuing development of social institutions. If external variables are left aside, a demographically large settlement signals the existence of such institutions. For this reason, site size and spatial organization must remain important variables in the study of early urbanism.

The significance of variation in urban form

Although no one believes they are all indistinguishable across time and space, there is a tendency to essentialize Mesopotamian cities and their institutions. Scholars speak of *the* Mesopotamian city (e.g. van de Mieroop 1997), and textbooks treat aspects of Mesopotamian society and culture in synthetic chapters that span a millennium or more. This normative approach to ancient Mesopotamia is rooted within the ecosystems paradigm in archaeology, whereby societies existed in stable states until some internal or external force moved the system across a threshold into a new equilibrium state (Brumfiel 1992). In Mesopotamia, 'urban society' is one such equilibrium state, and the implicit assumption is that it had very similar characteristics whenever it was attained.

The settlement at Brak might be said to have reached the 'urban' equilibrium state at several points, most prominently in the three periods discussed here. Considering Brak only in such ecosystemic terms masks important variations in scale, density and structure between the three cities. A single urban model for Brak is inappropriate, as it is for Mesopotamia as a whole, or early urbanism in general.

The data set for cities at Brak

The most important resource for the study of urbanism at Brak is of course the results of over 30 years of excavations under the overall direction of David and Joan Oates. Their excavations exposed large areas for each of the phases considered here. These have appeared in timely but detailed preliminary reports, especially in the journal *Iraq*, and now in the final reports in the *Tell Brak Excavations* series (Matthews 2003a; Oates *et al*. 1997; 2001). Also important are the excavations of Max Mallowan (1947; see also Emberling 2002) at the 'Eye Temple' and the monumental building of Naram-Sin.

A second complementary data set consists of extensive and intensive surface observations. Mallowan (1947) produced an initial topographic map of the central and outer mounds. Kate Fielden was the first to make controlled observations on Brak's outer town (1981). Geoarchaeological reconnaissance was conducted between 1991–93 (Wilkinson *et al.* 2001). In

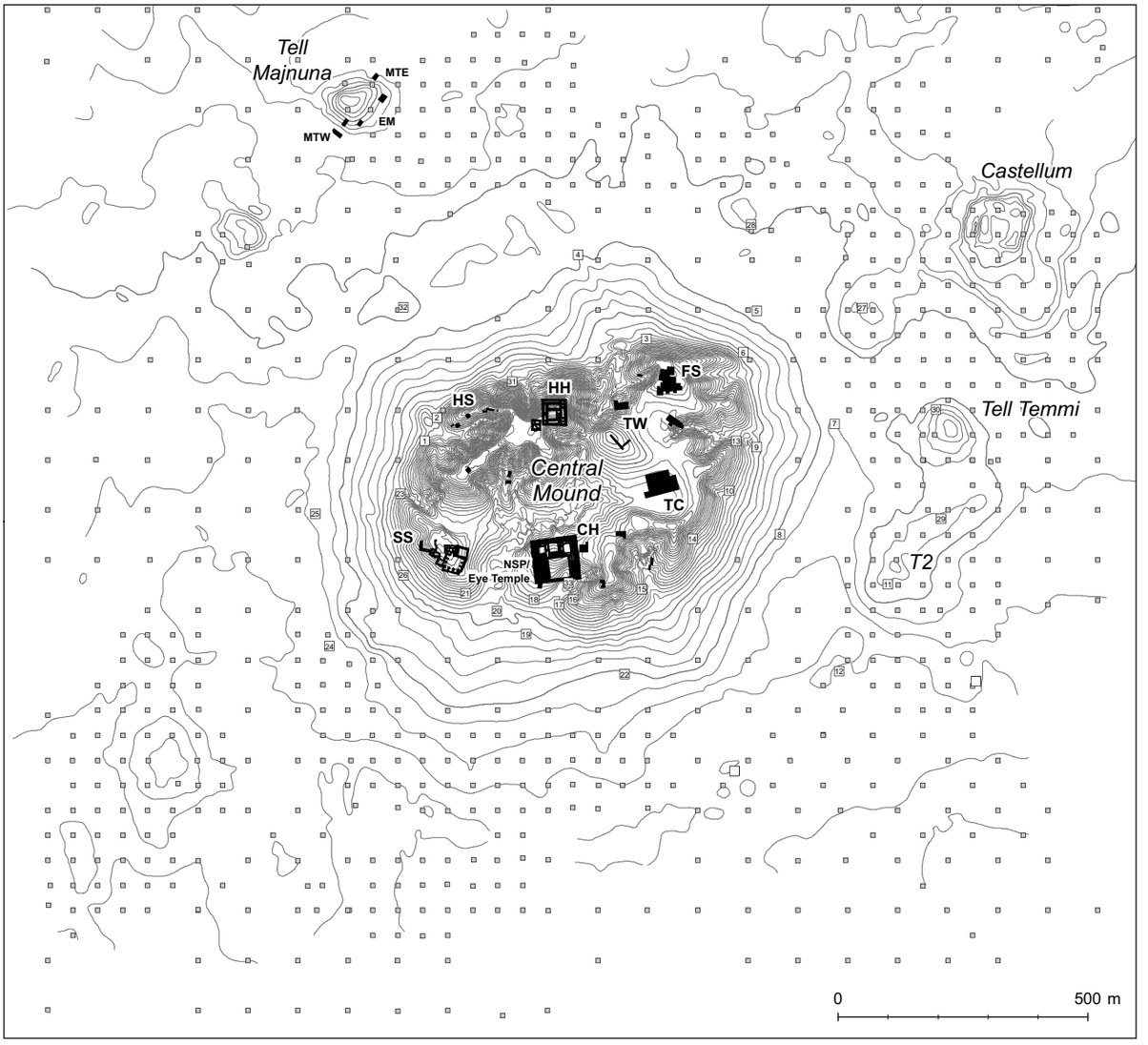

Figure 3.1. *Excavated areas, test trenches and surface collection units at Tell Brak. (Topography derived from survey data collected by Torben Larsen and Tim Skuldbøl.)*

1998, a topographic survey and a series of soundings established the extent of the central mound and the depth of erosional colluvium (Larsen & Skuldbøl, in Emberling *et al.* 1999). Between 2003 and 2006, intensive systematic surface collection was undertaken on the outer mounds jointly by the author and Philip Karsgaard (University of Edinburgh), with the assistance of Fahid Juma'a and Shilan Ramadan (both of the University of Damascus). This work, which was conducted under the aegis of a broader regional survey directed by Henry Wright (see Oates 2005, 28–35), consisted of almost a thousand 10 × 10 m collection units spaced at 50 to 100 m intervals on settled areas, and at 200 m intervals in the off-site areas beyond (Fig. 3.1; for a more detailed description of methods, see Supporting Online Materials to Ur *et al.* 2007). In addition to these field observations, Brak's urban landscape has been further studied using remote-sensing data, particularly the aerial photographs of Antoine Poidebard (1934) and Hartmut Kühne (Wilkinson *et al.* 2001), CORONA satellite photographs (Ur 2003), and high-resolution QuickBird satellite imagery.

The combination of over 30 years of excavation, intensive surface observation, and multiple remote

sensing data sets has produced a very complete record that has few parallels at other Near Eastern sites. This spatial resolution is enhanced by a particularly high chronological resolution, made possible by the exemplary ceramic studies of Joan Oates over her remarkable archaeological career. Our ability to discern Brak's initial phase of urban growth would not have been possible without the unparalleled TW sequence (D. Oates & J. Oates 1991; J. Oates 2002; J. Oates & D. Oates 2002). For the later third millennium BC, her contribution to the Woolley *Festschrift* (Oates 1982) set a standard that would only be exceeded by her own final report on the pottery (Oates 2001). The Late Bronze Age sequence is well known from her work at Brak (Oates 1997) and Tell al-Rimah to the southeast (Postgate *et al.* 1997). Although not discussed in this study, our Neo-Assyrian, Hellenistic and Parthian settlement patterns were informed by Joan's publications at Nimrud (Lines [Oates] 1954; Oates & Oates 1958) and Ain Sinu (Oates & Oates 1959).

Initial urban growth in Tell Brak, Phases E–F (*c.* 4100–3300 BC)

Within the core of Brak's high mound are to be found as yet unexcavated levels that extend back at least into the 'Ubaid (Oates 1987); the scale and structure of these earliest settlements at Brak can only be hypothesized at present. The initial spatial expansion recognized by the intensive survey was during Brak's Phase E (Early Northern Uruk or LC 2), *c.* 4100–3800 BC (Ur *et al.* 2007). In terms of scale, the entire high mound was settled, as excavations have found *in situ* remains across it from west to east (Matthews 2003b). The most striking finds have been monumental and industrially specialized buildings in contemporary levels in Area TW (McMahon & Oates 2007; Oates *et al.* 2007).

Beyond the high mound, sherds from this period occur in discrete clusters of 2 to 4 ha in Brak's outer town (Fig. 3.2). These satellite settlements were separated from each other by vacant areas, and most were set back from the pre-existing settlement at the high mound by 200–500 m. An isolated area of settlement was over 700 m to the northeast. In total, these six clusters and the estimated high mound settlement covered approximately 55 hectares at a time when few of its contemporaries exceeded a few hectares.

In Brak Phase F (Northern Middle Uruk or LC 3–4, *c.* 3800–3300 BC), settlement continued on the main mound (Fig. 3.3). The Eye Temple, on its southern edge, is now understood to have originated at this time (Oates & Oates 2002). The long TW sequence had a range of large and well-built tripartite buildings at this time, some with the capacity for large-scale food production and communal consumption (Emberling & McDonald 2001; D. Oates & J. Oates 1991, 21–31; J. Oates 2002). Massive terracing in the later third millennium BC has complicated matters by using fourth-millennium BC debris as fill, but enough *in situ* traces elsewhere on the mound's fringes, for example HS1 (Felli 2003) and Areas TX and UA (Emberling & McDonald 2003, 10–12), make it certain that the entire central mound was occupied at this time, and probably at high density.

The wide distribution of Phase F materials beyond the mound, which was noted and studied by Kate Fielden in her Oxford dissertation (Fielden 1981), was mapped systematically and quantified during the 2003–2006 surface collection. The spatial patterning shows a substantial expansion from Phase E, now covering an area of at least 130 ha, including the high mound. Each of the satellite clusters grew, in some cases into the previously vacant spaces between them. In several areas, the direction of growth was inward, toward the core settlement on the central mound; however, the settlement on the central mound and the expanded satellite settlement zones still maintained a spatial separation, although reduced from its Phase E extent.

With the increase in spatial extent of the Phase F surface assemblage, the surface collection also documented an increase in the density of artefacts. It is possible that this situation may correspond to an increase in settlement density, so that the Phase F settlement expanded spatially and in terms of the density of persons per unit of area. This interpretation assumes that the rates of ceramic production and consumption were similar between the two settlement phases, which is not always the case (Millett 1991). Given the substantial increase in 'mass-produced' vessel types, such as the 'pie plate' (Oates & Oates 1993, 197), the increased density of Phase F artefacts may be related more to production technology and changing distribution patterns than to increased settlement density.

Most of Brak's outer town is known only from surface collection, but recent fieldwork in two outer town areas has revealed surprising clues for activities not documented on the central mound. A small sounding on the southeastern mound T2 revealed evidence for ceramic firing (Emberling & McDonald 2001, 45). Most recently, trenches at the northwestern edge of the outer town (Areas MTW, EM, etc.) uncovered the remains of several hundred individuals, which had been buried within midden deposits on the edge of the city (McMahon & Oates 2007; McMahon *et al.* 2011). Industrial or unclean activities such as ceramic firing and the disposal of human remains at the edge of the settled area hint at larger spatial segregation of activities across the Phase F city.

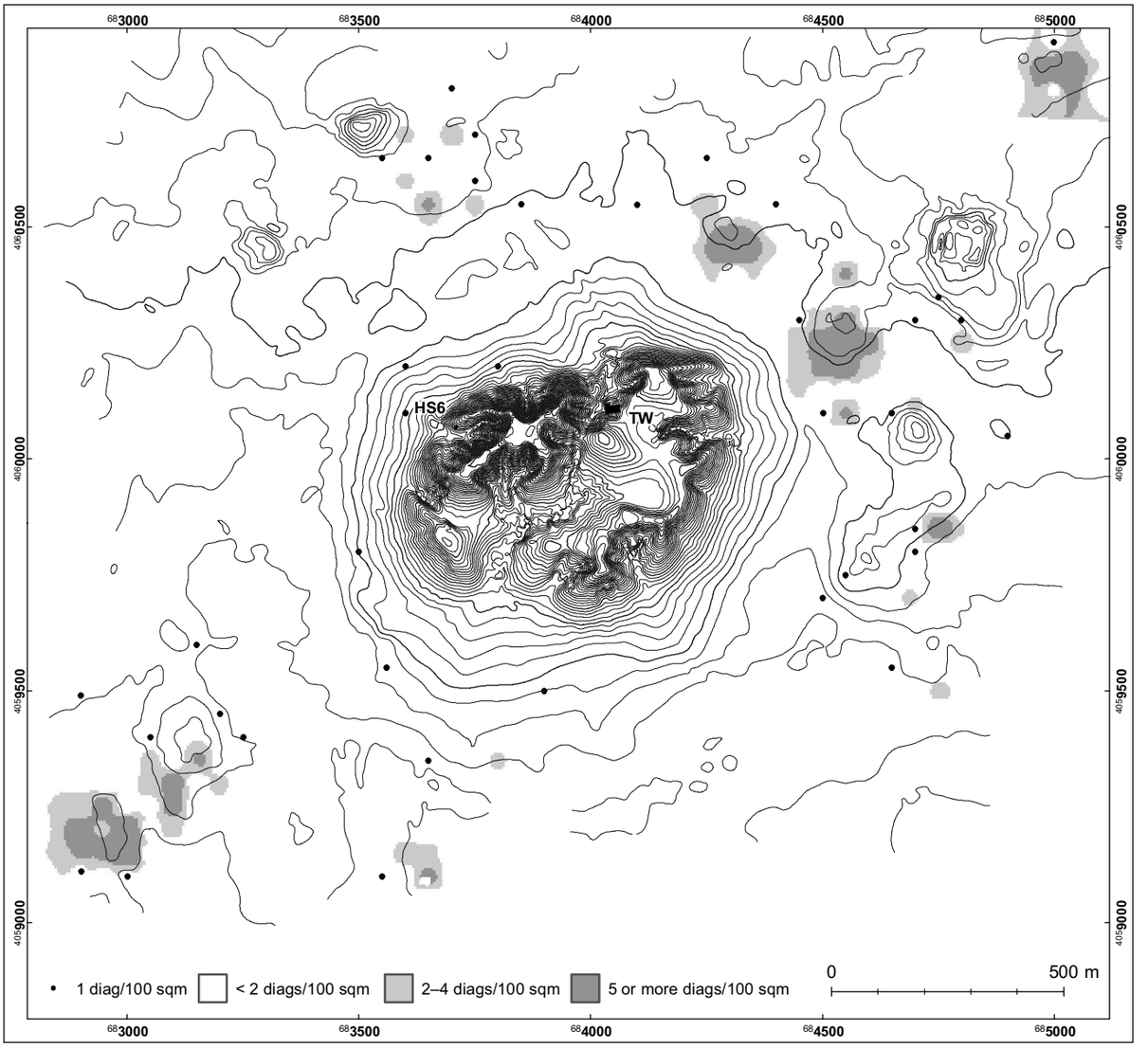

Figure 3.2. *Excavations and surface assemblages of Brak Phase E (*c. *4100–3800* BC*).*

The combination of excavation and survey data suggests a continuous and dynamic evolution. The initial expansion at Brak took place at the end of the fifth millennium BC and was characterized by a high degree of spatial segregation of settlement clusters, which is indicative of some degree of sociopolitical autonomy of sub-communities, perhaps extended households or lineages, within the urban social fabric (Ur *et al.* 2007). In response to population growth, whether endogenous or via immigration, Brak's communities adopted an intermediate strategy between settlement fission and nucleation: they maintained spatial proximity but did not, or could not, maintain spatial contiguity. In the course of the early to mid-fourth millennium BC, further social mechanisms to ameliorate the tendency to fission must have developed, as many areas of the outer town continued to grow into spatially contiguous areas of dense settlement. Northern Mesopotamian urbanism has often been assumed to have been inspired by interaction with the south or with southern Mesopotamians themselves in the course of the Uruk Expansion. The intensive surface collection of Brak makes it clear that urban growth was well under way at Brak before the arrival of southerners and indeed before comparable processes can be documented in the south. Thus urban

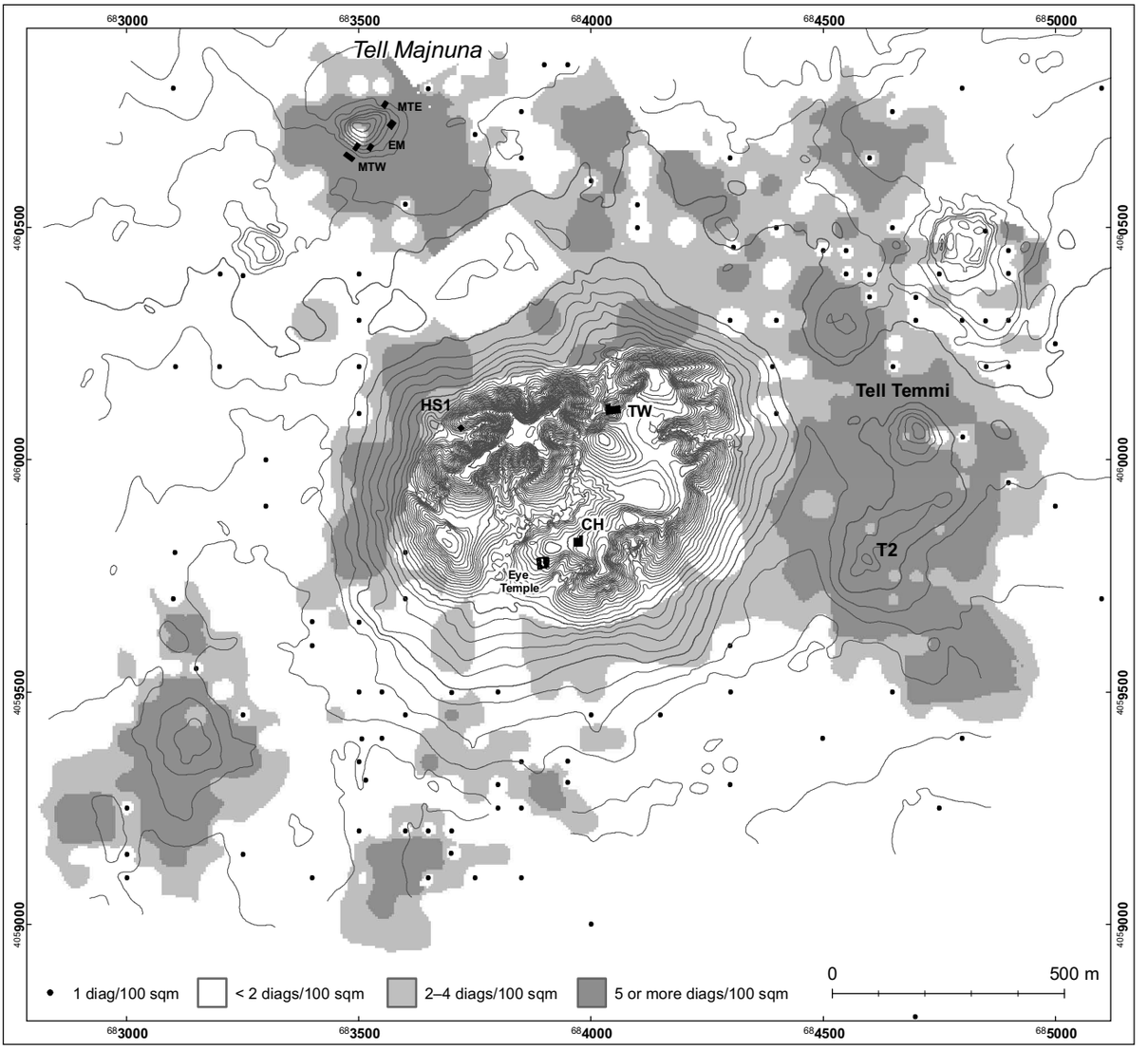

Figure 3.3. *Excavations and surface assemblages of Brak Phase F (*c. *3800–3300* BC*).*

growth may be encouraged and sustained by irrigation for agriculture and transport (e.g. Algaze 2001; 2008) but Brak demonstrates that such growth does not require it.

Brak and late fifth–fourth millennium BC *Mesopotamian urbanism*

This early urban manifestation at Brak is unexpected, given pre-existing models of urban origins in Mesopotamia (Oates *et al.* 2007; Ur *et al.* 2007). Most of its late fifth- to early fourth-millennium BC neighbours were quite small. Its best-known contemporary, Tepe Gawra, covers 1.5 ha (Rothman 2002), and surveyed sites in the eastern basin are generally between 1–3 ha (Lupton 1996, table C.4; Ur 2010). At an estimated 55 ha, Phase E Brak is large but potentially not unique. Dating to a slightly earlier period (LC 1, *c.* 4400–4100 BC), a 300 ha complex of central mound and extensive sherd scatters exists to the south of Hamoukar (THS 25, the Southern Extension; see Ur 2010, ch. 4), and a reassessment of the Tell al-Hawa surface collection estimates its size at this time at 33 ha (Lupton 1996, 127). In southern Mesopotamia, the 'Early Uruk' period is entirely unknown outside surface collections, which have out of necessity employed highly tenuous type fossils (Algaze 2008, 164–5; Nissen 2002). The ques-

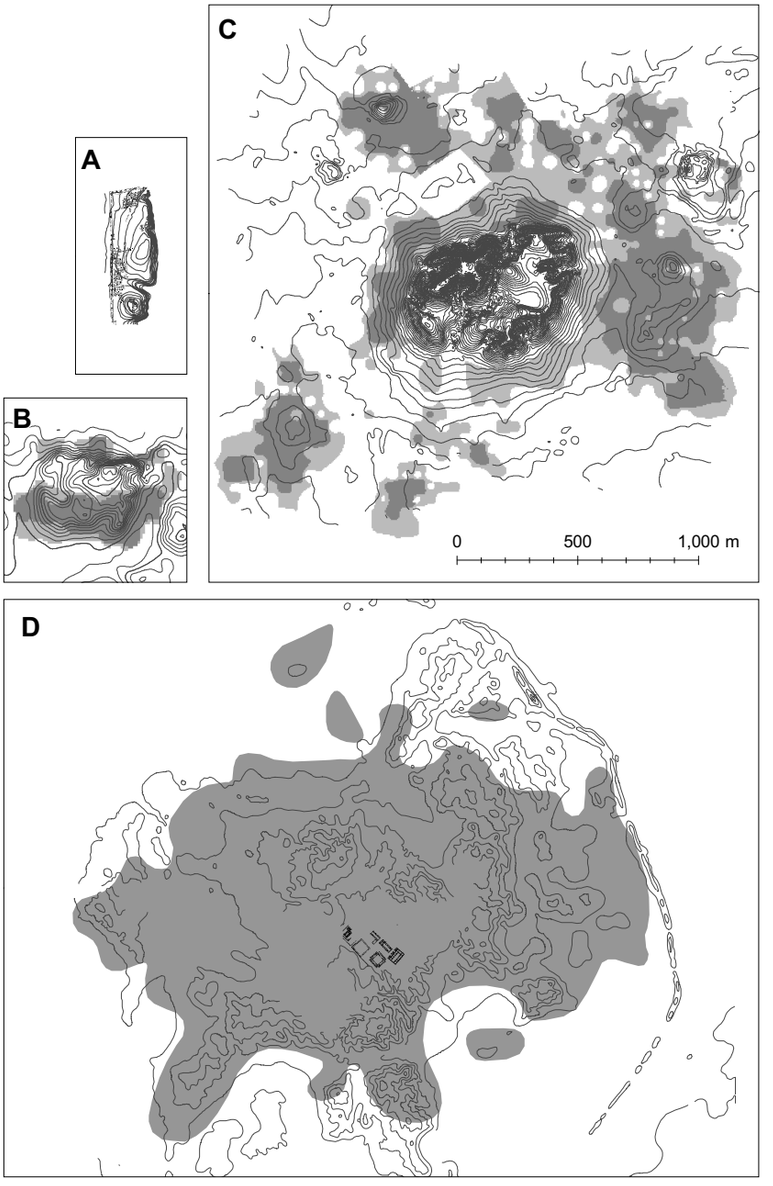

Figure 3.4. *Mesopotamian settlements of the fourth millennium* BC *(Brak Phase F). (A) The 8 ha Late Uruk settlement at Habuba Kabira (based on Sürenhagen 1978, Karte 1); (B) the 15 ha mid-fourth-millennium* BC *settlement at Hamoukar (Ur 2010, fig. 7.9); (C) the 130 ha Phase F settlement at Brak; (D) the 250 ha Late Uruk settlement at Uruk (based on Finkbeiner 1991, Beilage 23). All plans to the same scale.*

tion remains as to whether Brak is exceptional in its early size and dispersed structure, or whether future research employing more intensive methods and an improved ceramic chronology might find further examples of this proto-urban pattern.

Brak reached its greatest spatial extent around the mid-fourth millennium BC, and again it dwarfed its immediate contemporaries (Fig. 3.4). Along with small villages of one to three hectares, a new class of settlements in the 15 ha range began to appear (e.g. Leilan and Hamoukar), but none grew to the spatial extent of the 130 ha Tell Brak. It is difficult to compare Brak to the later fourth-millennium BC settlements of the Uruk expansion, since the best investigated of them were *de novo* foundations with evidence for planning (Vallet 1996; 1998). Furthermore, the data sets are difficult to compare; Brak's tremendous overburden of subsequent settlement will never allow an exposure of fourth-millennium BC levels as broad as was possible at Habuba Kabira, barring revolutionary improvements in archaeological geophysics.

The most interesting comparison to be made is of the divergent urban trajectories of northern and southern Mesopotamia, best represented at Brak and Uruk, respectively. This issue has been approached at a general level by Guillermo Algaze (2001; 2008), who

sees a historically contingent confluence of climatic, geographic and economic (especially transportation technology) variables as critical for explaining why the pervasive urbanism of the south was not matched in the north. Algaze's thesis is by necessity a hypothetical one, designed to guide future research design, because again the data sets are starkly different. Most urban sites in southern Mesopotamia and Khuzistan are known only from surface reconnaissance (Adams 1981; Johnson 1973) and with a few exceptions (e.g. Finkbeiner 1991; Stone & Zimansky 2004) archaeologists failed to follow up these initial observations with more intensive investigations, so little is known of them except for a rough size estimation (see Algaze 2008, app. 1).

The exception is Uruk itself, which has a long history of excavation (summarized in Boehmer 1991) and has been subjected to an intensive surface collection, which found late Uruk ceramics distributed over 250 ha (Finkbeiner 1991, 193–4, Beilage 23). There are still substantial problems in making any structural comparisons, however. Uruk lacks a fine internal ceramic chronology for the fourth millennium BC; the sequence from the deep sounding (Sürenhagen 1986; 1987) has major deficiencies that render it unusable (Nissen 2002). Therefore its Uruk Period occupation cannot be further subdivided, and we cannot compare its urban developmental sequence with Brak's, where the TW sequence has enabled a finer chronological subdivision. Furthermore, the spatial patterning of the surface remains cannot be used uncritically (Finkbeiner 1991, 75–80). Unlike Brak, Uruk's fourth-millennium BC occupations were subsequently resettled, particularly in the Early Dynastic I and Seleucid-Parthian Periods. The latter period witnessed the erection of massive monumental structures. Any assessment of the surface distribution of artefacts must take the possibility of post-occupational cultural transformations into account. At Nippur, another place frequently mentioned as an Uruk Period city, the excavator concluded that its 'Ubaid and Uruk surface assemblages were largely the product of Parthian mud brick extraction (Gibson 1992). It is entirely possible that an initially dispersed pattern coalesced into a large and contiguous settlement at Uruk, but this process cannot be recognized at present due to a coarse ceramic chronology and the homogenizing effects of millennia of later disturbance.

Nagar in the later third millennium BC (Brak Phases L–M, *c.* 2500–2100 BC)

After a spatial reduction in the early third millennium BC (Brak Phases H–K, post-Uruk and Ninevite 5 Periods), a new city emerged at Brak around 2600–2500 BC (Oates *et al*. 2001). By a few centuries later, Brak (ancient Nagar) had become a major territorial kingdom and rival to Ebla, Mari and Kish (Archi 1998; Sallaberger 2007; Sallaberger & Ur 2004). Throughout Brak Phases L (late Early Dynastic, Early Jazira III), M (Akkadian, Early Jazira IV), and N (Post-Akkadian, Early Jazira V), Brak's central mound was characterized by dense residential architecture and large institutional households, especially the large structure built by the Akkadian king Naram-Sin (Emberling & McDonald 2003; Mallowan 1947; Oates *et al.* 2001).

In terms of urban structure, Nagar shows significant differences from its fifth- to fourth-millennium BC predecessor (Fig. 3.5). Most apparent is the abandonment of most of the outer mounds. The exception is the area to the southeast (Mound T2), which had a light but significant scatter on its north and south slopes. The slopes immediately beneath the high mound on its west, north and east slopes are also covered with relatively high densities of later third-millennium BC sherds. A series of 1 × 2 m test trenches in these areas (see Fig. 3.1) demonstrated that any settlement on these slopes must be buried beneath up to 2 m of erosional wash off of the central mound (Larsen & Skuldbøl, in Emberling *et al.* 1999). It is possible that lower settlement existed immediately adjacent to the central mound at this time, but the artefacts visible on the surface certainly derive from erosional processes, rather than from settlement.

The situation on the south slopes of the central mound is more complicated. Sherds of the later third millennium BC surface assemblage are again abundant immediately below the central mound, but here the scatters continue almost 500 m further to the south. Again, some of these scatters can be attributed to erosion from the central mound, in particular the sherds within 200 m of the point where Brak's main gully flows out between Area SS and the Naram-Sin building. This gully drains a large area of the central mound and is responsible for the colluvial delta to its south (Wilkinson *et al.* 2001). The scatters beyond this delta, however, are of higher density and contain large sherds, often with fresh breaks from recent ploughing. This artefact morphology typifies ploughed-out settlement, rather than transported materials.

The most reasonable interpretation of this surface distribution is that Brak had a lower town to the south of the central mound in the later third millennium BC. Its northern part, adjacent to the mound, is now covered over by colluvial material from the mound's large central drainage gully, but its southern extent is immediately below the present surface. Including the high mound and the lower town, dense sherd scatters cover 70 ha.

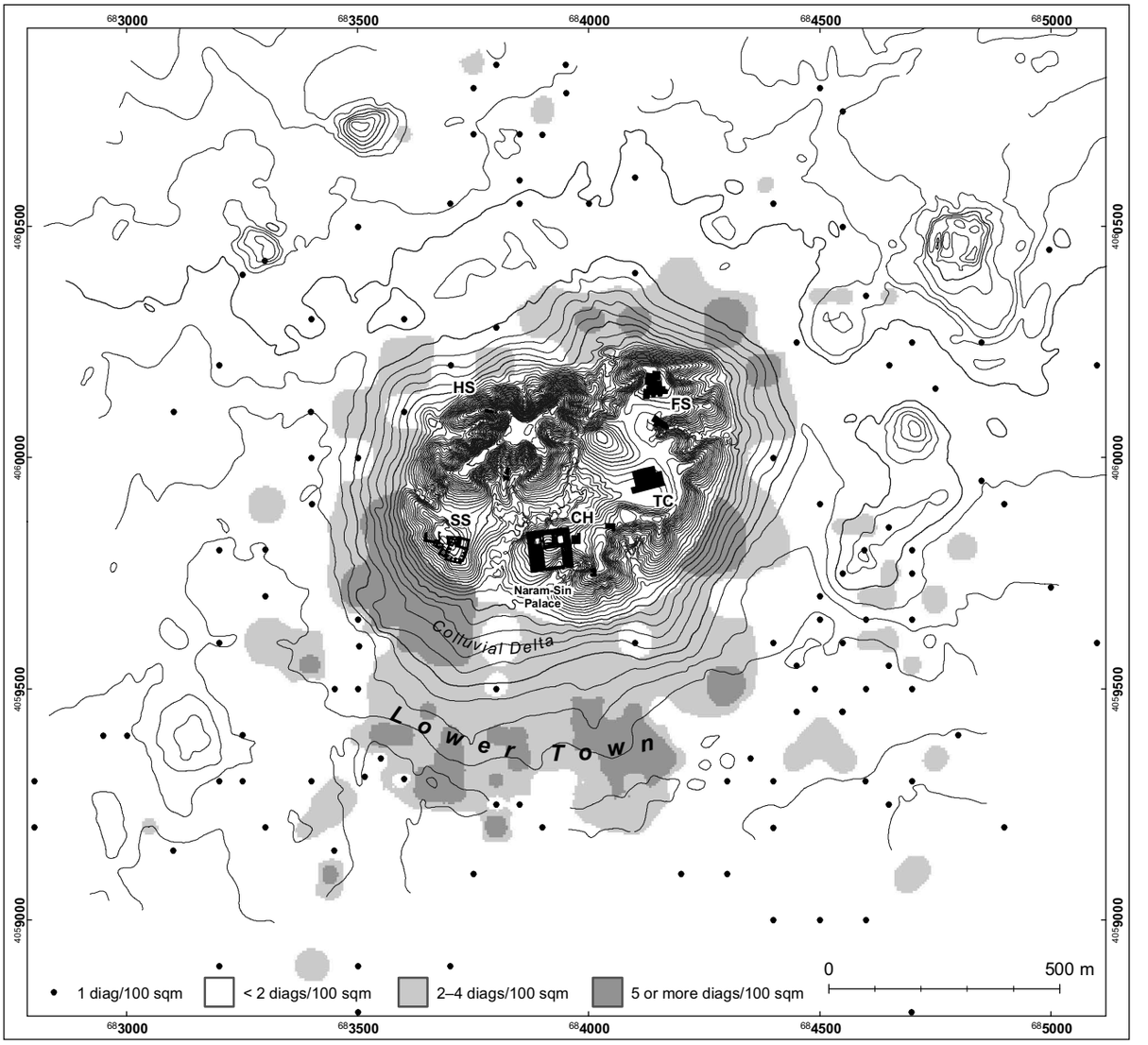

Figure 3.5. *Excavations and surface assemblages of Brak Phases L–M* (c. *2500–2100* BC).

Brak's urban landscape continues beyond the mounded site in two forms: hollow ways and field scatters. Brak's central mound falls in the centre of a radiating group of shallow linear features that are best interpreted as the remains of former trackways (van Liere & Lauffray 1954–55; Wilkinson 1993). These features have been studied via ground observations (Wilkinson *et al.* 2001; this volume), but they are particularly visible in satellite imagery (Ur 2003, fig. 8). Negative landscape features like hollow ways are difficult to date, but we associate these features with the third-millennium city for two reasons. Brak's hollow ways appear to align with areas of the third-millennium city, in particular the gullies of the central mound, and not obviously with any component of the fifth- to fourth–millennium outer town. Furthermore, these features occur in strong association with sites of the later third millennium BC elsewhere in the basin (Ur & Wilkinson 2008; Wilkinson & Tucker 1995), alongside other indirect evidence for agricultural intensification in the form of dense field scatters. At Brak, field scatters extend out as far as 2 km from the central mound (note the distribution of isolated diagnostics in Fig. 3.5). Most sherds in these scatters are very small and badly abraded, but when their fabrics are analysed, they are overwhelmingly the

buff to green well-fired common wares of the later third millennium BC, and only rarely the heavily chaff tempered, reduced core fabrics of the fifth–fourth millennia BC. At Brak, as elsewhere in the basin (Ur 2010, ch. 5; Wilkinson & Tucker 1995, 19–23), manuring of agricultural fields with settlement-derived debris was a phenomenon of the later third millennium BC.

Spatially, therefore, third-millennium BC Brak had remarkable morphological similarities to its urban neighbours in the region. Its high mound and adjacent lower town have strong parallels at Tell Leilan, Hamoukar, and Tell Khoshi (Kepinski-Lecomte 2001; Ur 2010; Weiss 1986). Its off-site record of dense field scatters and hollow ways mirrors the pattern seen at third-millennium Hamoukar and Tell al-Hawa (Ur 2002; Wilkinson & Tucker 1995). The differences that do exist can be explained by Brak's unique fifth- to fourth-millennium inheritance and also its subsequent second-millennium occupation. At 70 ha, it was substantially smaller than these other cities, despite its status as the dominant political force in the region, at least for a time. Brak is thus an example of the dangers of reconstructing political hierarchies from site size alone.

Late Bronze Age urbanism in Tell Brak Phase Q

Perhaps the most radical realignment among Brak's urban manifestations came at the time of the emergence of its Late Bronze Age city. Following the third millennium, settlement at Brak was limited to the high northern ridge, where excavations have documented Middle Bronze Age houses and a Mitanni era palace and temple complex with an adjacent residential area (Area HH; McMahon & Oates 2007; Oates *et al.* 1997). Informal observations by team members and during the program of test trenches were made of a scatter of LBA material below Area HH, which was christened the 'Mitanni Houses'.

From the surface distribution of LBA (most likely early LBA, or Mitanni) sherds, this lower settlement spanned approximately 30 ha on Brak's northern, western, and southwestern outer mounds (Fig. 3.6). These distributions have variable densities; in many places, collection units with high LBA densities are separated by units with none at all. The fields on Brak's western and northwestern outer town are today heavily irrigated and had low surface visibility at the time of collection, so low densities in these units may be an artefact of poor collection conditions. Fields to the southwest were fallow, however, so variable densities there are probably reflective of dispersed or low-density settlement.

At present the area of the LBA outer town does not appear on the ground as a mounded area, due to at least thirty years of intensive mechanized ploughing. However, it was recognized as an area of discrete mounding by Mallowan, and it could still be distinguished in the 1960s, when CORONA satellite photographs were taken. The area appears as one of generally lighter-coloured soils with some intervening darker areas. These latter places were probably locally depressed areas or borrow pits for the material to construct the LBA outer town, but which have since been filled in with plough wash and sediments from irrigation.

From central mound excavations and the survey of the outer town, Brak's Mitanni city appears to have had sharp spatial divisions, which might have corresponded to sharp social divisions. The palace and temple complex of the central mound loomed 40 m above the outer town. Intermediate space was kept vacant; the HS spur was not settled, nor were any of the lower parts of the central mound. With the exception of the isolated occupation of the central mound, Brak thus conforms to the pattern of extensive lower towns of the LBA and Iron Age seen elsewhere in the basin (Wilkinson 2002). If one takes an interpretive step further, it is possible to envision an elite household, including a temple and an attached servants' settlement, raised above the households of peasant farmers and herders. Without excavation in the outer town, the social interpretation of the spatial patterning is preliminary; elsewhere in the Mitanni sphere, lower town settlement could contain elite households (e.g. Nuzi: Starr 1937).

Cities at Brak in comparative perspective

The three cities at Brak discussed here have one major aspect in common: in all three cases, they were characterized by expansion out from the central mound, and a large spatial extension in general. Otherwise, the three have substantial differences in structure.

The spatial separation, and possibly sociopolitical autonomy, of sub-communities in the earliest city at Brak in Phases E–F was succeeded by the dense and nucleated upper mound/lower town arrangement of third-millennium Nagar. Social mechanisms to resolve the intracommunity conflicts that lead to settlement fissioning were already developed during the course of urban growth in Brak Phases E–F. By the time of the appearance of third-millennium Nagar, these mechanisms had become strongly institutionalized. Ironically, the lack of fissioning proved ultimately detrimental to the city's continued viability; Brak and other contemporary settlements approached a demographic ceiling, beyond which environmental and transportation technology

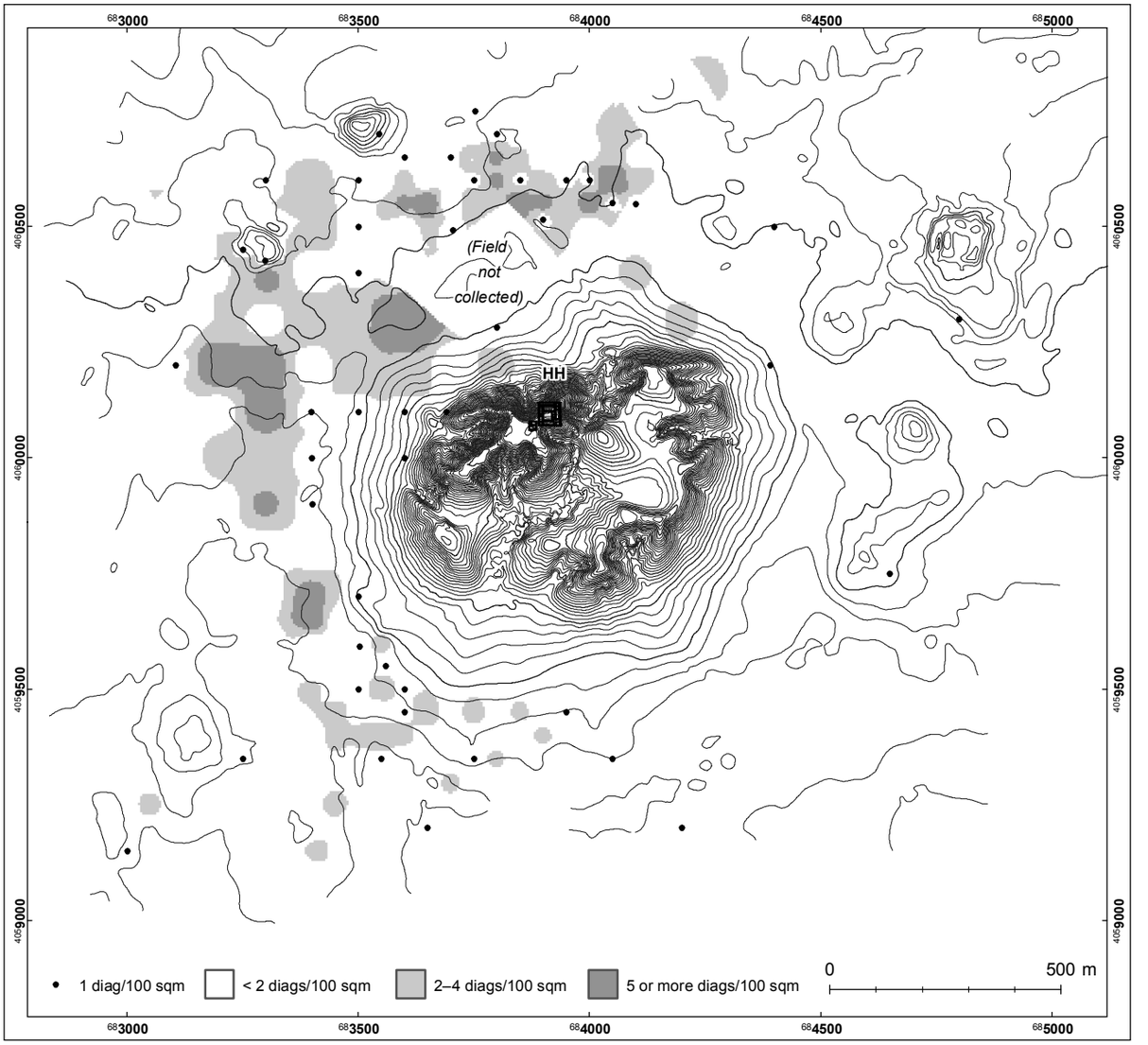

Figure 3.6. *Excavations and surface assemblages of Brak Phase Q (*c. *1600–1350* BC*).*

variables prevented further growth. The subsistence economies of settlements near this ceiling were dangerously overextended and therefore susceptible to collapse when faced with a run of dry agricultural years (Wilkinson 1994).

From a neo-evolutionary perspective, this incrementally increased nucleation might be considered symptomatic of the process of state formation, whereby decision-making becomes hierarchically organized around principles other than kinship. In terms of the spatial dynamics of settlement, this process might include the creation of new social institutions that would allow intracommunity disputes to be resolved without the emigration of one side of the conflict. Another possible interpretation, which does not require the wholesale replacement of kinship organization, supposes that these changes in spatial organization corresponded to the metaphorical extension of the structure of the patrimonial household to encompass lineages, towns and cities, and even entire kingdoms, as has been well documented for the Bronze Age throughout the Near East (Schloen 2001). These crucial questions can be raised but not tested via surface observations; further investigation will require carefully planned excavation.

Brak's Mitanni city might at first glance appear

to be a return to the spatial patterning of the late fifth–fourth millennium, with its spatial separation between central mound and outer town and apparent variable settlement density within the outer town. The latter is probably an artefact of less than ideal surface collection conditions on the Mitanni lower town; the soil discolouration and mounding apparent on CORONA satellite imagery reveal the lower town to be far more contiguous than the surface assemblage would suggest. An alternative, and in my opinion preferable, interpretation is that as third-millennium Nagar was a more centralized and hierarchically organized city than its late fifth- to fourth-millennium antecedent, so Mitanni Brak was even more hierarchical. The central mound of third-millennium Nagar was home to multiple and potentially competing groups, particularly in Phase M, when large institutional households in Areas SS, FS and TC, and the monumental Naram-Sin building, were all simultaneously occupied (Emberling & McDonald 2003; Oates *et al.* 2001). These institutions were spatially integrated within the fabric of the city. The Mitanni city, as far as we can tell from present evidence, was physically and probably sociopolitically dominated by a single elite temple-palace household that was segregated from the bulk of the urban population. In both cities, spatial segregation is an index of social distance. In the case of Phases E–F, it was an expression of autonomy of sub-communities; in the case of Phase Q, it was an expression of power and inequality.

Conclusion

The combined excavation and surface survey data set demonstrates that the variation in structure and scale in the various urban manifestations at Brak is significant. Any attempt to force them into a single essential model of Mesopotamian urbanism discounts the variability critical for describing and ultimately explaining Mesopotamian social evolution. The resultant reconstruction reinforces the Orientalist image of the Near East as stagnant and backward. To the contrary, a more sophisticated multivariate approach pays close attention to such variables in order to characterize settlements through time and cross-culturally (Cowgill 2004). Under the direction of Joan and David Oates, the Tell Brak Project has illuminated the variations in structure and demography in three cities at a single site over the course of three millennia, and even offered some preliminary explanations that we hope can be tested in the future, both at Brak and elsewhere among the diverse cities of Mesopotamia.

Acknowledgements

The Tell Brak Suburban Survey, which was jointly coordinated with Philip Karsgaard of the University of Edinburgh, was funded by the British Academy, the McDonald Institute for Archaeological Research, the Society of Antiquaries, the Charlotte Bonham-Carter Charitable Trust, the University of Michigan, and Harvard University. This research would not have been possible without the permission and encouragement of the Directorate General of Antiquities and Museums of the Syrian Arab Republic, especially Bassam Jamous and Michel al-Maqdissi in Damascus and Abd al-Massih Baghdo in Hassake. I thank Geoff Emberling, Henry Wright and Joan Oates for inviting me to participate in the Tell Brak Project, entrusting the collection of Brak's outer mounds to Philip Karsgaard and me, and for critical methodological and interpretive suggestions during the course of our field research.

References

Adams, R.M., 1981. *Heartland of Cities*. Chicago (IL): University of Chicago Press.

Akkermans, P.M.M.G. & G. Schwartz, 2003. *The Archaeology of Syria: From Complex Hunter-gatherers to Early Urban Societies (c. 16,000–300 BC)*. Cambridge: Cambridge University Press.

Algaze, G., 2001. Initial social complexity in southwestern Asia: the Mesopotamian advantage. *Current Anthropology* 42, 199–233.

Algaze, G., 2008. *Ancient Mesopotamia at the Dawn of Civilization: the Evolution of an Urban Landscape*. Chicago (IL): University of Chicago Press.

Archi, A., 1998. The regional state of Nagar according to the texts of Ebla, in *About Subartu: Studies Devoted to Upper Mesopotamia*, ed. M. Lebeau. Turnhout: Brepols, 1–15.

Bandy, M.S., 2004. Fissioning, scalar stress, and social evolution in early village societies. *American Anthropologist* 106, 322–33.

Bintliff, J., 1999. Settlement and territory, in *Companion Encyclopedia of Archaeology*, vol. 1, ed. G. Barker. London: Routledge, 505–44.

Boehmer, R.M., 1991. Uruk 1980–1990: a progress report. *Antiquity* 65, 465–78.

Brumfiel, E.M., 1992. Distinguished lecture in archeology: breaking and entering the ecosystem-gender, class, and faction steal the show. *American Anthropologist* 94, 551–67.

Cowgill, G.L., 2004. Origins and development of urbanism: archaeological perspectives. *Annual Review of Anthropology* 33, 525–49.

Emberling, G., 2002. Political control in an early state: the Eye Temple and the Uruk expansion in northern Mesopotamia, in *Of Pots and Plans: Papers on the Archaeology and History of Mesopotamia and Syria Presented to David Oates in Honour of his 75th Birthday*, eds. L. al-Gailani Werr, J. Curtis, H. Martin, A. McMahon & J. Reade. London: Nabu Publications, 82–90.

Emberling, G., J. Cheng, T.E. Larsen *et al.*, 1999. Excavations at Tell Brak 1998: preliminary report. *Iraq* 61, 1–41.

Emberling, G. & H. McDonald, 2001. Excavations at Tell Brak 2000: preliminary report. *Iraq* 63, 21–54.

Emberling, G. & H. McDonald, 2003. Excavations at Tell Brak 2001–2002: preliminary report. *Iraq* 65, 1–75.

Felli, C., 2003. Developing complexity. Mid to late fourth-millennium investigations: the northern Middle Uruk period, in *Excavations at Tell Brak*, vol. 4: *Exploring an Upper Mesopotamian Regional Centre, 1994–1996*, ed. R. Matthews. (McDonald Institute Monographs.) Cambridge: McDonald Institute for Archaeological Research/London: British School of Archaeology in Iraq, 53–95.

Fielden, K.J., 1981. The Chronology of Settlement in Northeast Syria During the Later Fourth and Third Millennia B.C. in the Light of Ceramic Evidence from Tell Brak. Unpublished PhD. dissertation, Corpus Christi College, Oxford University.

Finkbeiner, U., 1991. *Uruk: Kampagne 35–37, 1982–1984. Die archäologische Oberflachenuntersuchung (Survey)*. Mainz am Rhein: Philipp von Zabern.

Gibson, M., 1992. Patterns of occupation at Nippur, in *Nippur at the Centennial*, ed. M.D. Ellis. Philadelphia (PA): University Museum, 33–54.

Johnson, G.A., 1973. *Local Exchange and Early State Development in Southwest Iran*. Ann Arbor (MI): Museum of Anthropology, University of Michigan.

Johnson, G.A., 1982. Organizational structure and scalar stress, in *Theory and Explanation in Archaeology*, eds. A.C. Renfrew, M.J. Rowlands & B.A. Segraves. New York (NY): Academic Press, 389–421.

Kepinski-Lecomte, C., 2001. Tell Khoshi et l'urbanisation de la Djezireh au IIIe millénaire, in *Études Mésopotamiens: recueil de textes offert à Jean-Louis Huot*, eds. C. Breniquet & C. Kepinski. Paris: Éditions Recherche sur les Civilisations, 265–86.

Liere, W. J. van & J. Lauffray, 1954–55. Nouvelle prospection archéologique dans la Haute Jezireh Syrienne. *Annales Archéologiques de Syrie* 4–5, 129–48.

Lines [Oates], J., 1954. Late Assyrian pottery from Nimrud. *Iraq* 16, 164–7.

Lupton, A., 1996. *Stability and Change: Socio-political Development in North Mesopotamia and South-east Anatolia 4000–2700 BC*. (British Archaeological Reports, International Series 627.) Oxford: Archaeopress.

Mallowan, M.E.L., 1947. Excavations at Brak and Chagar Bazar. *Iraq* 9, 1–257.

Matthews, R. (ed.), 2003a. *Excavations at Tell Brak*, vol. 4: *Exploring an Upper Mesopotamian Regional Centre, 1994–1996*. (McDonald Institute Monographs.) Cambridge: McDonald Institute for Archaeological Research/London: British School of Archaeology in Iraq.

Matthews, R., 2003b. Traces of early complexity: late fifth- to early fourth-millennia investigations, in *Excavations at Tell Brak*, vol. 4: *Exploring an Upper Mesopotamian Regional Centre, 1994–1996*, ed. R. Matthews. (McDonald Institute Monographs.) Cambridge: McDonald Institute for Archaeological Research/London: British School of Archaeology in Iraq, 25–51.

McMahon, A. & J. Oates, 2007. Excavations at Tell Brak 2006–2007. *Iraq* 69, 145–71.

McMahon, A., Ö. Tunca & A.-M. Bagdo, 2001. New excavations at Chagar Bazar, 1999–2000. *Iraq* 63, 201–22.

McMahon, A., C. Colantoni & J. Frane, 2009. *Once There Was a Place: Settlement Archaeology at Chagar Bazar 1999–2002*. London: British Institute for the Study of Iraq.

McMahon, A., A. Soltysiak & J. Weber, 2011. Late Chalcolithic mass graves at Tell Brak, Syria, and violent conflict during the growth of early city-states. *Journal of Field Archaeology* 36(3), 201–20.

Mieroop, M. van de, 1997. *The Ancient Mesopotamian City*. Oxford: Oxford University Press.

Millett, M., 1991. Pottery: population or supply patterns? The *Ager Tarraconensis* approach, in *Roman Landscapes: Archaeological Survey in the Mediterranean Region*, eds. G. Barker & J. Lloyd. London: British School at Rome, 18–26.

Nissen, H.J., 2002. Uruk: key site of the period and key site of the problem, in *Artefacts of Complexity: Tracking the Uruk in the Near East*, ed. J.N. Postgate. Warminster: British School of Archaeology in Iraq, 1–16.

Oates, D. & J. Oates, 1958. Nimrud 1957: the Hellenistic settlement. *Iraq* 20, 114–57.

Oates, D. & J. Oates, 1959. Ain Sinu: a Roman frontier post in northern Iraq. *Iraq* 21, 207–42.

Oates, D. & J. Oates, 1991. Excavations at Tell Brak 1990–91. *Iraq* 53, 127–45.

Oates, D. & J. Oates, 1993. Excavations at Tell Brak 1992–93. *Iraq* 55, 155–99.

Oates, D., J. Oates & H. McDonald, 1997. *Excavations at Tell Brak*, vol. 1: *The Mitanni and Old Babylonian Periods*. (McDonald Institute Monographs.) Cambridge: McDonald Institute for Archaeological Research/London: British School of Archaeology in Iraq.

Oates, D., J. Oates & H. McDonald, 2001. *Excavations at Tell Brak*, vol. 2: *Nagar in the Third Millennium BC*. (McDonald Institute Monographs.) Cambridge: McDonald Institute for Archaeological Research/London: British School of Archaeology in Iraq.

Oates, J., 1982. Some late Early Dynastic III pottery from Tell Brak. *Iraq* 44, 205–19.

Oates, J., 1987. A note on 'Ubaid and Mitanni pottery from Tell Brak. *Iraq* 49, 193–8.

Oates, J., 1997. The pottery, in *Excavations at Tell Brak*, vol. 1: *The Mitanni and Old Babylonian Periods*, by D. Oates, J. Oates & H. McDonald. (McDonald Institute Monographs.) Cambridge: McDonald Institute for Archaeological Research/London: British School of Archaeology in Iraq, 61–80.

Oates, J., 2001. The third-millennium pottery, in *Excavations at Tell Brak*, vol. 2: *Nagar in the Third Millennium BC*, by D. Oates, J. Oates & H. McDonald. (McDonald Institute Monographs.) Cambridge: McDonald Institute for Archaeological Research/London: British School of Archaeology in Iraq, 151–94.

Oates, J., 2002. Tell Brak: the 4th millennium sequence and its implications, in *Artefacts of Complexity: Tracking the Uruk in the Near East*, ed. J.N. Postgate. Warminster: British School of Archaeology in Iraq, 111–22.

Oates, J., 2005. Archaeology in Mesopotamia: digging deeper at Tell Brak. *Proceedings of the British Academy* 131, 1–39.

Oates, J. & D. Oates, 2002. The reattribution of Middle Uruk materials at Brak, in *Leaving No Stones Unturned: Essays on the Ancient Near East and Egypt in Honor of Donald P. Hansen*, ed. E. Ehrenberg. Winona Lake (IN): Eisenbrauns, 145–54.

Oates, J., A. McMahon, P. Karsgaard, S. al-Quntar & J. Ur, 2007. Early Mesopotamian urbanism: a new view from the north. *Antiquity* 81, 585–600.

Poidebard, A., 1934. *La trace de Rome dans le désert de Syrie*. Paris: Librairie Orientaliste Paul Geuthner.

Postgate, C., D. Oates & J. Oates, 1997. *The Excavations at Tell al Rimah: the Pottery*. Warminster: Aris & Phillips.

Rothman, M.S., 2002. *Tepe Gawra: the Evolution of a Small, Prehistoric Center in Northern Iraq*. Philadelphia (PA): University of Pennsylvania Museum of Archaeology and Anthropology.

Sallaberger, W., 2007. From urban culture to nomadism: a history of Upper Mesopotamia in the late third millennium, in *Sociétés humaines et changement climatique à la fin du troisième millénaire: une crise a-t-elle eu lieu en haute Mésopotamie?*, eds. C. Kuzucuoğlu & C. Marro. Istanbul: Institut Français d'études anatoliennes Georges-Dumézil, 417–56.

Sallaberger, W. & J.A. Ur, 2004. Tell Beydar/Nabada in its regional setting, in *Third Millennium Cuneiform Texts from Tell Beydar (Seasons 1996–2002)*, eds. L. Milano, W. Sallaberger, P. Talon & K. Van Lerberghe. Turnhout: Brepols, 51–71.

Schloen, J.D., 2001. *The House of the Father as Fact and Symbol: Patrimonialism in Ugarit and the Ancient Near East*. Winona Lake (IN): Eisenbrauns.

Schwartz, G., 1994. Rural economic specialization and early urbanization in the Khabur Valley, Syria, in *Archaeological Views from the Countryside: Village Communities in Early Complex Societies*, eds. G. Schwartz & S. Falconer. Washington (DC): Smithsonian Institution Press, 19–36.

Smith, M.L., (ed.). 2003. *The Social Construction of Ancient Cities*. Washington (DC): Smithsonian Institution Press.

Starr, R.F.S., 1937. *Nuzi*. Cambridge (MA): Harvard University Press.

Stone, E.C. & P. Zimansky, 2004. *The Anatomy of a Mesopotamian City: Survey and Soundings at Mashkan-shapir*. Winona Lake (IN): Eisenbrauns.

Sürenhagen, D., 1978. *Keramikproduction in Habuba Kabira-Süd*. Berlin: Bruno Hessling.

Sürenhagen, D., 1986. Archaische Keramik aus Uruk-Warka, erster Teil: die Keramik der Schichten XVI–VI aus den Sondagen Tiefschnitt und 'Sagegraben' in Eanna. *Baghdader Mitteilungen* 17, 7–95.

Sürenhagen, D., 1987. Archaische Keramik aus Uruk-Warka, zweiter Teil: Keramik der Schicht V aus dem Sagegraben; Keramik der Schichten VII bis II in Eanna; die registrierte Keramik aus den Sondagen O XI–XII und K–L XII–XIII; Keramik von der Anu-Zikkurrat in K XVII. *Baghdader Mitteilungen* 18, 1–92.

Talon, P., 1997. *Old Babylonian Texts from Chagar Bazar*. Brussels: Fondation assyriologique Georges Dossin.

Ur, J.A., 2002. Settlement and landscape in northern Mesopotamia: the Tell Hamoukar survey 2000–2001. *Akkadica* 123, 57–88.

Ur, J.A., 2003. CORONA satellite photography and ancient road networks: a northern Mesopotamian case study. *Antiquity* 77, 102–15.

Ur, J.A., 2010. *Urbanism and Cultural Landscapes in Northern Mesopotamia: the Tell Hamoukar Survey, 1999–2001*. Chicago (IL): University of Chicago Oriental Institute.

Ur, J.A. & T.J. Wilkinson, 2008. Settlement and economic landscapes of Tell Beydar and its hinterland, in *Beydar Studies I*, eds. M. Lebeau & A. Suleiman. Turnhout: Brepols, 305–27.

Ur, J.A., P. Karsgaard & J. Oates, 2007. Urban development in the ancient Near East. *Science* 317, 1188.

Vallet, R., 1996. Habuba Kebira, ou la naissance de l'urbanisme. *Paléorient* 22, 45–76.

Vallet, R., 1998. L'urbanisme colonial urukien: l'exemple de Djebel Aruda, in *About Subartu: Studies Devoted to Upper Mesopotamia*, vol. 1: *Landscape, Archaeology, Settlement*, ed. M. Lebeau. Turnhout: Brepols, 53–87.

Weiss, H., 1986. The origins of Tell Leilan and the conquest of space in third millennium Mesopotamia, in *The Origins of Cities in Dry-farming Syria and Mesopotamia in the Third Millennium B.C.*, ed. H. Weiss. Guildford: Four Quarters, 71–108.

Wilkinson, T.J., 1993. Linear hollows in the Jazira, upper Mesopotamia. *Antiquity* 67, 548–62.

Wilkinson, T.J., 1994. The structure and dynamics of dry-farming states in upper Mesopotamia. *Current Anthropology* 35, 483–520.

Wilkinson, T.J., 2002. The settlement transition of the second millennium BC in the western Khabur, in *Of Pots and Plans: Papers on the Archaeology and History of Mesopotamia and Syria Presented to David Oates in Honour of his 75th Birthday*, eds. L. al-Gailani Werr, J. Curtis, H. Martin, A. McMahon, J. Oates & J. Reade. London: Nabu Publications, 361–72.

Wilkinson, T.J. & D.J. Tucker, 1995. *Settlement Development in the North Jazira, Iraq*. Warminster: Aris & Phillips.

Wilkinson, T.J., C.A.I. French, W. Matthews & J. Oates, 2001. Geoarchaeology, landscape and the region, in *Excavations at Tell Brak*, vol. 2: *Nagar in the Third Millennium BC*, by D. Oates, J. Oates & H. McDonald. (McDonald Institute Monographs.) Cambridge: McDonald Institute for Archaeological Research/London: British School of Archaeology in Iraq, 1–14.

Wright, H.T. & E.S.A. Rupley, 2001. Calibrated radiocarbon age determinations of Uruk-related assemblages, in *Uruk Mesopotamia & its Neighbors: Cross-cultural Interactions in the Era of State Formation*, ed. M. Rothman. Santa Fe (NM): School of American Research Press, 85–122.