· CHAPTER ONE ·

The Rescue Excavations at Zeugma in 2000

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INTRODUCTION

The PHI excavations at Zeugma have transformed our understanding of Zeugma and Hellenistic and Roman civilization on the Euphrates frontier. They provide new evidence for Roman influence in Commagene after the death of Antiochus I. They reveal a lively residential district in a city on the eastern Roman frontier that thrived in the second and early third century A.D. and met its end in an undeniably violent sack, now firmly dated to A.D. 252/253 by finds from closed archaeological deposits. Also new is a terminus ante quem for hundreds of artifacts in various media that inform on Roman daily life and the economy, and, in some cases, demand rethinking of stylistic dating for comparanda from other sites in the Roman East. The excavations also provide striking evidence across multiple categories of artifacts for Zeugma's isolation from long-distance trade networks, but also for a surprisingly robust economy based in regional trade. Also abundantly clear are levels of Hellenism and Roman acculturation that align Zeugma with Antioch far more than with other frontier cities like Dura-Europos and Palmyra, where local traditions are known for their resilience. This book describes these excavations and their impact on the archaeology of Zeugma.

Perched on the last stretch of eroded limestone cliffs on the southeast watershed of the Taurus Mountains, Zeugma lies where the Euphrates River rounds its furthest bend to the west and begins to flow south into the Syrian desert (figs. 1–3). Across the Taurus Mountains from Anatolia and across the Euphrates from Mesopotamia, Zeugma was forever between large cultural forces, but never completely part of any one. Freya Stark's perspective reflects why Zeugma is best known to history for commerce and warfare: "The garrisons and places of passage were built where the gorges end and the river opens below Zeugma to the desert."[1] For Pliny the Elder, Zeugma was located squarely on the boundary of four vast territories: Cilicia, Cappadocia, Cataonia, and Armenia.[2] The intersection of these strategic borders for antiquity resounds today in Zeugma's proximity to the route for the old Deutsche-Baghdad Railway and the modern border between Turkey and Syria.[3] The north-south axis persists in the location of Seleucia-on-the-Euphrates/Zeugma in the province of Gaziantep, while Apamea, now submerged on the east bank, belongs to Urfa Province. Even the archaeological finds are stored in archaeological museums under separate jurisdictions: Apamea's in Urfa and Zeugma's in Gaziantep.[4]

Cumont is credited as the first to locate Zeugma at Belkis in 1917, but the site was noticed earlier.[5] Richard Pococke gave the correct location for Zeugma in 1738, although it is unclear if he visited the site after passing through Birecik, where he had been told of piers for a bridge at a place on the Euphrates called Zima 12 miles to the north.[6] A more precise identification was published in 1831 by Major James Rennell, who placed Zeugma "9 G. miles above Beer [Birecik] . . . exactly between Beer and Rumkala [Rumkale]."[7] A few years later, Chesney's survey of 1835–1837 produced maps with topographically correct references to Belkis Tepe and Belkis village, but without mention of Zeugma.[8]

Prior to the rescue excavations of 2000, archaeologists had surveyed the region and probed the riverbanks at Zeugma in fits and starts.[9] In the late 20th century, several campaigns stand out from the rest. Irreversible damage threatened by the Birecik Dam motivated Guillermo Algaze's survey of archaeological sites in the Euphrates Valley above Birecik and Carchemish, now an invaluable record of the region's settlement from Paleolithic to medieval times.[10] At Zeugma, Hellenistic, Roman, and Abbasid sherds were identified and the standing remains described.[11] Including Zeugma and Apamea, Algaze's survey identified over 20 archaeological sites targeted for inundation by the Birecik Dam (fig. 4). Final results of David Kennedy's methodical fieldwork at Zeugma and his important collaboration with the Gaziantep Museum in the 1990s appeared in 1998 under the title *The Twin Towns of Zeugma on the Euphrates*.[12] This involved relentless pursuit of archaeological documentation in the wake of unchecked looting at the site, especially at rock-cut tombs on the slopes of Belkis Tepe and in mosaic-laden Roman houses buried along the banks of the Euphrates.[13] Scientific excavations included several small trenches in 1993 that were immediately adjacent to the zone of excavation targeted in 2000. Vestiges of houses found by Kennedy preserved a vivid record of conflagration and collapse identical to the discoveries of 2000, especially with respect to mud-brick walls collapsed on top of graffiti-coated wall plaster and scorched mosaic pavements.[14] Concurrent with Kennedy's fieldwork, impressive standing remains of a courtyard house with polychrome figural mosaic pavements came to light in excavations by the Gaziantep Museum (1992–1994).[15] These discoveries provided an early glimpse of the original appearance of houses at Zeugma and a taste of what was to come in the rescue work of 2000.

Jörg Wagner's meticulous surveys of the 1970s had laid the foundations for Kennedy's research in the 1990s. Wagner's monograph of 1976 was the first to approach the site as a Roman frontier city with acropolis, fortification wall,

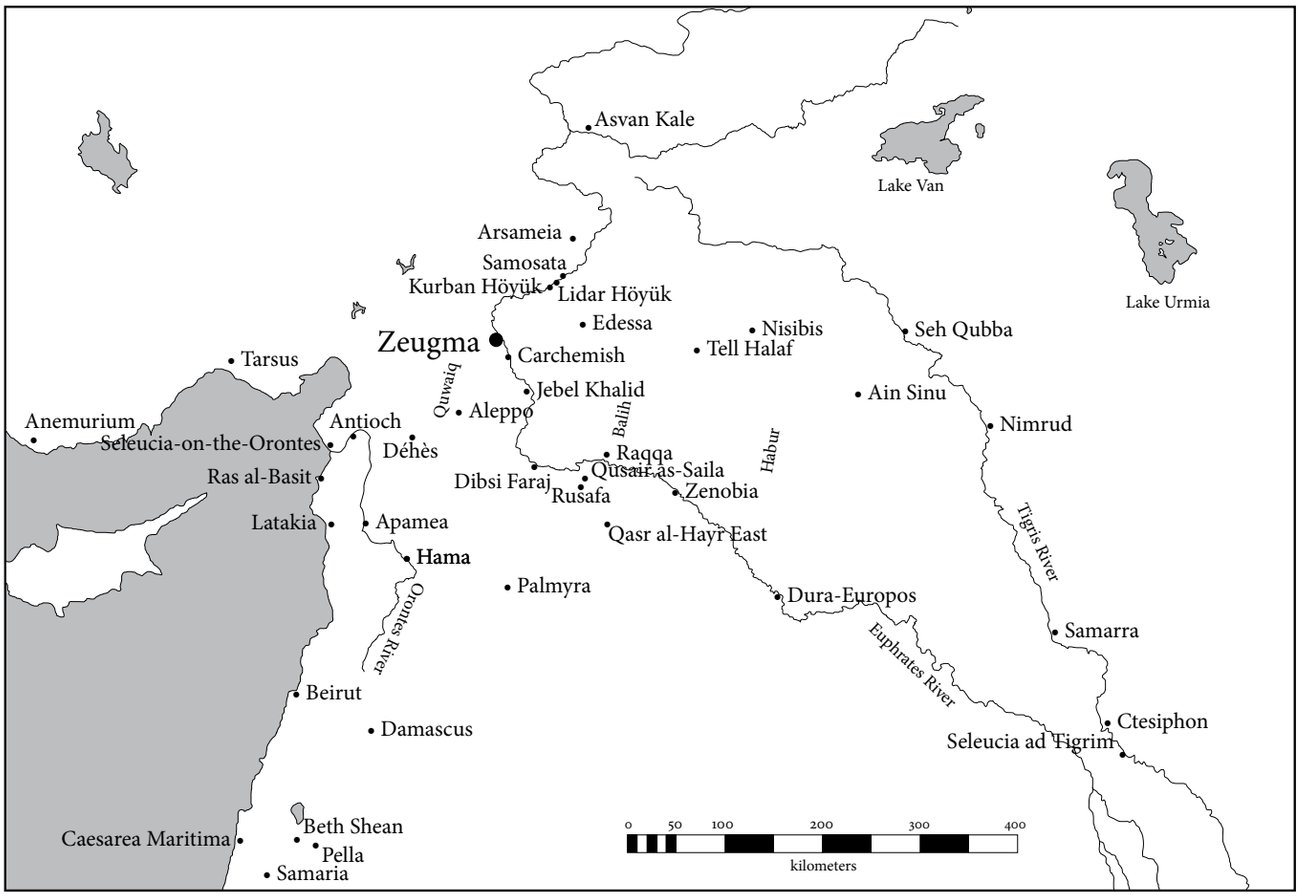

Figure 3. Map of southeast Anatolia and north Syria showing sites mentioned in the text.

bridge, and legionary fortress, and it includes a catalogue of all funerary monuments and stamped tiles of the *legio IIII Scythica* known at the time.[16] Wagner's focus on Zeugma and the elusive legionary fortress of the *legio IIII Scythica* has been revived by a Swiss campaign to Zeugma directed by Martin Hartmann and Michael Speidel, and an update about recent activity appears in volume 3. An important contribution of the rescue excavations of 2000 is the discovery of the first official documentary evidence for the legion's being engaged in the construction and dedication of public monuments at Zeugma (**IN4**). The rescue excavations have also produced convincing evidence for Roman soldiers in the houses at Zeugma. From an iron and bronze face-mask helmet and bronze scale armor, to a near life-size bronze statue of Mars conserved by Centro di Conservazione Archeologica–Roma (CCA) for the PHI rescue project, these new discoveries demand fresh thinking about the Roman army at Zeugma to account for evident connections between city and fortress.[17] This need is satisfied by a focus on the Roman army in no fewer than three of this work's chapters.[18]

Across the river at Apamea, the survey by Algaze identified fortifications with polygonal masonry (Plate 1; fig. 4).[19] Later geophysical and archaeological work by Catherine Abadie-Reynal revealed a more complete plan of the fortifications, about 2,200 m long and punctuated by 27 projecting towers, as well as housing blocks 105 by 38 m in size across the city with evidence for abandonment at some point in the second century B.C.[20] The earliest construction and inhabitation deposits from the PHI rescue campaign at Zeugma now add new meaning to the end of Hellenistic Apamea, for they correspond to the period immediately following the abandonment (see below, under Site Chronology).

In the late 1990s, the imminent impoundment of the Birecik reservoir led to intensified rescue work. Catherine Abadie-Reynal's campaign began to investigate Zeugma in 1996, in conjunction with ongoing work at Apamea. By 1997, bulldozing along the path of the concrete and gravel wall for the dam had uncovered parts of a Roman hypocaust bath with polychrome mosaic pavements, salvaged in part by the Gaziantep Museum.[21] The hurried excavations that followed on the lower banks of the Euphrates were driven by a desire to uncover as many mosaics as possible with earth-moving machinery. About 900 sq. m of mosaic pavements were lifted before water spilled into the unprotected trenches, but without a plan for their conservation or display.[22] The date was June 2000.

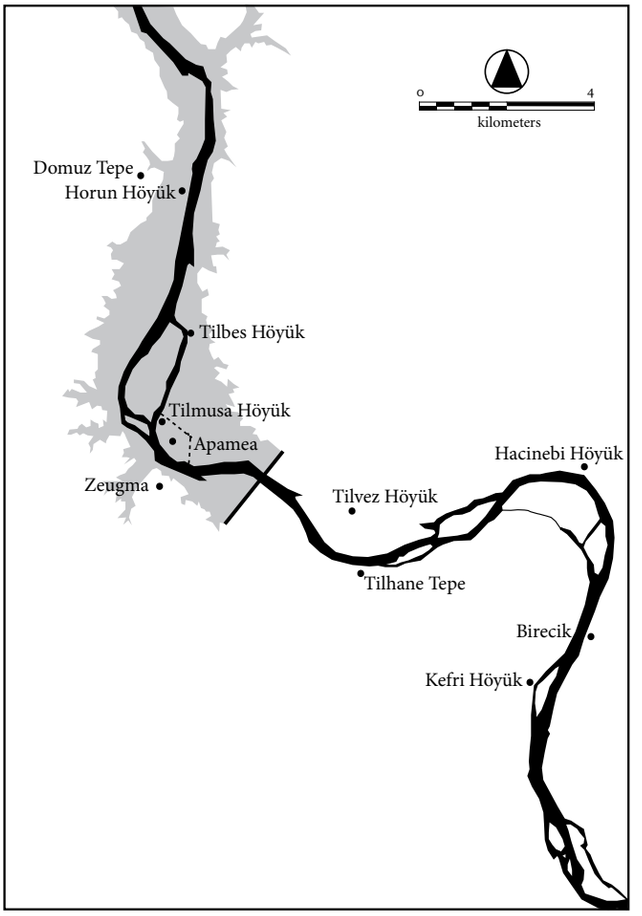

Figure 4. Map of principal sites in the Euphrates River valley near Zeugma, showing the location of the Birecik Dam and the approximate area of the reservoir (the contour line shown is 400 masl). After Kennedy 1998a, fig. 3.32; Algaze et al. 1994, figs. 5 and 6.

From the very start of its involvement at Zeugma in June 2000, The Packard Humanities Institute organized rescue operations on the site within a tripartite framework, in areas designated A, B, and C (Plates 1 and 2).[23] Area A lay along the Euphrates River and now represents the land lost from view beneath the Birecik reservoir, which flooded all parts of Apamea and now covers an estimated 30 percent of the archaeological site of Zeugma (compare figs. 5 and 6). PHI rescue excavations were focused in Area B, at the maximum water level anticipated for the new reservoir, ca. 380 m (Plates 1 and 2; figs. 4 and 6).[24] In this way excavators were able to work uninterrupted for as long as possible before the rising water inhibited meaningful documentation.[25] This salvage strategy involved a focus on archaeological deposits that were bound to suffer from wave action across the surface of the artificial lake. Indeed, winds across the new reservoir now generate powerful waves with devastating consequences for erosion along the shoreline. In contrast, deposits in Area A now lie buried by sediment in less turbulent waters, with the prospect of at least partial recovery in the future. Area C constitutes the remainder of the site not threatened by the reservoir (figs. 6 and 7).[26]

In the months leading up to October 2000, the Euphrates River behind the newly sealed wall of the Birecik Dam was slowly transformed into an artificial lake by a rise in water level of 10–25 cm per day (fig. 8). The PHI rescue project conducted work in eight areas of geophysical survey and thirteen archaeological trenches (Plate 2). Parts of a sizable residential quarter of the ancient Roman city were uncovered during three months of intensive excavation by a team that swelled to over 200 members at its peak. Description of the archaeological deposits and their ramifications for Zeugma's site chronology and historical interpretation is the focus of this introductory chapter. Other chapters describe the architecture and decoration of the houses, their contents, and their conservation. Also presented in this publication are discoveries made in two episodes at Zeugma following the conclusion of rescue excavations and site conservation in 2000: 1) a topographical survey of the new shoreline on the Birecik reservoir conducted by Oxford Archaeology (OA) in spring 2001; 2) rooms with mosaics exposed by a 6 m drop in the water level in the Birecik reservoir during maintenance on the hydroelectric dam in mid-October 2002. CCA investigated these newly exposed rooms in Trench 13 and near Trench 5 in cooperation with the Gaziantep Museum. OA compiled additional documentation.[27] Two mosaics were lifted: a geometric pavement from Room 13H, described by Katherine Dunbabin (appendix to mosaic **M26**), and a large pavement with two figural panels set in geometric borders. The latter was not connected to any area of excavation from the rescue work of 2000 and will be published separately.

THE ARCHAEOLOGICAL DEPOSITS: RECOVERY AND DOCUMENTATION

Following the removal of substantial overburden with earth-removal machinery supervised by staff from OA, the excavation notebooks record the speedy discovery of buildings beneath thick layers of ancient rubble.[28] Vivid evidence for a substantial destruction event involving fire and the immediate collapse of houses came to light in Trenches 2, 9, 11, 13, and 18. Room after room, the excavators peeled back layers of collapsed building debris. Deposits closer to the surface were mixed with colluvium. These were occasionally disturbed in late antiquity, especially where standing remains signaled building material for salvage and where later construction in Trenches 1, 5, 7, and 12 made detection of the destruction event difficult.[29] But to a remarkable degree the excavators came upon deposits untouched since the time of the destruction event and subsequent burial under deep colluvial deposits from the slopes of Belkis Tepe.[30] Below this overburden, the same tripar-

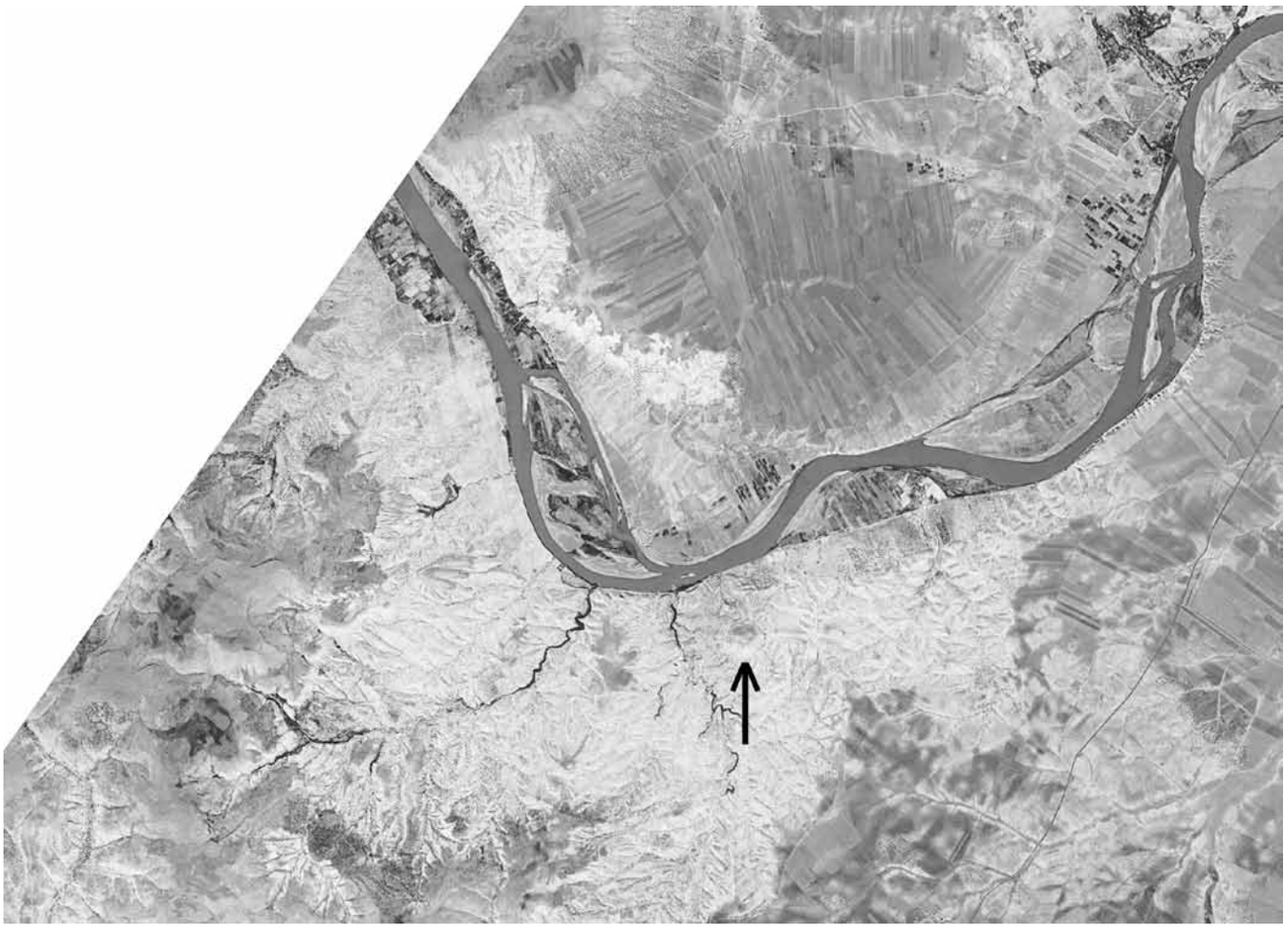

Figure 5. Declassified satellite photograph showing Zeugma and surroundings before the construction of the Birecik Dam in 2000. The arrow indicates Belkis Tepe. Source: EROS Data Center, USGS. Acquisition date: 8 August 1968.

tite sequence of deposits appeared across Area B. Contexts 9082, 9112, and 9138 in Room 9J of the House of the Hoards provide a vivid illustration of this three-stage process of collapse.[31] The upper part of each room was filled with layers of collapsed mud-brick walling, charred on one or both sides, in deposits often over 1 m thick. Once removed, the collapsed mud-brick revealed the perimeters of rooms defined by the tops of limestone walls, in many cases preserved between 1 and 2 m high, and thus signaling the presence of upper stories. Inside the rooms, the collapsed mud-brick walling had sealed deep deposits of burnt debris with thick lenses of ash and charcoal mixed with charred mud-brick and limestone rubble. This intermediate stage of collapse is rather well illustrated in Trench 9 by the context for a large hoard of coins (Hoard 1), which was found on top of debris collapsed from the roof and upper story, but below collapsed mud-brick walling, which, when standing, may have been the hiding place for the hoard.[32] Iron window grilles, smashed roof tiles, and charred timber roof beams were found in abundance. From beneath this debris the excavators recovered undisturbed deposits fallen directly on top of floors and mosaic pavements, replete with crushed remains of furniture, doors, and household accoutrements in iron, bronze, ceramic, and glass in a blackened matrix of charcoal and ash.

In the face of rising water in the Birecik reservoir, there were obvious limits on recording during the excavations of 2000.[33] The unpublished interim report prepared by OA is a helpful guide to the activities of 2000, and it provides preliminary interpretations of the deposits and finds before intensive study of the artifacts. This is the basis for the summary publication of some of the finds in a supplement of the *Journal of Roman Archaeology*.[34] Beyond these resources, the comprehensive view adopted for the final reporting presented in this volume made abundant use of the original excavation documentation. Table 1 gives the dates, area excavated, and lead personnel for each trench.[35] Within this framework, the excavation notebooks bring to light excavation at a furious pace with a large support staff, both in the trenches and in the temporary artifact repositories at Birecik. In some cases single context numbers were assigned to deposits up to 24 cubic meters in size (e.g., contexts 2278 and 2285). While some deposits of this size were replete with artifacts in telling contexts, consistent

Figure 6. Satellite photo showing Zeugma and surroundings after the construction of the Birecik Dam. The arrow indicates Belkis Tepe. Acquisition date: 2001.

Figure 7. Panorama across Zeugma and the Birecik reservoir. View from the summit of Belkis Tepe, 2001. Parts of the ancient city that escaped inundation lie buried beneath colluvium near the water's edge.

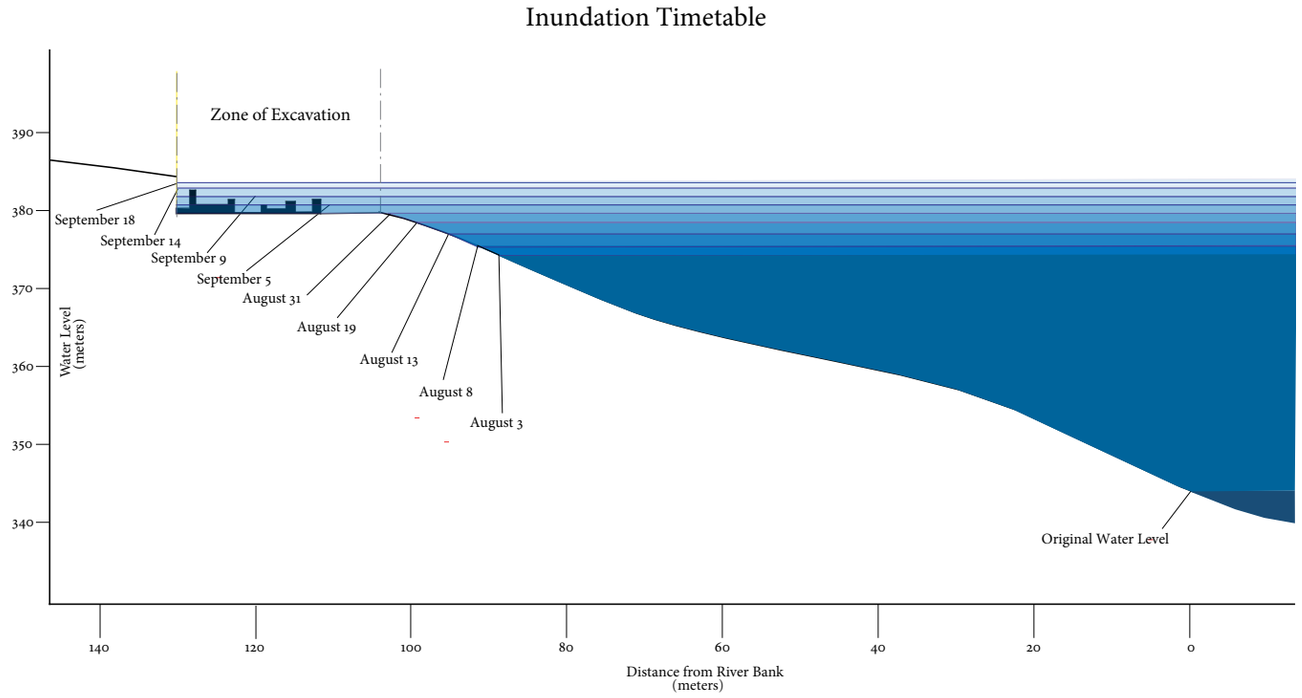

Figure 8. Diagram showing the rate at which water rose in the Birecik reservoir during the PHI rescue excavations of 2000. Drawn by Jamon Van Den Hoek.

Trench	Date of excavation	Area (m²)	Fieldbook initials
1	mid June	347	FB
2	June 15 to August 30	821	PF, CB, SAM, EG, SP, RL, HWE, AH, JJC, SAV, AB, JC, MO, EM, TJM, JGE, TEJ, BK, JS, PG, GM, JG, ACTB, TGJ
4	early July	41	JMT, KSN, SG
5	July and August	257	PEC, DD, AN, JM, GC, MOH, CL
7	July and August	1,608	AB, CJ, RT, PIP, TH, JS, KA, PS, AJ, LOC, SDT, MS, MOH, TD, TMS
9	mid June to late July	105	ATM, HW, RW, AMO, DD, JH, MGR, AJ, AJJB
10	mid August to mid September	267	GC, TLB, SB, TD, MOH, CL, MGR
11	July 20 to August 9	624	JMS, RT, KSN, TD, SDT, HWO, MS, MLC, RW
12	August 10 to 24	299	JJC, PEC, MOH, GM, DD
13	August 27 to September 16	74	JH, RL, AMO, JJC, JG, DD
15	August 14 to September 29	563	LOC, AJ, MS, PEC, TH, PIP, SDT, JMS, EG
18	August 7–31	110	DD, JH, AMO, TLB, YW, GM, SB, JG, RL, TLB, EG, TD
19	August 17–27	122	HWE, EG, JJC, RL
		Total: 5,238	

Table 1. Dates, area excavated, and personnel for each trench.

detail in recording is an understandable casualty of excavation at this scale and intensity. Arguably lamentable is the absence of a coordinate system for understanding the size and specific location of contexts, as well as spatial relationships between them.[36] Fixed points were only recorded for a fraction of finds.[37] As a consequence of this limitation, the available data do not allow for comprehensive analysis of a room's assemblage, especially in terms of spatial relationships between finds. Even meaningful analysis of assemblages from room to room is challenged by contexts that

Trench		Ceramic	Glass	Iron	Animal bone
	Total weight (g)	Item count	Item count	Item count	Item count
1	49,740	1,581	709	0	0
2	342,692	11,735	8,305	2,121	794
4	7,610	131	28	5	128
5	21,300	337	58	14	90
7	157,735	2,360	990	280	1,124
9	90,092	32,141	1,098	1,048	194
10	23,420	432	4	8	20
11	22,400	292	220	98	117
12	78,600	1,381	277	12,179	218
13	28,720	645	57	132	34
15	169,510	4,833	134	37	1,528
18	125,310	2,665	531	860	482
19	20,600	424	0	0	29
Total	**1,137,729**	**58,957**	**12,411**	**16,782**	**4,758**

Table 2. Quantification of bulk finds per trench.

span multiple rooms without specific provenience assigned to artifacts (e.g., context 2012 across Rooms 2E and 2F). Therefore, in this volume, unless data for specific findspots allow for analysis in greater detail, functionality and space are best understood broadly at the level of groups of rooms and parts of houses.[38]

A final note about numbering is in order, especially because changes in systems used for excavation have been introduced in this final publication to enhance usability and readability.[39] The excavators assigned independent sequences of (primarily) five-digit numbers to contexts, samples, inventoried objects (Small Finds), rooms, walls, plans, and section and elevation drawings. As a result, the same identifier often points to different items in the excavation documentation. For example, in the excavation records 2045 is assigned to a wooden beam, but also to a worked bone object (**B22**) from context 2007. Aspects of these burdensome numbering schemes have been eradicated to enhance clarity. Obvious domestic units were named to reflect a particular aspect of their function or decoration (e.g., House of the Hoards, House of the Bull). Room numbers were changed to an alphanumeric system. Small Find numbers remain the same, but they have been supplanted by alphanumeric catalogue numbers (in boldface) for organization in the artifact catalogues by material classification, and sometimes by function (table 3).[40] The context numbers are the primary index to the deposits and finds: these have not been changed. The trench of origin is indicated by the initial digits of these numbers (e.g., context 2008 belongs to Trench 2; context 18070 belongs to Trench 18).[41]

These problems come as no surprise given the focus on salvage and rescue, and most challenges were overcome in the organization of this book. In fact, the final reporting in these volumes has embraced the enormous interpretive potential of the vast set of data about Zeugma that was salvaged and recorded in meaningful ways. In the artifact catalogues, contributing authors describe 3,489 objects from among the finds inventoried by the excavators. No less important is the contribution of the vast quantity of bulk finds to the interpretation of each context (table 2).

Prefix	Material	Author	Number of objects catalogued
A	Architecture	Rous and Aylward	101
AM	Transport amphorae	Reynolds	557
B	Worked bone and ivory	Charles	45
BR	Copper alloy	Khamis	170
C	Coins	Butcher	790
G	Glass	Grossmann	120
GD	Gold objects	Scott	3
IN	Inscriptions on stone	Crowther	15
IR	Ironwork	Scott	616
L	Ceramic lamps	Hawari	213
LW	Loom weights	Parton	16
M	Mosaics	Dunbabin	27
ML	Military equipment	Scott	3
PT	Pottery	Kenrick	622
Q	Quern	Parton	27
SM	Stone mortar	Parton	13
SS	Stone sculpture	Rose	6
ST	Stone tools	Parton	4
SV	Stone vessels	Parton	4
SW	Spindle whorls	Parton	65
TC	Terracotta figurines	Gingras and Aylward	24
TX	Textiles	Cole	27
ZB	Bullae	Herbert	21
			Total: 3,489

Table 3. Guide to prefixes for alphanumeric catalogue numbers.

A few further notes on the organization of this book will enhance the reader's experience. The excavators assigned objects they deemed undiagnostic and unworthy of inventory to the category Bulk Finds. In the postexcavation study phase, some specialist authors identified objects in this general category for inventory as single objects worthy of note in their catalogues of finds. These objects are identifiable by a context number with an extension appended to the end (e.g., Paul Reynolds's context 7118.2 for **AM1**). Conversely, the excavators sometimes assigned inventory numbers to objects that were later not deemed worthy of single-find status in the catalogues of the specialist authors. These objects appear at the conclusion of each trench in the list of context descriptions, with the inventory number assigned by the excavators retained for correspondence with the project archive (with the prefix SF for small find or WS for worked stone).[43]

The dated Ceramic Groups A through G came together from analyses conducted by Philip Kenrick and Paul Reynolds (table 4). Table 5 provides a list of artifact joins across contexts. These are physical joins between fragments of the same object, and they are therefore consequential for stratigraphy and dating. Other connections between contexts are established in the artifact catalogues on the basis of functionality or by the allocation of fragments to the same object without evidence of physical joins.[45] Examples worthy of repetition here pertain to numismatic finds described by Kevin Butcher in volume 3 (table 6). Thirty-three coins from the deep destruction deposits in Trench 9 may have belonged to separate hoards that were dispersed across Room 9J during the collapse of the house.[46]

Ceramic Group and date	Dated contexts
A. Possibly late second century B.C.	Kenrick: 19005
B. Late Augustan or Tiberian	Kenrick: 7118, 15009, 15095
C. Flavian	Kenrick: 2283, 2300, 7007, 7023
D. Mid-third century A.D. (not later than A.D. 252/253)	Kenrick: 2010, 2012, 2016, 2023, 2039, 2080, 2130, 2139, 2160, 2176, 2191, 2260, 2278, 2376, 18108. Reynolds: 2011, 2014, 2017, 2031, 2032, 2086, 2241, 2269, 2295
E. Possibly second half of fifth century A.D.	Kenrick: 4004, 4008, 4011, 5048, 5078
F. Seventh century A.D.	Kenrick: 7005, 7026, 7036, 7062, 7065, 7066, 7076, 7203, 7214, 12002, 12011, 12012. Reynolds: 5034, 7003, 7004, 7006, 7060, 7061
G. Islamic (eighth to ninth centuries?)	Kenrick: 1004, 1007, 1010, 1018, 1024, 1047

Table 4. Ceramic Groups.

Across contexts 12011 and 12012 in Trench 12 a potential link between the coins is not as evident, but ceramic joins across these contexts strengthen the case (compare tables 4 and 5).

Context number	Artifact(s)	Connected context(s)
2012	**SM1**	2158
	PT458	2039
	AM124 (joins **AM188**)	2080
2014	**AM145** (joins **AM150**)	2031
2031	**AM150** (joins **AM145**)	2014
2039	**PT328**, **PT397**, **PT420**	2080
	PT458	2012
2080	**PT328**, **PT397**, **PT420**	2039
	AM188 (joins **AM124**)	2012
2139	**PT387**, **PT416**	2160
2158	**SM1**	2012
2160	**PT387**, **PT416**	2139
4008	**PT489**	4011
4011	**PT489**	4008
7003	**AM268** (joins **AM271**)	7004
	AM269	7060?
7004	**AM271** (joins **AM268**)	7003
7006	**AM283** (joins **AM344**)	7065
7036	**AM296** (joins **AM303**)	7060
7060	**AM303** (joins **AM296**)	7036
	AM306	7003?
7065	**AM344** (joins **AM283**)	7006
9175	Ceramic join, see Tobin, n. 136	9176
9176	Ceramic join, see Tobin, n. 136	9175
12002	Possible ceramic join, see Reynolds	12011
12011	Possible ceramic joins, see Reynolds	12002, 12012
12012	Possible ceramic joins, see Reynolds	12011

Table 5. Numerical list of contexts with artifact joins discovered in postexcavation analysis.

SITE CHRONOLOGY

Site chronologies for Zeugma published by Wagner and Kennedy take their primary evidence from the historical and epigraphic record. Results from the PHI rescue campaign of 2000 now allow for the development of the first-ever site chronology for Zeugma based on a substantial sequence of closed archaeological deposits from late Hellenistic to early Islamic times.[47] No single trench preserved the complete uninterrupted sequence, but the full range of activity was evident across a number of separate trenches. The principal event detectable in the archaeological record at Zeugma is the sack of Shapur I described in the trilin-

Context	Artifact(s) number	Connected context(s)
9082	**C760** (Hoard 3); **C770**, **C787** (Hoard 4)	9112, 9138
9112	**C761**, **C762**, **C763**, **C764**, **C766** (Hoard 3); **C769**, **C771**, **C772**, **C773**, **C774**, **C775**, **C776**, **C777**, **C779**, **C780**, **C782**, **C783**, **C784**, **C785**, **C786**, **C788**, **C789**, **C790** (Hoard 4)	9082, 9138
9138	**C758**, **C759**, **C765**, **C767**, **C768** (Hoard 3); **C778**, **C781** (Hoard 4)	9082, 9112
12011	**C219**, **C220**, **C222**, **C226**, **C227**, **C229**, **C230**, **C231**, **C232**, **C233**, **C253**, **C258**, **C261**, **C264**, **C270**, **C273**, **C274**, **C275**, **C276**, **C277** (possible hoard)	12012
12012	**C228** (possible hoard)	12011

Table 6. Possible coin hoards dispersed across contexts in Trench 9 and in Trench 12.

gual *Res Gestae Divi Saporis* at Naqsh-e Rustam, dated to A.D. 252/253.[48] The latest datable coin from the sack layer at Zeugma is an Antioch radiate of Trebonianus Gallus dated no earlier than A.D. 252/253 (**C194**), found on the floor in the House of the Plastered Floor under charred building debris (context 18083). The coin belongs to the second of two issues in the second consulship of Gallus, but the date for the beginning of the second issue is not known.[49] The dates for Gallus's second consulship are January 252 to August 253.[50] The PHI rescue excavations at Zeugma therefore provide datable evidence from a closed archaeological deposit for the sack of Zeugma by Shapur I and the Sasanian army no earlier than January A.D. 252.[51] The context of the find in question (**C194**) suggests that the sack belongs sometime after this date, but how long after is not known. The evidence does not warrant a pretense of further precision. Therefore, A.D. 252/253 is used in these reports. Other deposits with evidence for construction, occupation, destruction, and abandonment fall clearly on either side of this horizon, and these provide a reasonable guide to life in the city before and after the mid-third century. In some cases, the archaeological dates for these deposits lend themselves to interpretation within the historical framework for Zeugma known from independent sources, summarized below for reference.[52]

300 B.C.	Foundation by Seleucus I Nicator
64 B.C.	Zeugma absorbed by kingdom of Commagene; Commagene becomes client kingdom of Rome
53 B.C.	Crassus leads Roman army to Carrhae through Zeugma
38 B.C.	Antony's siege of Samosata
A.D. 17	Provincial status imposed on Commagene by Germanicus (under Tiberius)
A.D. 70	Approximate date of arrival of *legio IIII Scythica* at Zeugma
A.D. 114–117	Trajan's Parthian War
A.D. 161	Northwestern Mesopotamia annexed by Lucius Verus
A.D. 252/253	Sack of Zeugma by Sasanian army
A.D. 256	Sack of Dura-Europos by Sasanian army
A.D. 636	Byzantine army defeated at the Yarmuk River

Datable finds from closed deposits complement this historical framework and illuminate phases of construction, occupation, and destruction in the lifetime of the city (table 7).

There is little archaeological evidence from Zeugma for the period before Alexander the Great crossed the Euphrates in 333 B.C., and this is consistent with the general absence of urban centers in this region.[53] Some degree of Hittite and Persian influence is certain, but excavations have not revealed the extent to which these empires had interest in the river crossing at Belkis Tepe.[54] It is therefore no surprise that the excavations produced little information about the earliest years of the city after its foundation by Seleucus I Nicator.[55] The archaeological evidence from Zeugma supports suspicions raised by Jones about the lasting value of Seleucid colonization of Syria.[56] All but two of the eight Hellenistic coins (**C1**–**C7**, **C289**) were residual artifacts in later contexts, including coins of Alexander the Great (**C1**), Antiochus III (**C2**, **C3**), and, from Hoard 1, Antiochus IV (**C289**). The exceptions were a coin of Antiochus IX (**C5**) from a possible construction deposit in Trench 7 (context 7029), which provides 114 B.C. as a terminus post quem for construction, and **C2**, a coin of Antiochus III dated to 125–121 B.C. from a possible construction context in Trench 9. This is slightly later than the excavation's earliest datable ceramic material from closed deposits (context 19005), namely ESA that need not be later than the third quarter of the second century B.C.[57] Like the residual coins mentioned above, lamps (**L1**–**L4**), residual ceramics, including BSP (**PT31**–**PT37**, **PT211**–**PT213**, **PT321**–**PT322**) and sherds of Koan and Rhodian amphorae (**AM13**, **AM21**, **AM22**, **AM57**–**AM59**, **AM61**), also indicate activity at Zeugma in earlier Hellenistic times, but without meaningful contexts for evaluating intensity or topographical extent.[58] There is some basis for assigning at least minor importance to Zeugma at this time, namely the recent foundation of the Commagenian dynasty at Samosata, the wedding of Antiochus III and Laodice, daughter of Mithradates II of Pontus, and the execution of the princess Cleopatra Selene I by the Armenian dynast Tigranes.[59] In general, the absence of sealed deposits from Hellenistic Zeugma might be explained by the narrow zone of excavations in 2000 and the destructive force of later Roman house foundations, in many cases

Historical framework	Archaeological phases	Ceramic Group
Seleucid ca. 300 B.C.–64 B.C.	Seleucid construction ("Hellenistic")	A. Possibly late second century B.C.
Commagenian 64 B.C.–A.D. 18	Commagenian construction ("late Hellenistic")	
Early Imperial A.D. 18–161	Late Augustan/Tiberian construction	B. Late Augustan or Tiberian
	Flavian occupation	C. Flavian
Middle Imperial A.D. 161–253	Early to mid-third-century construction (Severus to Philip)	
	Mid-third-century destruction and collapse	D. Mid-third century A.D.
Late Imperial A.D. 253–636	Fifth-century construction	E. Possibly second half of fifth century A.D.
	Sixth- to seventh-century construction and destruction	F. Seventh century A.D.
Early Islamic A.D. 636–	Early Islamic occupation	G. Islamic (eighth to ninth century?)

Table 7. Historical framework, principal archaeological phases, and Ceramic Groups.

founded on bedrock. To a certain extent, the architectural remains help to fill this gap, because Roman-period houses betray signs of Hellenistic predecessors. Multiphase houses discovered in Trenches 2, 9, and 11 preserve parts of pre-Roman walls that were recycled by Roman builders. While archaeological deposits assist dating of the Roman period houses, they do not help to date the earlier buildings. Accordingly, Hellenistic building phases labeled "Seleucid" and "Commagenian" in Tobin's chapter on the houses were identified on the basis of materials, techniques, and relative sequences of walls and floors. In no case is it likely that these Hellenistic remains belong earlier than the second century B.C., since this is the earliest date assigned to traces of Hellenistic houses discovered by previous excavators near the area generally believed to be the center of the ancient city.[60]

Pompey's transfer of Zeugma into Commagenian hands in 64 B.C. does not reverberate in the deposits excavated in 2000 beyond the discovery of a single find in a residual context.[61] A palimpsest on a basalt stele records a formulaic dedication of a ruler-cult temenos by Antiochus I of Commagene (**IN1**).[62] Analysis of the inscription by Charles Crowther, including comparison with similar finds at Adiyaman and Sofraz Köy, concludes that the dedication belongs early in the reign of Antiochus I of Commagene, probably shortly after Pompey's march down the Euphrates in 64 B.C.[63] The temenos apparently featured a stone relief portrait of the king and separate relief portraits of the gods. The gods worshiped there were probably Zeus Oromasdes, Apollos Mithras Helios Hermes, and Artagnes Herakles Ares. The temenos mentioned in the inscription may be the large building in Trench 15, near the stele's findspot. In a territory so vulnerable to the advance of Rome and Parthia, cult centers like this one would have provided a means for political control and consolidation in Commagene.[64] The building is substantial enough in its construction and close enough to the Euphrates River to allow for the suggestion that Crassus may have stopped here before crossing into Mesopotamia on the eve of his disastrous defeat at Carrhae in 53 B.C.[65]

Three closed deposits provided secure grounds for building in the city in the first half of the first century A.D.: an isolated construction deposit in Trench 7 (context 7118), and two construction fills behind a large terrace wall in Trench 15 that are informative for the transition between Commagenian and Roman power at Zeugma (contexts 15009 and 15095). ESA in these fills provides a terminus post quem for construction no earlier than the end of Augustan times.[66] Context 15009 also contained the basalt stele mentioned above. Prior to deposition, the inscribed face of the stele had been erased and recut with a new inscription, and the opposite side had been carved with a *dexiosis* scene of Antiochus I and a deity with attributes of Apollo and Helios.[67] Crowther suggests that the reworking of the stele belongs after Antony's siege of Samosata in 38 B.C. but before the death of Antiochus in 36 B.C.[68] The new inscription makes explicit reference to the *dexiosis* scene as a new addition to the temenos. The portraits of Antiochus and the gods mentioned in the earlier cult inscription were presumably still standing.

The context for deposition in Trench 15 suggests that the stele was removed from the temenos at some point after

the Augustan period. In A.D. 17 Germanicus added Commagene to Syria, which was a consular province governed *propraetore*. This provides a meaningful historical context for the demise of the Commagenian ruler cult at Zeugma.[69] However, the later inscription on the basalt stele shows that other parts of the same document were inscribed on adjacent limestone blocks (in practice with ruler-cult documents at other Commagenian sanctuaries). Inscribed fragments of the limestone blocks from the Zeugma document have been found in two separate contexts at Zeugma. One was found in excavations by Catherine Abadie-Reynal in Chantier 9 in 1998, and the other in 2000 in a Roman wall in the House of the Hoards in Trench 9 (**IN3**).[70] The dispersion of this ruler-cult monument across disparate building contexts at Zeugma suggests removal from the temenos at some point prior to the date for deposition indicated by the findspot for the basalt stele. In his analysis of the inscriptions, Charles Crowther suggests the suppression of Commagenian power following the battle of Actium in 31 B.C. as the context for the removal of the stele from the temenos at Zeugma.

The archaeological evidence at Zeugma corroborates what is already known from the historical record about Commagene's friendship with Rome under the dynasty's founder and troubled times under his successors. Honors to Antiochus I from Rome included the *toga praetexta* in 59 B.C. Envoys of Antiochus I conveyed a helpful warning to Roman Cilicia about a Parthian advance west of the Euphrates in 51 B.C.[71] At some point the Commagenian royal family was granted Roman citizenship. The earliest evidence for this is a grant of the *tria nomina* to Antiochus IV by Claudius in A.D. 47, but an earlier grant of citizenship probably dates back to Caesar or Augustus.[72] Commagenian rule persisted in fits and starts throughout the Julio-Claudian dynasty, following events such as the execution of Antiochus II at Rome in 29 B.C., the appointment of Mithradates III in 20 B.C., and the removal of Antiochus III from the throne and annexation of Commagene under Tiberius.[73] Still, periods of relative stability were introduced by control of the throne sometime after 20 B.C. by Antiochus III, whose euergetism won him honors at Athens and Ephesos, and, in A.D. 47, by Claudius' restoration of Antiochus IV, who was also celebrated for his benefactions to Roman cities.[74] The reign of Antiochus IV in particular demonstrates the power and resources of Commagene, for the king founded new cities named for emperors (Germanicopolis, probably for Caligula, Claudiopolis, and Neronias), instituted games in Claudius' name, and defeated bandits in Cilicia.[75]

But the suggestion of a decline in Commagenian power following Actium witnessed in the temenos is inconsistent with numismatic evidence for the civic era of Zeugma and with the later rise in Roman activity at Zeugma detected in the rescue excavations of 2000.[76] The Roman houses uncovered in the narrow slice through the residential district begin no earlier than Flavian times.[77] Of course, this does not preclude the presence of earlier Roman housing elsewhere in the city.[78] As far as the houses excavated in 2000, these appear to belong to an expansion of the city that corresponds to the likely arrival of the *legio IIII Scythica* in A.D. 66 and the annexation of Commagene a few years later.[79] Indeed, the excavators found closed deposits with datable evidence for house construction in Flavian and Trajanic times. For many contexts this involved new construction on leveled bedrock, but in some cases the new Roman houses had made use of earlier walls, presumably from earlier Roman or Hellenistic houses in the area. Nearby rock-cut graves of Hellenistic date suggest that early house walls belong to the periphery of an area of low-density housing before the installation of a new Roman residential district here in Flavian times.[80] Construction and occupation deposits dated near the end of the first century A.D. were found in Room 7A in Trench 7 (contexts 7007 and 7023). Construction deposits found in two adjacent houses in Trench 2 point to new house construction in Flavian and Trajanic times. The latest datable material from a floor deposit in Room 2I of the House of the Helmets was Flavian (context 2283). In Room 2D in the House of the Peopled Plaster, Flavian-period ceramics were found with a Trajanic coin (**C129**), thereby providing A.D. 98–117 as a terminus post quem for construction.[81]

Between A.D. 114 and 117 Trajan campaigned in Armenia and Mesopotamia.[82] Trajan or detachments of the Roman army may have crossed the Euphrates at Zeugma, but the ancient sources lack specific mention of this.[83] What is clearer is that Trajan used Nisibis for a base camp, and this put Zeugma about 300 km behind the new eastern frontier.[84] Zeugma probably played a key role in the military supply line at this time.[85] The arrival of the *legio IIII Scythica* in ca. A.D. 66 and the ensuing atmosphere of enhanced security and robust economy in the service of Roman imperial ambition provided the context for the expansion of the Roman residential district revealed by the rescue excavations of 2000.[86] A commemorative inscription of probable Trajanic date found in the rescue campaign of 2000 (**IN4**) suggests that the *legio IIII Scythica* was active in the construction of commemorative monuments in or around the city soon after its arrival.[87] Gravestones and stamped tiles aside, this is the first known official document published by the legion, and attesting to its activity, at Zeugma.[88] Also significant for the importance of the city is a public honorific document for a Roman governor dated to about the middle of the second century A.D. (**IN6**).

Widespread evidence for new house construction with at least two periods of refurbishment involving mosaic and painted-plaster decoration demonstrates that this residential district of Zeugma was thriving throughout the second century and for most of the first half of the third century.[89] This increase in the quality of domestic life corresponds to the period of Zeugma's coinage, ca. A.D. 138–249, with issues in the principates of Antoninus Pius, Marcus Aurelius and Lucius Verus, Caracalla, Elagabalus, and Philip I.[90] Thus, the heyday of Zeugma in Roman times was contem-

porary with the period of intensive military presence and aggressive and expansionist Partian Wars of Lucius Verus, Septimius Severus, and Caracalla.[91] Moreover, the finds from the final period of occupation in these houses reveal a close connection between this residential zone of Zeugma and the Roman army, presumably soldiers from the legionary fortress of the *legio IIII Scythica*.[92]

The evidence for dating the Sasanian sack of Zeugma to A.D. 252/253 has been discussed above, and further reflection appears at the end of this chapter. Suffice it to add to the present survey of site chronology that finds key to understanding the sack from Trenches 2, 9, and 18, especially ceramics and coins discussed by Kenrick and Butcher in this publication, derive from destruction contexts of a specific character witnessed at several other parts of the site, including Trenches 10, 11, and 13. In addition, destruction debris atop charred mosaic pavements also came to light in excavations in 2000 by Catherine Abadie-Reynal (Trenches 6, 14, 16, and 17) and by the Gaziantep Museum, which discovered an archive of clay sealings numbering in the tens of thousands (Trench 3) and a near life-size bronze statue of Mars, which had been removed from display and hidden away in a closet with other household decorations in anticipation of the Sasanian attack.[93] Excavations reveal that much of the city was never again reinhabited.[94] The devastation of A.D. 252/253 reverberated far beyond the middle third century, and the aftermath involved realignment of trade networks and dramatic changes in available goods. Indeed, A.D. 253 marks the end of Greek-type coinage in northern Syria.[95] Transport amphorae at Zeugma further illuminate regional transformation after A.D. 253. Prior to the sack, Zeugma drew on a mix of locally produced storage vessels and long-distance imports from the West. In the post-sack community of the seventh century A.D., local production was absent, and the transport vessels indicate that Zeugma relied heavily on central Syria for commodities.[96]

In light of the new corpus of mosaic pavements from Zeugma with a clear terminus ante quem, there may be some merit in taking a fresh look at stylistic dating applied to regional mosaics comparable to those found sealed beneath Zeugma's Sasanian sack layer of A.D. 252/253. For example, according to conventional criteria for dating mosaics on the basis of style, the Nereids on sea monsters pavement (**M23**) from the House of the Fountain in Trench 11 could belong in the fourth century A.D.[97] But this pavement was clearly buried in the sack of A.D. 252/253, and it can belong no later than the middle third century. Within the corpus of Zeugma pavements from Trenches 2, 11, 12, and 13, Katherine Dunbabin assigns a homogeneous group to the Severan period on the evidence of a later stylistic phase represented in a pavement sealed by debris from the Sasanian sack of A.D. 252/253 (**M23**).[98] Dunbabin's Severan group at Zeugma has its best parallels in Levi's post-Severan group at Antioch, dated to A.D. 235–312. The undeniable terminus ante quem for the Zeugma pavements suggests that Levi's post-Severan group at Antioch actually began earlier, with Levi's Severan group at Antioch perhaps even earlier still. Such quantity of comparative material with a clear terminus ante quem for installation makes Zeugma an essential benchmark for dating wall and floor decoration in the Roman East. This new evidence from Zeugma merits reevaluation of mosaics and wall painting at regional sites where dating has only been established on the basis of style. Antioch, for example, does not have a substantial sack layer like Zeugma. In the absence of such a horizon, the Antioch mosaics have been dated across several generations on the basis of differences in style that suggest the hands of different generations.[99] The dated corpus of Zeugma mosaics preserves comparable differences in style from a narrower span of time, and this provides a sound basis for scrutiny of the stylistic dating applied at Antioch, where there now exists significant potential for identification of previously overlooked evidence for contemporary production of mosaics.

The rescue excavations of 2000 produced little evidence for recovery in the aftermath of the sack, and the residential zone of the city described above never again regained the vitality witnessed in the second and early third centuries A.D. In fact, the picture provided by the archaeological evidence is one of only limited resettlement in fits and starts across the sixth through ninth centuries.[100] This may reflect the human and psychological toll of the Sasanian incursion, which may have diverted attention to other Euphrates crossings, or the reestablishment of refugees elsewhere. Indeed, many houses destroyed in the residential district discovered in the rescue campaign had been untouched since the day they collapsed.[101] A few areas of disturbance in the sack layer provided evidence for small-scale salvage after the sack, and therefore perhaps minor occupation at Zeugma from the later third to fifth centuries A.D., but this is witnessed primarily by residual material in later contexts.[102] For the rescue excavations reported here, the dearth of ceramics dated between the sack and the end of the fifth century A.D., as well as the near complete absence of transport amphorae, lamps, and coins from the same period, puts this era of isolation and abandonment into rather sharp focus.[103]

The city's first detectable phase of settlement after the Sasanian sack belongs to the sixth century A.D. Cypriote Red Slip Ware provides the means for dating the collapse of a building in Trench 4 to the sixth century (context 4004). Both Phocaean Red Slip Ware and Cypriote Red Slip Ware indicate the same date for new house construction in Trench 5 (contexts 5048 and 5078), with foundations cut into thick layers of colluvium washed down across the site from the slopes of Belkis Tepe in the centuries of abandonment following the sack of A.D. 252/253.[104] In Trench 7B, a late-Roman courtyard house preserves abundant evidence for occupation in the sixth century, and for devastating burning and collapse, probably in the early seventh century.[105] Evidence for the contemporary destruction of a smaller building came to light in Trench 12, where a

number of sixth-century coins, Phocaean Red Slip Ware, African Red Slip Ware, and lamps beginning in the late sixth century, provide evidence for dating.[106] Among these finds, coins of Justinian and lamps with Christian symbols (e.g., **L155**, **L182**, **L186**) reveal Zeugma's connection to the Byzantine Empire, especially in the decades leading up to the battle of the Yarmuk River in A.D. 636.

The reorganization of the eastern Roman frontier in the wake of Shapur's conquests did not favor Zeugma. The city never regained the importance it knew prior to the sack, and it was eclipsed by the fortunes of regional cities better suited to support Rome's interests on the new eastern frontier, especially Antioch and Edessa.[107] The attention Zeugma did receive is probably owed to the continuing importance of its strategic river crossing, which may have played a role in the eastern campaigns of Anastasius and Justinian.[108] Procopius names Zeugma among cities fortified by Justinian along the Euphrates frontier, but there is no evidence for military architecture at Zeugma consistent with this account.[109] Procopius also refers to the land of Euphratesia, once known as Commagene, as bare, unproductive, and not worth fighting for.[110] It is likely that the river crossing attracted the bishopric mentioned there in fifth- and sixth-century proceedings of councils at Ephesos, Chalcedon, Constantinople, and at Zeugma itself.[111] The buildings in Trenches 5 and 7 thus belong to a period of renewed regional stability and security that would have encouraged settlement at Zeugma in the sixth century.[112] Unrest at the time of the battle of the Yarmuk River could provide a reasonable context for the destruction of the late-Roman courtyard house in Trench 7B, but a specific connection is lacking.

The excavators recovered evidence for activity in the eighth and ninth centuries in Trench 1, at the very western limit of excavations in 2000 and far removed from the Roman residential zone. Islamic-period ceramics, a lamp (**L213**), and a coin dated to A.D. 786–809 (**C234**) were found mixed in with the collapsed debris of a substantial building with walls of rubble and squared limestone blocks that had probably once belonged to earlier buildings nearby.[113] Excavations here were not completed, and levels beneath the Islamic-period building were not investigated. Still, several coins from the generation before the Sasanian sack of A.D. 252/253 were found in Trench 1 as residual finds in later contexts, and they suggest that the Roman residential district discovered in the eastern part of the city may have extended at least as far to the west as Trench 1. The absence of any Islamic activity found in the eastern trenches suggests that a nucleus for settlement at Zeugma, if one existed in the eighth and ninth centuries, may have shifted to the west, around Trench 1.[114] This conclusion is consistent with the results of Algaze's survey at Zeugma, and with dispersed patterns of Byzantine and Islamic settlement in the Euphrates basin around Carchemish identified by Wilkinson.[115] Life at the once-renowned river crossing probably limped along in this fashion until the construction of the Frankish castle at Birecik in the middle 11th century. If the crossing at Zeugma had not already ceased to function by this time, the new crossing only 10 km downstream at Birecik put it out of use for good.[116] Zeugma is last attested in the ancient literary texts at 1048.[117]

HISTORICAL CONCLUSIONS

The City Plan

In the popular imagination, Zeugma has earned a reputation as a thriving frontier city with a major role in overland communication between east and west because of its river crossing.[118] In fact, the finds from the rescue excavations of 2000 show that Zeugma was rather isolated and that its partners in trade were confined to regional towns in adjacent valleys. They also show that the fortunes of Apamea and Zeugma were chronologically distinct, such that there never really were "twin towns" operating in tandem on opposite banks of the Euphrates, but rather only one principal focus of control and defense of the river crossing at any one time.

Building Materials and Techniques

Structural building stone is almost entirely local limestone quarried from the immediate area.[119] In Roman times detachments from the *legio IIII Scythica* appear to have been involved in supplying this stone for building at Zeugma.[120] Remains of public buildings at Zeugma show that limestone was used for foundations, walls, columns, and entablatures.[121] In the rescue campaign of 2000, the excavators found the best evidence for limestone architectural parts with carved ornament in Trenches 2, 7, and 15.[122] Private houses employed limestone for foundations, pavements, socles, columns, and piers, and especially for the lower parts of rubble walls retained by piers. For upper walls, mud-brick was the material of choice. The abundance of terracotta roof tiles from the excavations shows that timber must have been employed with some regularity, especially for roofs, but also for floors and ceilings for intermediate stories. In this case the Euphrates River would have provided the avenue for timber imports to this city on the edge of the desert.

The general absence of marble and granite at Zeugma puts the city in sharp contrast with other cities and sanctuaries of the Roman East, like Palmyra and Baalbek, which received substantial quantities of foreign building stone, especially Egyptian granite, transported overland from the Mediterranean coast.[123] Where marble has been found at Zeugma, it has appeared without meaningful context.[124] The rescue excavations of 2000 identified the following specimens: a step before a doorway to a Hellenistic-period building in Trench 5 (context 5149), a column base reused for a plinth in Trench 7 (context 7284), two small columns that framed a decorative fountain in the House of the

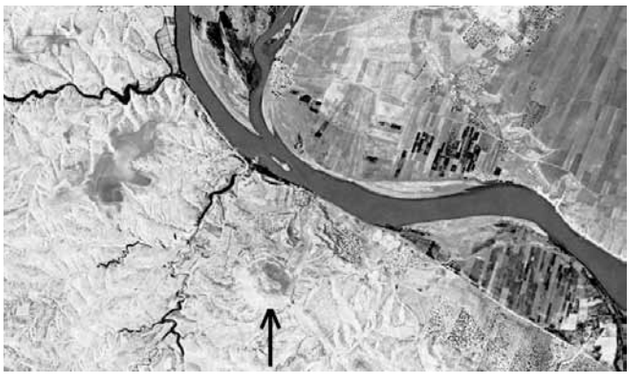

Figure 9. Detail of Figure 3, rotated for north at top. The arrow indicates Belkis Tepe.

Fountain (Trench 11), a foot that may have belonged to an under life-size statue (**SS4**), two statuette fragments from a possible representation of Hygieia (**SS5**, **SS6**), a fragment of an inscribed plaque (**IN5**), and bowl with lug handles (**SV1**), and two spindle whorls (**SW17**, **SW39**).[125] To these add the torso of a life-size philosopher portrait in white marble found in a large drain in Chantier 9.[126] The dearth of imported marble at Zeugma is consistent with the distribution of marble in the Roman Empire. Inland cities without access to local supply did not benefit from the robust seaborne trade, which was drastically less expensive than overland transport.[127]

Zeugma's inland location encouraged inhabitants to turn to local resources and traditions in order to emulate the West. For example, inhumation in painted loculi of rock-cut chamber tombs sufficed over burial in ornate marble sarcophagi.[128] In addition, inhabitants made up for the lack of imported building stone with the conspicuous display of imitation marble on the wall paintings that decorated their homes: Rooms in Trenches 2 and 13 provide vivid examples.[129] There is no need to look to the West for the inspiration for this mode of décor at Roman Zeugma, for it was already used for late-Hellenistic domestic decoration in the Euphrates Valley at sites like Jebel Khalid and Samosata.[130]

As a building material, basalt is not known at Zeugma except for odd scraps in rubble masonry, but it was used for Doric capitals at a regional Roman fort.[131] Fired brick was also uncommon to building at Zeugma, especially prior to the sack of A.D. 252/253. Bricks were probably manufactured locally, but imports cannot be ruled out.[132] Examples include moderate use in rubble walls of houses in Trenches 2, 11, and 13.[133] Two rather substantial examples probably belong to the sixth though ninth centuries A.D.: the wall of a house in Chantier 10 and the standing remains of a multistory building in brick and mortar, with part of a plain white mosaic pavement preserved in the upper floor.[134] Fired brick is also apparent in the ruin of a large public building near the base of the north side of Belkis Tepe, where the ruins of piers and collapsed vaulting also betray the only significant use of Roman concrete at Zeugma from the Imperial era (Plate 1).[135]

The Public Buildings

Most investigators have used the location of the necropoleis around the site to determine the city's topographical extent and make estimates about population (Plate 1).[136] For Zeugma and Apamea combined, Kennedy estimated a size of 190 ha and a population of about 50,000–75,000.[137] For Zeugma alone, Kennedy suggested a town about 140 ha in size, in the shape of a long and narrow trapezoid about 2 km by 700 m, spread out between the river and the base of Belkis Tepe, with the acropolis most likely linked to the city proper (Plates 1 and 2, fig. 9).[138] A city plan along the riverbank would have had advantages for water supply, shade, and cooler temperatures. Within this broad topographical picture, many details remain elusive, including the location and appearance of the primary river crossing, the fortifications, and the city's public buildings.[139]

Decisions about where to excavate during the rescue excavations of 2000 imposed limits on possibilities for extrapolation about the town plan. Trenches were positioned to allow for the greatest amount of time for recovery of archaeological contexts destined for flooding by the Birecik reservoir in 2000. The meandering path of trenches along the anticipated shoreline at the site's 380-m contour line served that purpose well, but it did little to advance understanding of the city plan. The excavators found no major streets, and the alleys discovered in Trenches 9 and 11 provide only a very general indication that houses in this part of the city were oriented to suit the sloping topography and customized rock-cut terracing, rather than an orthogonal system of city blocks.[140] Moreover, the trenches are too far apart to allow for meaningful connections between parts of alleys or the orientations of courtyards and rooms. The best evidence for Zeugma's street system came from Trench 14, supervised by Catherine Abadie-Reynal, where a broad stairway with limestone steps climbed the steep slope of a hill in a west by northwest direction, roughly parallel to the Euphrates River.[141] If this stairway was part of Zeugma's street network, as seems likely, then it appears that streets aligned with the river made use of stairways to traverse the rise and fall of the landscape in and out of numerous ravines. North-south avenues on the sloping topography between the Euphrates River and Belkis Tepe may have also used a combination of ramps and stairways. Thus, for those involved in laying out the town, any desire to import a strict western-style orthogonal plan would have been challenged by local conditions: 1) topography with steep gradients, 2) exposure to light and air from the river valley, 3) soft and friable bedrock that lent itself to modification for terraces and subterranean rooms,[142] and 4) malleable local building materials, like limestone and mud-brick, which lent themselves to on-the-spot improvisation rather than symmetry and order.

No convincing evidence for a fortification wall around

the city of Zeugma has been discovered.[143] On the basis of a few short sections of solid ashlar construction of apparent Hellenistic technique, Wagner reconstructed the trace of a Hellenistic city wall from the summit of Belkis Tepe down to and along the banks of the Euphrates River. But the lengthy gaps between these sections of wall leave the question of fortifications on the west bank open to debate.[144] Indeed, Zeugma preserves nothing of the impressive standing remains of fortifications at other Euphrates fortresses, like Samosata, Zenobia, or Dura-Europos.[145] If Zeugma had a fortification wall at all, its remains are probably buried with the rest of the city beneath deep colluvium. For the visible remains of the acropolis walls on Belkis Tepe, the solid ashlar construction suggests a somewhat later date than the polygonal masonry in the city wall of Apamea.[146]

Kennedy and others have suggested a theater below the slope of Belkis Tepe (Plate 1) on the basis of a few fragments of limestone architecture and the topography, which suggest a buried seating area, orchestra, and stage building.[147] Part of a theater-like building was excavated in 2004 on the spot suspected for such a building by earlier commentators, above the principal zone of inhabitation and closer to the slopes of Belkis Tepe.[148] Until meaningful archaeological work is carried out at this place, the identification must be held in reserve.[149] For other public buildings, an agora, amphitheater, bouleuterion, and gymnasium have all been imagined for Zeugma across the landscape of the unexcavated city.[150] None of these has been proven by excavation, and only a bouleuterion is suggested by an inscription that mentions a boule of the people.[151] It is conceivable that a gymnasium was connected to one of the several baths or latrines discovered by recent excavations. Bath buildings with Roman-style hypocaust systems were found during bulldozing for the wall of the Birecik Dam and in a trench managed by ZIG in 2000.[152] Latrines at Zeugma include the small four-seater discovered in Trench 10 and a larger example on the north side of the At Meydani plateau near the Bahçe Dere, discovered in excavations by Hartmann and Speidel.[153] Evidence for other buildings for entertainment is scarce, although the mere presence of the *legio IIII Scythica* near the city makes it likely that they existed in Roman times. Further support comes from inscriptions that mention a *pancration* and other athletic contests at Zeugma, and from graffiti of gladiators scrawled on a wall in the House of the Hoards in Trench 9. Still, none of these necessarily implies the existence of an arena for spectacle.[154]

Shade, water, and relatively flat topography on Zeugma's riverfront (Area A) may have encouraged larger properties.[155] The topography is steeper along the narrow zone at the 380 m contour excavated in 2000 (Area B). The houses here are compact, with small rooms arranged around open-air courtyards and designs generally dictated by gradient and orientation of rock-cut terraces.[156] If the city extended into the shadow of Belkis Tepe (Area C), the broad plateau would have allowed for housing like that on the floodplain below.[157] Urban topographies of riverfront cities like Cincinnati, Prague, or Rome provide meaningful comparison to this loose tripartite arrangement: large houses in regular, spacious city blocks on the floodplain; relaxed orientation, narrow winding streets, and smaller houses on the sloping land up to the bluffs; a return to organized city blocks and consistent orientations on the plateau behind the bluffs.

The Houses

Parts of 13 houses were found, with names applied per characteristic features of each. All were destroyed in the Sasanian attack of A.D. 252/253 except for the house in Trench 7, which was not built until over two centuries later. Trench 2 came down at the convergence of four houses along a rock-cut terrace: the House of the Helmets and the House of the Bull occupied a lower terrace to the northeast, and the House of the Peopled Plaster and the House of the Pelta Mosaic occupied an upper terrace to the southwest. In Trench 5 the excavators revealed parts of two houses separated by an alley: the Northwestern House and the Southwestern House. Part of a late-Roman courtyard house was found in Trench 7.[158] In Trench 9, parts of two more houses, the House of the Hoards and the House of the Tesserae, were also separated by an alley, which in this case ran along the top of a rock-cut terrace. In Trench 11 the excavators discovered the courtyard and adjacent rooms in the House of the Fountain, and in Trench 13 they uncovered part of the House of the Tunnel and three rooms on an upper terrace from an adjacent house. Trench 18 landed upon a suite of rooms on the east side of a colonnaded court.

The sloping topography and soft bedrock seem to have been principal determinants for the organization of space at Zeugma. They may have also limited the overall size of even the most impressive houses, which did not achieve the scale of the largest houses at Apamea-on-the-Orontes, Ephesos, Palmyra, and Pompeii.[159] In the case of houses in Trenches 2, 9, and 13, rock-cut terraces marked property boundaries and determined the orientation of alleys between houses. Rock-cut cisterns for storage of water channeled from rooftops sustained households during dry spells. Also vital were entire rooms carved into the bedrock, like Room 2L in the House of the Bull or the room next to Room 9A in the House of the Tesserae. Inhabitants probably coveted these spaces for food storage in cooler temperatures and relief from summer heat.[160] In other rooms, rock-cut pits supported storage jars set into floors.[161]

The standard plan for the Zeugma house has a hypaethral courtyard with rock-cut facilities for water storage below. The courtyard is usually surrounded on two or three sides by ancillary rooms, one of which is sometimes an exedra separated from the courtyard by a screen of columns set between door jambs.[162] Parallels for this arrangement are not difficult to find at Antioch, Apamea-on-the-Orontes, and Ephesos.[163] At Zeugma, column shafts were composed of drums that preserve square sockets on top and bottom for alignment and joining. In general, column shafts are unfluted and crowned by capitals of the Tuscan order, or else

carved with cannellated flutes and crowned by Corinthian capitals.[164] Local variations of the Corinthian style appear to have been particularly popular. In the House of the Helmets, a Tuscan capital with necking and the upper part of the column shaft were carved from the same block of stone (Plate 26A).[165] This domestic design appears in the House of the Helmets, the House of the Fountain, and the House of the Dionysus and Ariadne Mosaic, and it is suggested by partial house plans discovered at the House of the Bull, the House of the Plastered Floor, and in excavations by Catherine Abadie-Reynal (Trench 6) and the Gaziantep Museum (Trench 8).[166] It is also perceptible in parts of several houses known from earlier excavations at Zeugma in the immediate vicinity of the houses discovered in the rescue campaign of 2000.[167] These include the House of the Dionysus and Ariadne Mosaic (also known as Ergeç Villa) and parts of houses in trenches that Kennedy and Freeman identified as Sites A, B, D, E1, E2, and F (Plates 1 and 2).[168] In addition to plan, these houses have other features in common with the houses discovered in 2000. Soft bedrock was shaped in the same way for terraces, foundations, floors, and sometimes even entire subterranean rooms or cisterns. Walls were constructed with foundations and socles of limestone, often a mix of worked stone and rubble, and upper walls of mud-brick. The lower parts of many walls, sometimes preserved up to 2 m high, feature a style of construction that combined ashlar blocks stacked in piers and intervening sections of rubblework, with fired brick sometimes mixed in (Plates 14–15).[169] Solid ashlar construction is less frequent but appears in the House of the Helmets and the building in Trench 4 (Plates 30A, 51), both destroyed in the Sasanian sack of A.D. 252/253. Parts of these houses rose to at least two stories, and pipes were installed within walls to carry wastewater down from upper floors. Pitched roofs of timber fastened with iron nails were covered over with terracotta tiles.[170] Floors were often paved with mosaics, and walls decorated with painted plaster. Exterior house walls also had windows with glass panes, probably set in lead.[171] A great abundance of smashed window glass was recovered from Trench 2, sealed in the debris from the Sasanian sack of A.D. 252/253.[172] From the Kennedy-Freeman excavations, the house at Site D is noteworthy for its correspondence to features discovered in the rescue campaign of 2000, such as superimposed layers of painted-plaster decoration and mosaic pavements, distinct courses of collapsed mud-brick walling, an iron window grille, and clear evidence for destruction and collapse of the timber and tile roof by fire directly on top of a mosaic pavement.[173]

The presack houses of Zeugma are a curious hybrid. In their design, size, exterior appearance, and building materials, they are rooted in Mesopotamian traditions of domestic architecture. In general, they conform to evidence for Roman-period houses from rural Syria, with rooms grouped around an open-air courtyard, lower-story rooms serving utilitarian needs, and upper-story rooms reserved for living space.[174] The Zeugma houses also share characteristic features of houses from the Parthian period at Dura-Europos (ca. 113 B.C.–A.D. 165), such as rooms around an open-air courtyard, foundations and wall corners of stone, and upper walls of mud-brick.[175] Indeed, the inhabitants of Dura-Europos drew on a Mesopotamian and Parthian repertoire for the plan and decoration of their houses, which had flat roofs and did not feature colonnaded courts or elaborate mosaics.[176]

But the houses of Zeugma were also of a Mediterranean style that drew on the culture of the Graeco-Roman world for their spatial organization and decoration. Throughout their interiors they were adorned in vivid decoration rooted in the elite culture of the West.[177] The majority of mosaic and painted-plaster decoration belongs to the generation or two spanning the late second and early third centuries A.D.[178] There are further indications that at least some of these decorations were not made by westerners, but by local artists either familiar with western modes of décor themselves or simply meeting aspirations of their patrons to emulate elite Graeco-Roman culture. For example, a mosaic with a scene from a play by Menander bears the signature of Zosimos, perhaps the same artist whose name appears as Zosimos of Samosata on a mosaic from Zeugma depicting Aphrodite.[179] This interaction between East and West at Zeugma recalls the signature of Orthonobazus on Hellenic-style decorated-plaster cornices at Dura-Europos.[180] For further evidence of this one need look no further than megalographic depictions of Achilles, Deidameia, Pasiphae, Penelope, and Perseus on the mosaic pavements and wall paintings of Zeugma.[181] Also imbued with western sentiment and style is the statuary displayed by Zeugma's residents, including the bronze Mars from the so-called Villa of Poseidon and the life-size philosopher portrait in white marble found in a drain in Chantier 9, apparently put there before the sack of A.D. 252/253.[182] Finally, the waiting-servant motif painted on the walls of a house in Trench 13 shows that artists and patrons at Zeugma were drawing on motifs for house decoration known across the empire.[183] Whatever the origins of the artists, Zeugma's local elite consistently embraced modes of domestic display that conveyed the culture of the Graeco-Roman world.

Water Supply and Drainage

Expert planning and maintenance of water supply and drainage would have been vital for a city with a geographical and topographical situation like Zeugma's, yet little is known about how the city was supplied with water. Water from the Euphrates River and the Bahçe Dere, a perennial stream, was perhaps supplemented by an arterial water supply, especially given the needs of the *legio IIII Scythica*.[184] Water in such a system would have supplied household fountains, like those in the House of the Fountain (Plate 88C).[185] The latrines mentioned above would have been flushed by water on the same network.

In addition to the sanctuary in Trench 15, several houses found in the rescue campaign of 2000 were furnished with

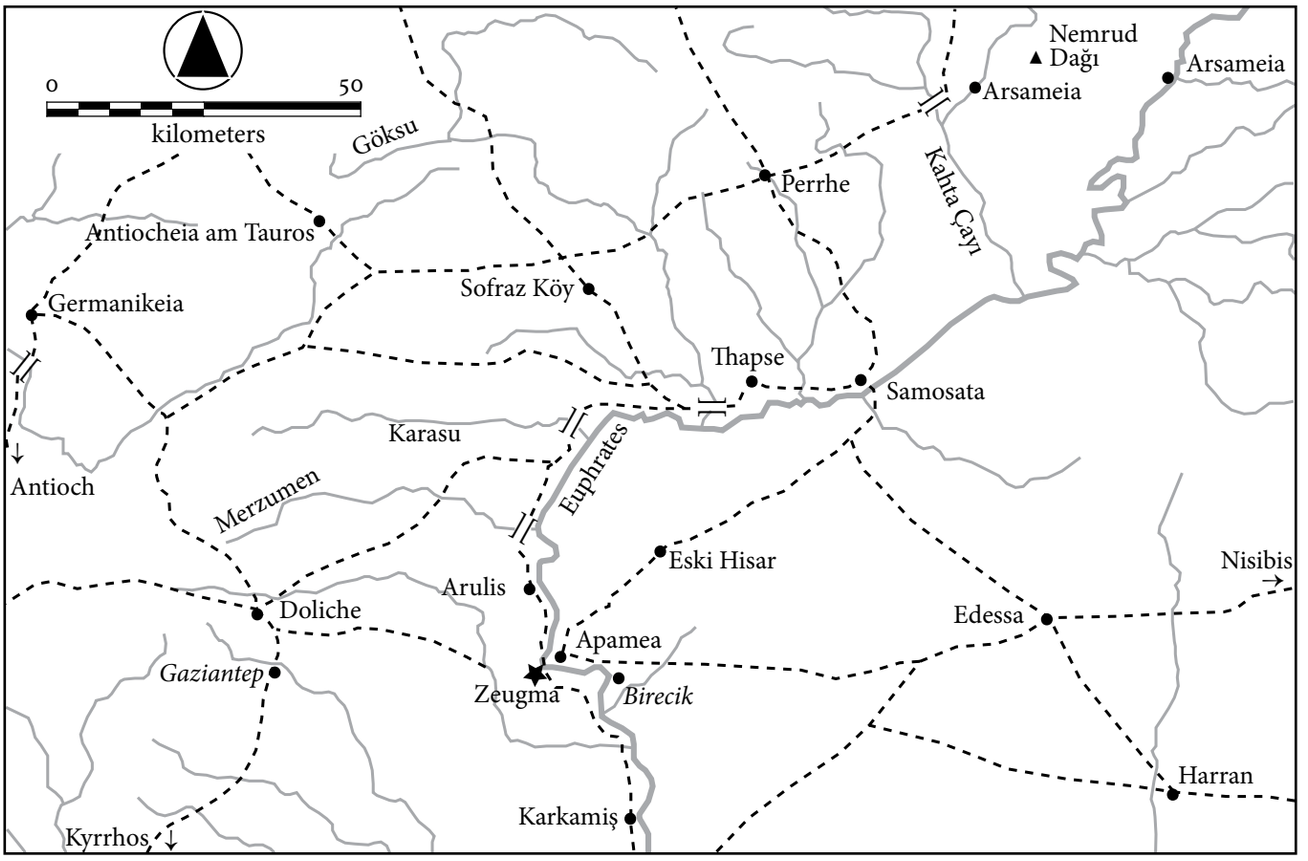

Figure 10. Roman roads and bridges in the vicinity of Zeugma, after Wagner 2000, Abb. 14; French 1983b, fig. 7.1.

rock-cut cisterns: the House of the Helmets, the House of the Bull, and the House of the Fountain.[186] Below the courtyard in the House of the Helmets a sump with a perforated screen trapped silt as water entered the cistern.[187] These cisterns were fed via conduits that drained rainwater from rooftops. Further examples are preserved on the acropolis of Belkis Tepe near the temple platform.[188] Provisions for water would have been augmented in Roman times, perhaps in projects that involved the Roman army, with cisterns and conduits built of Roman waterproof mortar and elaborate networks of terracotta pipes linked by perforated blocks of stone at principal junctions. Most impressive is a large barrel-vaulted cistern lined with waterproof plaster on the slope below Belkis Tepe.[189]

The evidence for drainage is clearer. Two large sewer drains of uncertain date have been discovered beneath the city, both oriented roughly north to south, sloped down to the Euphrates River.[190] Both have walls of solid ashlar construction spaced about 1.50 m apart and a water channel carved deep into bedrock along one side of the floor, thereby leaving a bedrock ledge for passage along the top edge of the channel. The large north-south drains were fed by narrower conduits oriented east to west. The subterranean passage is up to 3.5 m tall, and access shafts every 12 m apart were connected to manholes at street level. The access shafts are up to 4 m deep, and the manholes measure about 46 by 40 cm. It is likely that this network of drains was installed during the expansion of the city in Roman times, perhaps upon the arrival of the *legio IIII Scythica*, which could have provided labor and expertise for construction. Major hydraulic engineering projects at Palmyra and Emesa also belong to the early Roman imperial period.[191] In addition to providing drainage for effluent from expanded residential districts, the underground storm sewer would have also slowed erosion on the slopes of Belkis Tepe by channeling storm-water runoff underground.

Flowing into collective drains like this one were stone-lined or terracotta-pipe drains found along the central axis of alleys between houses, as in Trenches 2, 5, 9, and 11. Such drains were often covered with paving stones and connected to terracotta pipes emanating from houses. The alley drain at the junction of three separate houses in Trench 2 appears to have been utilized by all three households. Responsibility for maintenance was perhaps shared.

The Bridge

The river crossing at Zeugma deserves special comment in light of its historical significance.[192] The location and condition of the crossing had profound influence on military and diplomatic strategy, as well as the outcome of conflict.

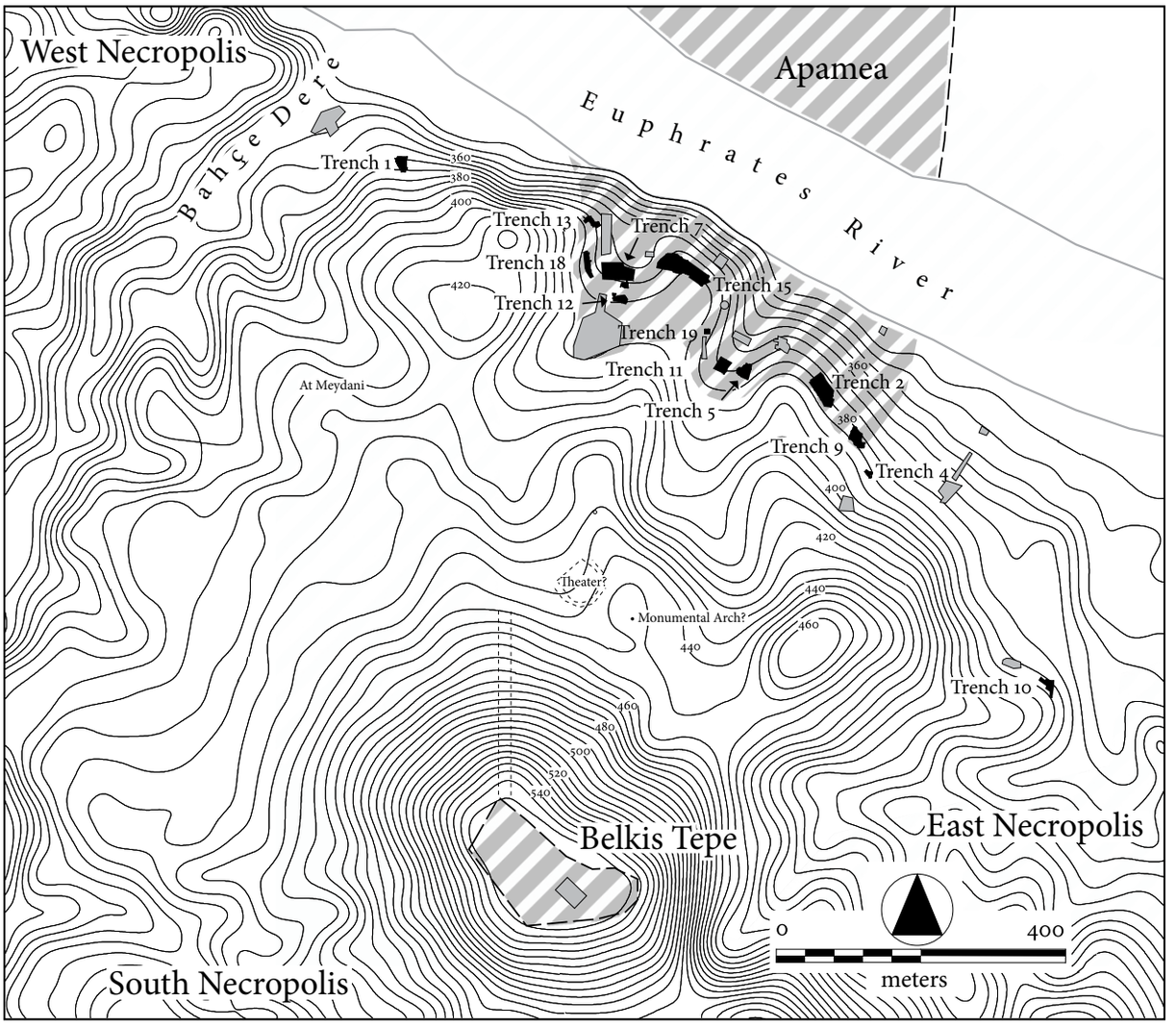

Figure 11. Zeugma: The Hellenistic city under Seleucid and Commagenian control. The principal addition to the city in Commagenian times was the sanctuary to the Commagenian ruler cult found in Trench 15.

River crossings carried a heavy price. When Sophene and Cappadocia vied for control of the crossing at Tomisa on the Euphrates in the early first century B.C., Sophene paid 100 talents for it, only to see Pompey's intervention of 66 B.C. return control to Cappadocia.[193] According to Millar, "What we call the 'Eastern frontier' of the Roman Empire was a thing of shadows, which reflected the diplomatic convenience of a given moment, and dictated the positioning of some soldiers and customs officials, but hardly affected the attitudes or the movements of the people on either side."[194] Thus the significance of the river crossing for society and culture at Zeugma also involves the irony of a bridge as a means to transgress a symbolic boundary between East and West.

From at least as early as the city founder Seleucus I Nicator, some form of crossing probably linked the banks at the bend in the Euphrates River at Belkis Tepe.[195] The search for the specific physical appearance of the bridge at Zeugma has now been forever complicated by the construction of the Birecik Dam and reservoir.[196] Passing through Birecik in 1738, Richard Pococke recorded news of piers on the river banks at a place on the Euphrates called Zima 12 miles to the north: "I was informed, that about twelve miles above Beer there was a place called Zima; and asking if there were any signs of a bridge there, I was assured, that, when the water is low, they see on each side of the river, the ruins of a pier, which may possibly be the remains of this bridge."[197] These were probably the very same piers assigned by Sachau, Cumont, and Wagner to a masonry bridge.[198] But a bridge with masonry foundations would have required intermediate piers, as well as piers higher up the banks to give the crossing sufficient height over the river. Pococke's description suits a pontoon, with piers for securing the line at the level of the water on each side of the river. Kennedy favored a pontoon anchored between masonry piers on opposite banks, and this is consistent with the character of the

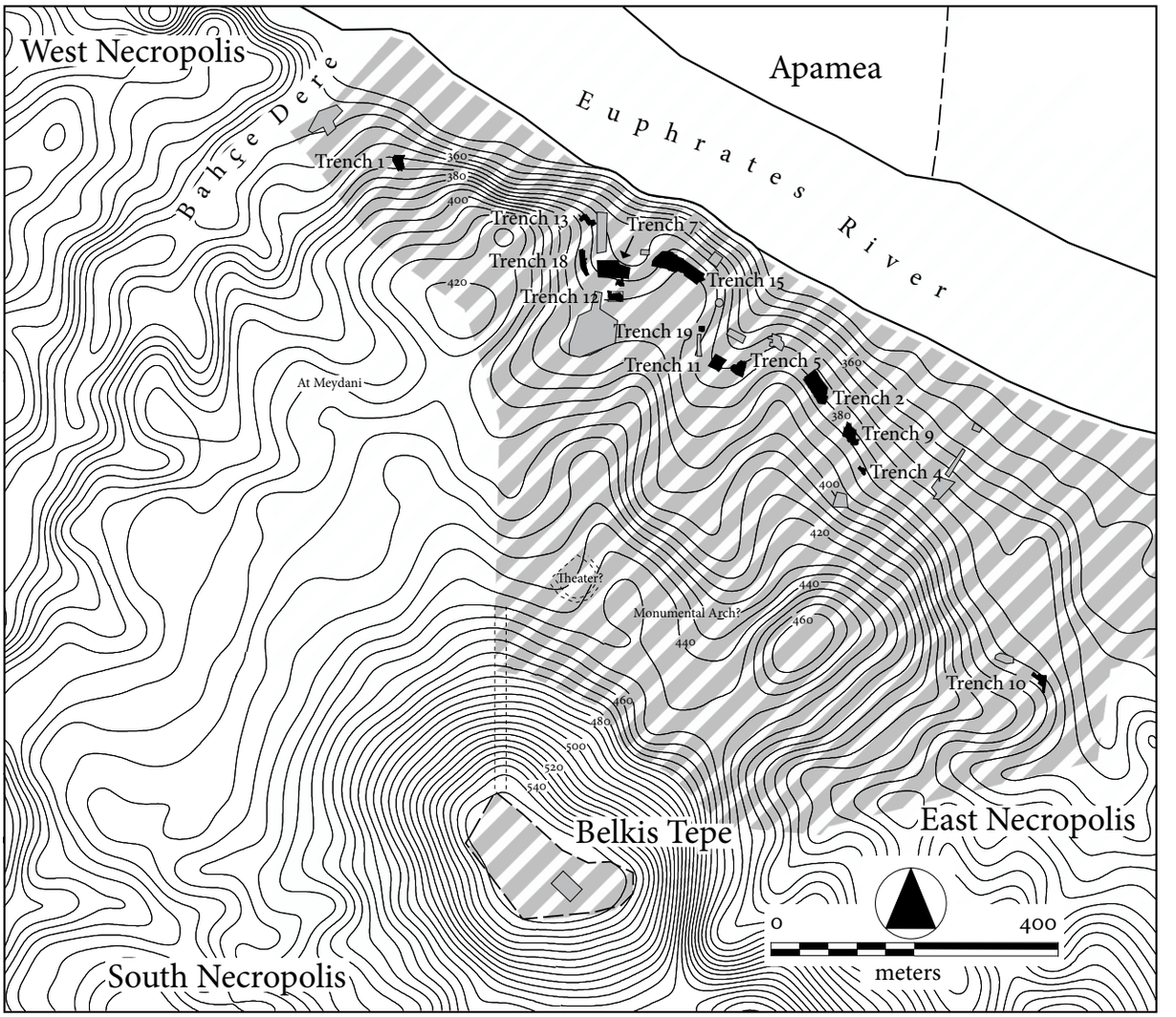

Figure 12. Zeugma: The Roman city from the arrival of the legio IIII Scythica *to the early third century* A.D.

bridge as it is described in most primary sources.[199] Abadie-Reynal has also suggested a pontoon further upstream, just below the Bahçe Dere, assigning a masonry construction on the Euphrates in Chantier 26, perhaps the same feature observed by earlier investigators, to a terrace wall 2.30 m thick and preserved at least 13.70 m long.[200]

Among the literary testimonia for the Euphrates, some sources preserve only generic references to a bridge or river crossing, while others preserve specific references to a pontoon bridge. None preserve direct evidence for a bridge of masonry or wood. References to a pontoon bridge are the most descriptive. In a digression upon mythological painting at Delphi, Pausanias mentions a cable adorned with vine and ivy that Dionysus used to cross the Euphrates.[201] Arrian mentions two bridges, presumably pontoons, for Alexander's crossing at Thapsacus.[202] Pliny the Elder described the chain (presumably part of a pontoon) that Alexander the Great used to cross the Euphrates, still visible at Zeugma in his own day, and he calls attention to the higher quality of the original chain by mentioning rust on links added as replacements.[203] The existence of replacement links, presumably to extend the life of the pontoon, allows for the possibility that Pliny's description refers to active use of the chain in the first century A.D. There are two references to a bridge in Plutarch's account of Crassus' crossing in 53 B.C.—one to a raft or pontoon shattered by a storm and another to a bridge that Crassus, while addressing the troops on the topic of their return from the East, threatened to destroy.[204] The latter reference does not describe the bridge, but the former does, and for this Kennedy has suggested a bridge laid across boats.[205]

Among the generic references to a river crossing at Zeugma, the eyewitness accounts of Isidorus of Charax and Ammianus Marcellinus have the greatest authority.[206] The travel itinerary of Isidorus mentions Zeugma and Apamea, but not a bridge per se, and this suggests nothing

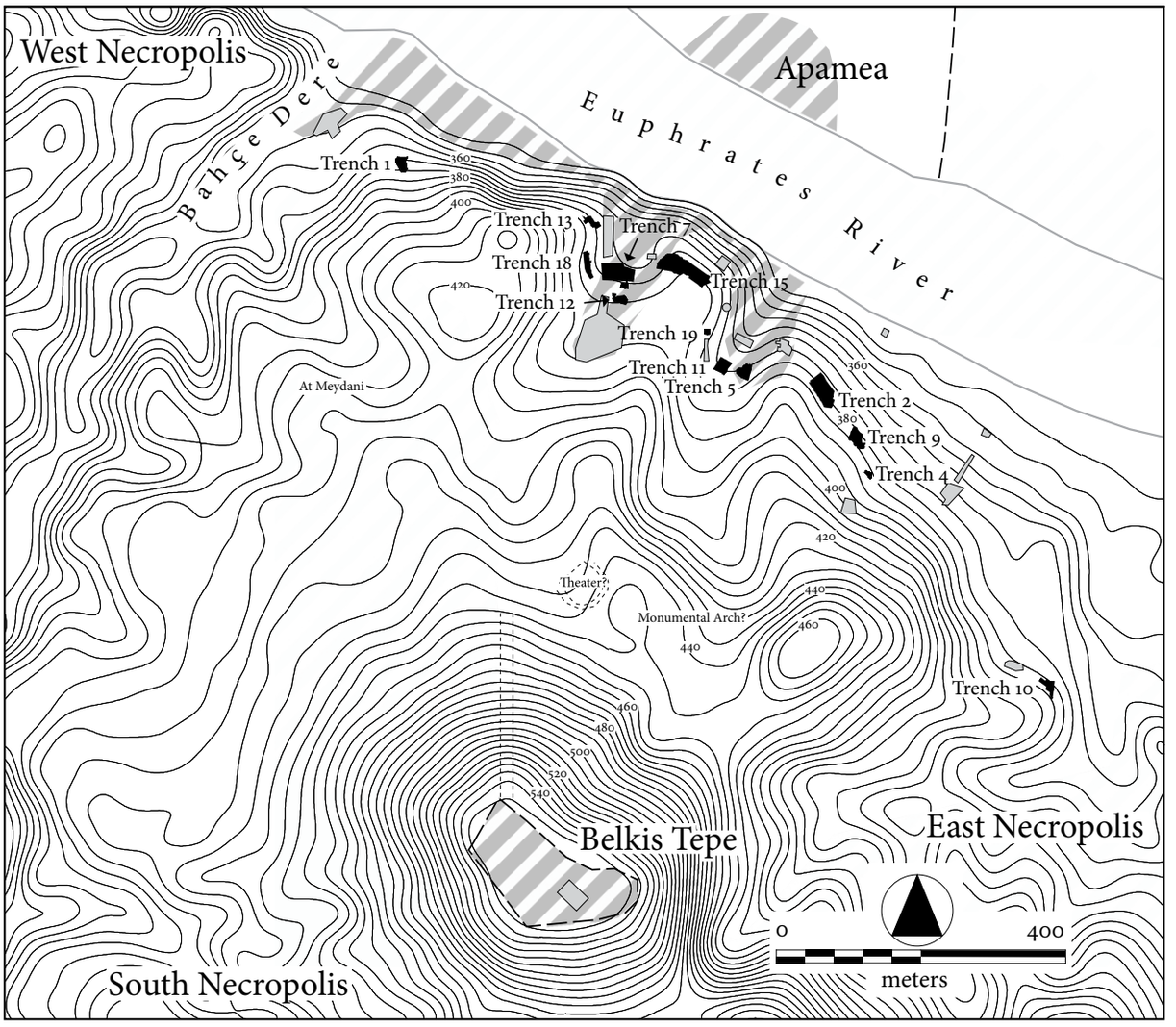

Figure 13. Zeugma: The late-Roman town from the fifth to seventh century A.D.

more than a pontoon in the early first century A.D. This is consistent with descriptions in Plutarch and Tacitus, and with Pliny's description of the chain for Alexander's pontoon. Ammianus reports his own involvement in a plan to sever river crossings at Zeugma and Capersana in A.D. 359 to inhibit the advance of Sasanian forces. This rules out a permanent masonry bridge, but allows for the possibility of a pontoon or a wooden bridge laid across masonry piers.[207] Indeed, the latter scenario brings to mind Trajan's Danube bridge of timber laid across masonry piers, later dismantled by Hadrian in order to halt Dacian incursions into Roman territory.[208] But the idea that a crossing like Trajan's Danube bridge was maintained at Zeugma on the Euphrates is contrary to the archaeological evidence for a period of protracted abandonment in the city following the sack of A.D. 252/253. Moreover, if such a bridge had ever spanned the Euphrates at Zeugma, it would have made most practical sense for enormous military crossings of Trajan, Avidius Cassius, and Septimius Severus, but for these events the sources are silent on the character of the crossing.[209]

There are remains of masonry bridges on western tributaries of the Euphrates between Zeugma and Melitene—the Cendere Su, the Göksu, the Karasu (at Süpürgüç and near Hisar), and the Merzumen (at Rumkale and Yarimca) (fig. 10).[210] Only the bridge on the Cendere Su is securely dated, on the basis of its dynastic inscriptions to Septimius Severus.[211] Construction has been attributed to the *legio XVI Flavia firma* from Samosata.[212] This circumstance, and two tile stamps of the *legio IIII Scythica* found at the Karasu bridge, raise the possibility that the *legio IIII Scythica* could have been a convenient force of labor for a permanent bridge across the Euphrates at Zeugma.[213] However, the western tributaries of the Euphrates were fundamentally different from the Euphrates itself: They were narrower and thus easier to span, and they were behind the frontier instead of on the very boundary so often threatened by the enemy.

For the Euphrates crossing at Zeugma, we should be

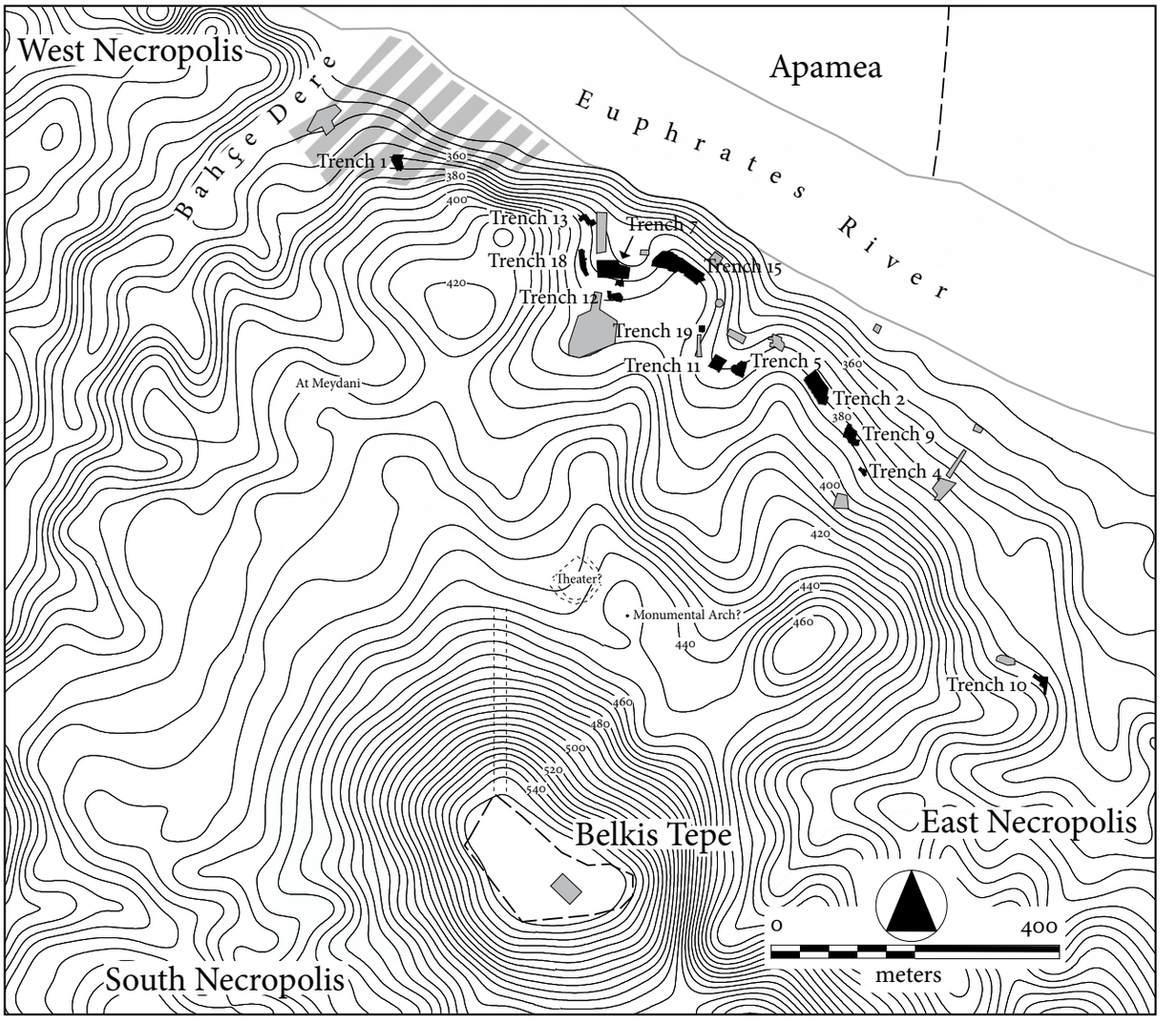

Figure 14. Zeugma: The Abbasid town.

wary of granting the sources more than they allow. The absence of systematic reference to a specific type of bridge in the literary testimonia suggests that the river crossing at Zeugma was known primarily for its symbolic value as a link between East and West, and not for the practical means by which one made it from one bank to the other.[214] The Euphrates crossing at Zeugma was probably never anything more than a pontoon bridge or bridge of boats like those described by Pliny, Tacitus, Plutarch, and Ammianus Marcellinus. Sources for Tigris and Euphrates military crossings of Vitellius, Corbulo, Pacorus, Trajan, Avidius Cassius, and Julian suggest that these rivers were always crossed with pontoons, most probably manufactured on the spot.[215] Apart from these important practical considerations, a pontoon bridge at Zeugma in Roman times would have framed Rome's struggle with Parthians and Sasanians against a rich Graeco-Persian history of famed pontoon crossings from the Hellespont to the Araxes and the Euphrates.[216]

The Evolution of the City Plan

The rescue excavations of 2000 confirm the existence of the Roman-period residential suburb suggested by earlier survey and excavation. Wagner's survey concluded that a Hellenistic settlement at a bridgehead to the southeast of the Bahçe Dere grew in Roman times, spreading out along the banks of the Euphrates and the Bahçe Dere, with the headquarters of the *legio IIII Scythica* located along the Bahçe Dere.[217] The survey by Algaze and excavations by Kennedy and Abadie-Reynal confirm this picture of the city's Roman expansion around a small Hellenistic core.[218] They also support Wagner's conclusion that settlement in Hellenistic times was focused on the area along the Euphrates to the southeast of the Bahçe Dere, a likely place for the river crossing.[219] Residual material aside, closed deposits do not suggest Hellenistic activity at Zeugma prior to the second century B.C., that is, probably not before the establishment of the royal capital of the Commagenian dynasty at Samo-

sata.[220] Any settlement at Seleucia in the third century B.C. was probably attracted to the acropolis and the river crossing. Increased activity in Commagenian times involved the foundation of the ruler-cult sanctuary discovered in Trench 15 (fig. 11). Beyond these limits, exposed bedrock along the Bahçe Dere and the Euphrates appears to have been used for necropoleis. After the arrival of the *legio IIII Scythica* in the 60s A.D., Zeugma began to blossom into a Roman frontier city around this Hellenistic nucleus, with necropoleis migrating beyond the increasing limits of the city. Apamea lost importance, and control of the river crossing shifted to the west bank of the Euphrates. Urban and residential growth at Zeugma was probably steady until the early third century A.D., with increased intensity corresponding to successful eastern campaigns of Trajan, Avidius Cassius, and Septimius Severus, and to increased, albeit tenuous, control of territory in Osrhoene and Mesopotamia. At its greatest extent, the Roman city may have included land as far southeast as the present location of the wall of the Birecik Dam, where parts of a Roman-style hypocaust bath with mosaic pavements were found in work completed prior to the rescue excavations of 2000 (fig. 12). Some sort of fortification is likely but hardly proven by archaeological exploration. The departure of the *legio IIII Scythica* as a result of the reorganization of the eastern frontier by Septimius Severus had considerable consequences for the Roman city. Growth probably ceased at some point in the first half of the third century. Abandoned properties are attributable to each new Sasanian victory on Zeugma's doorstep in the 240s A.D., especially at Rhesaena in A.D. 243. The rescue excavations of 2000 suggest widespread destruction at the hands of the Sasanian army. There is little indication that any part of the city was spared from fire, and there was no immediate move to rebuild the city.[221] Apart from evidence for sporadic scavenging, most of the untouched ruins of Zeugma were slowly buried under at least two centuries of colluviation from the slopes of Belkis Tepe. Resettlement did not take hold to any degree perceptible in the archaeological record until the late fifth century A.D., and even then many parts of the buried city remained undisturbed. Isolated houses may have been sited with the river crossing and local churches in mind (fig. 13). By Abbasid times the acropolis was no longer in use, except perhaps for its cisterns. What settlement there was appears to have been concentrated in the northwestern part of the city, around Trench 1 and Chantier 10 (fig. 14).[222] Thus the Abbasid settlement was situated near the original Hellenistic town and the later core of the developed Roman city. The attraction of an established river crossing is a reasonable explanation for this pattern of settlement from Hellenistic times to the eighth and ninth centuries A.D. Across centuries of expansion and contraction, the topography of the city seems to have forever maintained the river crossing at its heart.

Seleucia/Zeugma and Apamea

The archaeological evidence for a primarily Hellenistic city at Apamea and a primarily Roman city at Zeugma suggests a demographic shift from the east bank to the west bank at this Euphrates crossing. A likely context for Zeugma's eclipse of Apamea as the residential center with control of the bridgehead is the interval between the annexation of Commagene by Germanicus in A.D. 17 and the arrival of the *legio IIII Scythica* about A.D. 66. The latter date corresponds with the archaeological date for the foundation of the Roman residential district illuminated in the rescue excavations of 2000.[223] These houses grew in the second century A.D., and much of the surviving floor and wall decoration belongs to the second and early third century, coinciding with the successful Parthian campaigns of Trajan, Lucius Verus, and Septimius Severus.[224] Evidence for parallel developments in the first through third centuries A.D. is lacking at Apamea, where excavators have observed a dearth of Roman material relative to Hellenistic and Byzantine finds.[225] Kennedy's suggestion that the aftermath of the Sasanian sack of Zeugma in A.D. 252/253 involved the area's return to the traditional agricultural base on the Hobab Plain on the east bank can no longer be tested archaeologically at Apamea, but it is consistent with the evidence for the few late Roman and Byzantine properties found there prior to 2000, and for the partial resettlement at Zeugma no earlier than the late fifth century A.D.[226] It is also consistent with the preference for agriculture over trade witnessed in sources for the economy of Syria in the fourth century.[227]

The life cycle of Apamea appears to mirror the fortunes of the Seleucid and Commagenian kingdoms, whereas the life cycle of Seleucia/Zeugma appears to mirror the fortunes of Rome. The earliest known fortifications at the river crossing are the Seleucid walls of Apamea, which appear to have been maintained in Commagenian times.[228] In the third and early second century B.C., Seleucia-on-the-Tigris was a palatial residence of Seleucus I Nicator. Apamea thus looked out over the Euphrates across the western frontier of the Seleucid kingdom. Hellenistic settlement occupied the fertile plain, especially within the robust fortifications.[229] Across the river, neither archaeology nor historical sources suggest that settlement at Seleucia prior to the foundation of new Commagenian capitals at Samosata and Arsameia in the third and second centuries B.C. was anything more than the minimum necessary for administration of a cult place on Belkis Tepe and for maintenance of a bridgehead on the west bank of the Euphrates.[230]

From historical sources we learn about this river crossing not for its settlements but for its strategic advantage for the movement of armies. This is true for Alexander's pursuit of Darius in 331 B.C., Antiochus III's march on Ptolemaic Syria in 221 B.C., and the attack on Demetrius by Timarchus in 161 B.C.[231] Substantial settlement only makes sense after Commagene emerged as the first real regional

stakeholder for Seleucia and Apamea following the river crossing's transfer into their hands on behalf of Rome in 64 B.C.[232] Framed by dramatic displays of military might at Zeugma from east and west—first Tigranes between 83 and 69 B.C. and later Crassus in 53 B.C.—Pompey's march down the Euphrates in 64 B.C. signaled an undeniable reversal of regional political and military alignment, the consequences of which would not have been lost on local residents. The newly discovered inscribed stele for the Commagenian ruler cult (**IN1**, **IN2**, **IN3**), set up at Zeugma about 64 B.C. but apparently dismantled fewer than 30 years later, suggests diminished Commagenian power. Previous excavations at Zeugma have noted a hiatus in occupation between a few late Hellenistic houses at Zeugma and later Roman building above them on a broader scale and different orientation.[233] For contrast, it is worth noting the survival of the Hellenistic city plan at Apamea-on-the-Orontes throughout Roman times, and even into the Middle Ages.[234] Roman presence in the East intensified until A.D. 17, when Germanicus imposed direct control on Commagene and put Zeugma on the brink of the Roman Empire's eastern frontier.[235] In the following decades Zeugma remained an occasional flashpoint for conflict, but it also evolved into a diplomatic point of transfer as the Euphrates River intensified as a political, military, and cultural boundary between East and West.[236] The arrival of the *legio IIII Scythica* and the final collapse of Commagene in A.D. 72 formalized Roman control on the west bank of the river and ushered in a new era of regional security for Zeugma, which in turn fostered settlement and economic development, not threatened until the Sasanian incursions of the middle third century A.D.[237]

Literary and epigraphic testimonia also suggest that while Zeugma grew, the Hellenistic fortress of Apamea was reduced to a depopulated suburb of the newly garrisoned Roman city on the opposite bank of the river.[238] Seleucia is mentioned in sources dated from the second century B.C. to the 11th century A.D., but Zeugma as a toponym appears no earlier than the middle of the first century B.C., and by the end of the second century A.D. it seems to have almost completely replaced the toponym Seleucia and its variants.[239] In contrast, the latest attestation of Apamea seems to be the trilingual victory inscription of Shapur I at Naqsh-e Rustam.[240] This does not say much about the character of Apamea in the mid-third century, since the text of the inscription reveals that Shapur's victory monument was concerned with the number of cities conquered rather than their size or importance. Shapur aside, Apamea is hardly mentioned at all after Pliny the Elder, and the city is absent from Ptolemy's list of towns on the Euphrates in the second century A.D.[241] On the Peutinger Table, Zeugma appears on the west bank of the Euphrates, but there is no corresponding town on the east bank.[242]

Thus the designation "twin towns" is undeniably catchy but perhaps somewhat misleading, especially given the evidence for the independent processes of development and decline for Apamea and Seleucia/Zeugma.[243] Geographically, the two cities were situated across an imposing divide between East and West. Apamea was founded on a fertile floodplain, while Seleucia was distinguished by steep terrain across eroded bedrock hills between Belkis Tepe and the river. Moreover, the archaeological record shows that the life cycle of each city was chronologically distinct, and this evidence is consistent with the literary testimonia. Of the many ancient sources for this river crossing, only two actually refer to cities joined by a river crossing on opposite banks of the Euphrates. Isidorus of Charax names each town on an itinerary composed about A.D. 25,[244] and Pliny describes Zeugma and Apamea joined by a bridge built by Seleucus, who founded both towns.[245] All other sources include only independent references to Seleucia, Zeugma, or Apamea as single places known by a single name.[246] These sources, now complemented by archaeology, convey the impression that the only common ground shared by Apamea and Seleucia was their foundation by Seleucus I Nicator.[247] It is therefore no surprise that Pliny's description is focused not on the towns per se, but rather on their foundation by the king. The clever simile of the marriage knot of Seleucus and Apama is no longer a meaningful paradigm for the relationship between the cities of Seleucia/Zeugma and Apamea.[248]

The Roman Army and Zeugma

The location of the headquarters of the *legio IIII Scythica* remains unknown, but regional evidence supports its proximity to Zeugma and robust interaction with the city.[249] For example, inscriptions attest to quarrying, irrigation, and construction of bridges, forts, and canals near Zeugma.[250] The abundance of military gravestones discovered around the city is also well known.[251] The rescue excavations of 2000 have now revealed a decided military presence in domestic contexts at the heart of the city. New discoveries of military equipment, statuary, coins, ceramics, and faunal remains all play a role in bringing the lives of soldiers at Zeugma into sharper focus.

The diverse content of Hoard 1 suggests that it may have arrived at Zeugma along with the army campaigning with Gordian III against the Sasanians in A.D. 242–244, and that the coins may be a guide to the movements of soldiers on their way to the East.[252] If so, the findspot in the House of the Hoards speaks to close connections between the residential district of the city and the legionary fortress. Military equipment comprises the bulk of the evidence for soldiers or veterans themselves in the city's houses.[253] Destruction deposits from the Sasanian attack of A.D. 252/253 revealed arms and armor in a state of disuse, apparently stored or abandoned, especially in Trenches 2 and 18, where the excavators found helmets, spearheads, pila heads, and arrowheads (e.g., **ML1–ML3**, **ML17–ML20**, **ML22–ML23**, **ML25–ML31**, **ML34**). The excavators also found fragments of scale armor (**ML6–ML8**) and, from

Sasanian destruction deposits in Trench 18, fragment of segmented armor (**ML9–ML16**).[254] Military equipment of this same character had also been found in the House of the Dionysus and Ariadne Mosaic, including a Roman sword or dagger not normally attested in the Roman East.[255] A particularly informative find from the rescue excavations of 2000 is the iron and bronze face-mask helmet from Trench 2 (**ML1**), which suggests that the legion at Zeugma may have engaged in equestrian spectacle of the kind described in Arrian's *Ars Tactica*.[256] This idea is supported by cavalry equipment found in the same house, and in other houses nearby, in Sasanian destruction deposits (**ML49–ML55**). The Zeugma helmet is also significant as a possession of the *legio IIII Scythica*, since the face-mask helmet is thought to have been introduced to the Roman army in Thrace, where this legion was formed.[257] Indirectly related to the military equipment is the nearly life-size bronze statue of Mars—nude, helmeted, and apparently holding a spear—found in the so-called Villa of Poseidon at Zeugma during the French and Turkish rescue campaign of 1999–2000. The statue had evidently been a principal component of the house's decorative program, probably adorning the courtyard, and had been removed for protective storage in advance of the Sasanian sack.[258]

The abundance of military equipment sealed in the destruction deposits of these domestic contexts invites speculation about billeting of soldiers in the houses of Zeugma. Especially for the sack of A.D. 252/253, the transformation of space and function witnessed in the architectural remains of several houses may have played out at the hands of the Roman army. For comparison, the Roman garrison at Dura-Europos converted the northwestern part of the city into a military camp.[259] In any case, the absence of any human skeletal remains sealed in the destruction deposits appears to rule out an active defense of the city at the time of the sack, and this suggests that the Roman army had abandoned the city.[260]

Regardless of whether or not soldiers were billeted in Zeugma's residential districts, aspects of Zeugma's urban topography are also consistent with a general military presence in the city. For example, bath buildings with connected latrines, one on the east side of the city discovered during bulldozing for the wall of the Birecik Dam prior to the rescue work of 2000, and another discovered in 2003 on the north side of the At Meydani plateau near the Bahçe Dere may have been designed to serve the military population of the city.[261]

An entire legion of soldiers must have had measurable impact on the local economy. Quantifying the effect involves taking into account regular pay for 5,000 soldiers for the duration of the legion's presence near Zeugma, between ca. A.D. 66 and the early third century, as well as provisions for the army supplied by the local economy, such as food, leather goods, and arms and armor.[262] Roman soldiers at Dura-Europos appear to have enjoyed a high profile in that town.[263] There is no need to expect anything different for Zeugma, although documentary evidence for this is indirect. For example, aspects of costume on a funerary stele of Flavius Telegonus from Zeugma suggest a link between legionaries and elite citizens of Zeugma.[264] A troupe of entertainers from Zeugma, mentioned at Dura-Europos, appears to have focused its attention on the needs of the Roman army.[265] Intermarriage between soldiers from the west and provincials was probably frequent.[266] Across the hinterland of Antioch, for example, investment in lucrative oleoculture and viticulture was a by-product of such intermarriage.[267] The overall effect of the legion's presence at Zeugma must have included similar investment in agriculture, as well as increased security from veterans policing the landscape and the spread of local religion along the Euphrates frontier.[268] The many indigenous recruits in the *legio IIII Scythica* no doubt enhanced integration between Roman military life and indigenous culture.[269]

The Economy

The anecdotal reference in Philostratus to a tax collector at Zeugma is often cited for questions of east-west trade because it mentions the river crossing.[270] Shifting the focus away from the direction of trade to tax collection itself alleviates the burden this passage places on Zeugma to prove itself a major force for trans-Euphratine commerce.[271] Indeed, finds from the rescue excavations of 2000 provide little evidence for long-distance overland communication between east and west. For archaeological evidence of commodities moved between east and west, it is tempting to suggest war alongside trade as a possible explanation for transport. Loot and captives returned to Mesopotamia from Roman cities following the Sasanian incursions of the 250s provide a likely example of a wartime context. In any case, the impact of the Roman army's presence on Zeugma's economy should not be underestimated, especially in terms of supply, diet, manufacturing, and the direction goods traveled.[272] Overall, the economic picture of Zeugma revealed by the rescue excavations is consistent with Kennedy's assessment for all of Syria—that most economic activity was local.[273]

Ceramic fine wares, amphorae, lamps, glass, coins, clay sealings, and building stone are examples of finds that suggest a focus on local production and north-south supply-lines for the economy of Zeugma. This is consistent with the undeniable force of the Euphrates River on daily life at Zeugma, as well as the river crossing, which may have been less of an avenue for east-west trade and more of a means to connect north-south avenues on opposite sides of the river. For example, some Parthian glazed wares appear at Zeugma, but only in quantities and contexts that do not allow for the formulation of an accurate picture of contact with Mesopotamia. The same can be said for so-called Roman/Parthian amphorae, which provide good evidence for local contact between Zeugma and the northern Balih Valley in late Hellenistic and early Roman times, but are less infor-

mative for long-distance east-west trade. Likewise, imports of north Syrian painted amphorae to Zeugma between the fifth and seventh centuries reveal regional contacts but not long-distance trade with the East.[274] Nor are any lamps or glass from Zeugma of decidedly Parthian or Sasanian character. In fact, ceramic evidence from the rescue excavations shows that the major axis of communication for Zeugma was not across the Euphrates River, but rather alongside it, evidently no further than Aşvan Kale to the north and at times extending as far south as Dura-Europos and Beirut.[275] This regional network included contact with sites in the three principal north-south valleys in Zeugma's hinterland: the Quwaiq, Balih, and Habur valleys. The finds betray occasional contact with the Mediterranean world and even less with Mesopotamia. Goods that did make their way inland from the coast probably came to Zeugma on the river route from the south. This north-south network for regional trade apparently had one period of greater extent, in the seventh century, when Sinope amphorae reveal garum exports from the Black Sea and Palestinian amphorae betray exports from the Levant to Zeugma.[276] Still, an overall lack of imports at Zeugma, general isolation from long-distance trade networks, and evidence for local production are recurring themes in chapters in this volume.[277] For evidence of local production, one can look to Dura-Europos lamps, which appear at Zeugma in the first half of the third century A.D.[278] In particular, two-nozzle lamps of a type previously known only at Antioch (Type 47a), where they have been dated to the third century, are extant in the Sasanian sack layer at Zeugma, thereby providing a terminus ante quem of A.D. 253 for production (**L114–L131**).[279]

Other categories of finds are consistent with these conclusions about Zeugma's isolation from long-distance commercial contacts. For example, Dunbabin observes that the only identifiable parallels for the 27 mosaics described in this volume are with traditions at Antioch, and that economic limitations may explain a predominance of two-dimensional geometric patterns in mosaics at Zeugma, at least for those in the houses published here.[280] Building stone at Zeugma provides further evidence, for it is almost entirely limestone quarried from the immediate area.[281] Scraps of imported marble appear here and there, and the excavators noted only occasional evidence for opus sectile and revetment.[282] Demand for these modes of décor may have been supplied by Antioch, not as freshly quarried stone but as remnants from coastal marble yards or urban workshops. Marble sculpture is infrequent at best.[283]

The numismatic evidence merits special comment.[284] Coins of Zeugma and regional cities like Chalcis, Beroea, Cyrrhus, and Hierapolis issued in the second and early third centuries A.D. reveal Zeugma's participation in an inland economy confined to the Quwaiq, Balih, and Habur valleys and only extending into Mesopotamia as far as Edessa. A hoard of 462 coins from Trench 9 (Hoard 1) contains a variety of issues from across the Roman Empire, but Butcher has identified this as a miscellaneous junk collection of noncirculating coins without meaning for Zeugma's monetary economy, perhaps amassed bit by bit from Roman soldiers arriving from the West. This interpretation also raises the possibility that this so-called hoard, if not legal tender at Zeugma, was never actually hidden. This conclusion is consistent with the context for discovery among many other metal objects in a house with a patron apparently involved in the scrap-metal trade.[285]

One material class differs from this overall picture of isolation for Zeugma, but only for one period in the life of the city. Storage vessels at Zeugma in the first half of the third century A.D. are a mix of locally produced table amphorae and long-distance imports. Among the latter, Reynolds notes that Campanian wine amphorae and Baetican oil amphorae stand out as exports that may have traveled in the same shipments to cities, like Zeugma, with important military status. At the very eastern end of this western supply chain, and at the very western end of the Silk Road, Zeugma appears to have been forever on the periphery of two worlds, important as a link between separate long-distance supply networks operating to the east and west of the Euphrates River.

We expect that ongoing study of the estimated 100,000 clay sealings found in 2000 will enhance our understanding of trans-Euphratine trade at Zeugma.[286] By all estimates, this archive of unprecedented size will provide clues about Zeugma's marketplace and trading partners.[287] The clay sealings from the rescue excavations published in volume 2 by Sharon Herbert demonstrate commercial interests between Caesarea Maritima and Cappadocia, and thus support the interpretation of Zeugma as a player in north-south trade along the Euphrates River valley.[288] An explanation for the general absence of imports at Zeugma may be found in proper study of the sealings, which could support the idea that many goods must have passed through the city as cargo without making their way into local usage. Like the examples described by Herbert, other Zeugma sealings may hold clues to these transactions, especially the identities of trading partners, the origins and destinations of commodities, and the volume of goods that passed through Zeugma.[289]

Occupations

A recent population estimate for Dura-Europos claims no more than 6,000 inhabitants for the Hellenistic city, and the same for the Roman city, with the addition of about 1,000 soldiers.[290] Many local products are attested at Dura-Europos, including glass, metalwork, and textiles.[291] If a city the size of Dura-Europos sustained such industries, then the same, perhaps on a larger scale, might be expected for Zeugma.[292] In fact, a number of artifacts discovered in the rescue campaign of 2000 suggest specific occupations.

Spindle whorls (**SW1–65**), a distaff (**BI13**), pins and needles (**BI12**, **BR52–53**), and a set of iron combs for production of wool (**IR69–73**) suggest textile manufacture, but the scale is not easy to discern. These are portable objects, so

findspot is not the best indicator of a room's functionality. Even less can be said about the textiles themselves. The excavators found fragments of carbonized shoe soles in Sasanian destruction deposits in Trench 2 (**TX26–27**) and linen from similar deposits in Trenches 2 and 9 (**TX1–TX22**).[293] The Zeugma textiles preserve evidence for two techniques: the warp-weighted loom and the two-beam upright loom. It is not possible to know if the textiles were manufactured at Zeugma or imported, but the excavators found evidence for the warp-weighted loom in 2000, and this suggests local production.[294] Zeugma's many mosaic pavements and evidence for tesserae stored in preparation for use betray the presence of local mosaicists.[295] In addition, Zosimos of Samosata, a possible itinerant artisan from the Commagenian capital, signed pavements at Zeugma.[296] Metalwork and coins from Trench 9 suggest the presence of a scrap-metal trader, as noted. Mints of Samosata and Zeugma may have had die engravers in common for issues of Marcus Aurelius and Lucius Verus.[297] Clay sealings bearing private portraits and inscribed names with striking resemblance to examples from the Near East are a possible indication of merchant-class mobility on a north-south axis between Zeugma and the Levantine coast.[298]

Diet

Commagene and northern Syria had their share of fertile land for agriculture.[299] New evidence for the production of food at Zeugma before the Sasanian sack sheds light on occupations as well as diet. Evidence for food production and diet at the post-sack community at Zeugma is as elusive as the pockets of settlement themselves. Regional surveys suggest that Zeugma was too far north, and too far inland, to participate in the developed oil and wine trade that involved Antioch, Apamea-on-the-Orontes, and the limestone massif around Déhès in the fourth, fifth, and sixth centuries.[300] Prior to A.D. 252/253, exploitation of the land around Zeugma and Apamea to support the economy of the river crossing and the legionary fortress has already been demonstrated by the moderate density of sites, some perhaps villas or farmsteads, identified by Algaze's survey.[301] Large rock-cut tomb chambers across north Syria also bear witness to the emergence of land-ownership in the second century A.D. by elites and veterans of the Roman army.[302] The excavators at Zeugma in 2000 were able to identify a number of agricultural products in domestic contexts, especially from the Sasanian destruction debris. Among these were wheat, barley, olives, nuts (almond, walnut, and pistachio), fruit (grapes and pomegranates), and pulses.[303] The evidence for grain is consistent with the presence of the Roman army.[304] Veterans in the region may have been responsible for oleoculture. In the hinterland around Antioch, a rise in olive-oil production in the first century A.D. is apparently connected to an expansion of rural settlement following the arrival of the Roman army to the region.[305] The basalt-rich landscape of northern Syria provided ample tools for processing wheat, grapes, and olives.[306] It is conceivable that vineyards near Zeugma contributed to high-quality wine for which other cities in Syria were known.[307] Other likely products are only suggested by indirect evidence. For example, cherries on wall decoration in the house at Site D from the Kennedy-Freeman excavations, roses in painted-plaster decoration on chamber tombs, where such flowers may have been left as offerings, and the history of honey production in the Euphrates Valley.[308]

Agricultural produce may have also supported animal husbandry. Animal skeletal remains from domestic contexts excavated in 2000 produced abundant evidence for the consumption of meat at Zeugma.[309] Pigs were apparently favorites, with cattle, sheep, and goats (for cheese as well as meat) not far behind. Pork and beef were familiar staples for the Roman army, and soldiers in the *legio IIII Scythica* near Zeugma must have had some influence on diet in the city.[310] Modifications to the House of the Helmets in the second quarter of the third century A.D. were apparently designed to accommodate animals on the ground floor. An animal trough is a likely identification for the mud-brick structure installed in the courtyard, and holes carved into wall blocks in Trenches 2, 3, and 8 for tethering animals are further evidence for makeshift stables in the city at this time.[311] Horses, also represented in the animal skeletal remains, were probably used for cavalry, not food.[312] The excavators also found dromedary camel bones in surface contexts in Trenches 12, 15, and 19 (contexts 12002, 15001, 19001). Camels may have been used at Zeugma for desert caravan trade or military supply trains.[313] Charles observed butchery chop marks on some of the bone fragments, and this is consistent with the Persian and Arab custom of camel sacrifice.[314]

River fish appear in the corpus of animal bones, but not marine fish—another reminder of Zeugma's inland location.[315] But fragments of burnt oyster shell were found in Sasanian destruction levels (context 2039). These are *Ostrea edulis*, a Mediterranean marine bivalve of the type also found in domestic contexts at Carthage, Herculaneum, Oplontis, Molise, Settefinestre, and the Villa of Livia at Prima Porta.[316] They are also well known from Roman military outposts in Germany and Switzerland.[317] It is not possible to tell if the Zeugma oysters were used for food or medicine, or whether they were caught or cultivated on an oyster farm.[318] Apicius had live oysters sent to Trajan in the Persian desert, so transport from the Mediterranean to Zeugma may have been common, especially to supply the Roman army.[319]

The Euphrates River and the Regional Economy

One need look no further than the Euphrates River to understand the north-south orientation of Zeugma's regional trading network. As a perennial conduit for north-south communications and commerce, boat traffic on the river accommodated personal travel, trade, and military maneuvers alike.[320] A graffito of a riverboat scratched in painted

plaster in the House of the Hoards reflects the river's importance for Zeugma.[321] The evidence for roads shows that terrestrial routes were aligned with the river, especially on the west bank (fig. 10).[322] A pontoon bridge at Zeugma would have allowed for boats of any breadth or height to pass as needed.[323] Indeed, the everyday economy of the region seems to have played out on the Euphrates River itself and on north-south avenues along its banks.[324]

The river must have been vital for transport of commodities like livestock, timber, and building stone.[325] The example of glass tableware also suggests Zeugma's lasting dependence on north-south supply lines. Kenrick's contribution to volume 2 observes a striking reduction in ceramic finewares at Zeugma in the generation leading up to the sack of A.D. 252/253. The near complete absence of fine wares in the first half of the third century A.D. could mark a shift to a preference for glass tableware.[326] Kenrick finds parallels with the reduction of ceramic fine wares at Zeugma at Dibsi Faraj and other inland sites in the Quwaiq Valley, but not at coastal sites like Antioch. In the late fifth to early seventh century at Zeugma, glass persisted, while fine wares reappeared in only low to moderate quantity—primarily Phocaean Red Slip Ware, Cypriote Red Slip Ware, and African Red Slip Ware. Ceramic imports from the coast were never great at Zeugma, and so a disruption of contact with the Mediterranean need not be introduced here as an explanation for the shift from tableware in ceramic to glass. As Kenrick suggests, the phenomenon may be explained by changes in goods available to Zeugma's regional trading partners along the Euphrates River. Indeed, in the wake of the deeply penetrating campaigns of Shapur in the 250s, reduced production of local resources would have been compounded by challenges to move goods across disrupted routes of communication. Closer to the coast, Antioch and Apamea-on-the-Orontes continued to engage in lively trade in the fourth century, especially in olive oil and wine, and Beirut experienced urban revival.[327] In the post-Shapur world of the Euphrates Valley, cities to the south of Zeugma, like Beroea and Hierapolis, emerged as new way stations between the Mediterranean and Mesopotamia, especially for armies.[328]

Overall, the rescue excavations of 2000 show that this complex conduit for north-south trade was also an imposing border between Syria and Mesopotamia.[329] For example, Rome's foothold on the east bank was never as strong as its grasp of the west bank of the Euphrates, and Parthia may have been somewhat ambivalent about territory to the west.[330] Flowing through tenacious zones of cultural identity, the Euphrates River may have been a formidable barrier against the transmission of culture between east and west. This may have been especially true for Zeugma because of its location on the northern periphery of routes between the Persian Gulf and the Mediterranean.[331]

Religion

The archaeological evidence shows that the Commagenian ruler cult was a dominant force of religion at Zeugma, at least during the lifetime of Antiochus I.[332] The evidence from Trench 15 suggests that Roman interests eclipsed the Commagenian ruler cult by no later than the early first century A.D.[333] For the inhabitants of Roman houses adorned with mosaic pavements, favorite deities from Graeco-Roman mythology included Aphrodite, Dionysus, Oceanus and Tethys, and Poseidon.[334] But there is no corresponding evidence of cult places for these deities at Zeugma.[335] One exception may be the river-god Euphrates, whose epiphany adorns mosaics and a rock-cut relief in an artificial grotto near the river (now submerged).[336] Nor do artifacts with representations of deities found in the rescue excavations of 2000 necessarily indicate the existence of sanctuaries for these deities at Zeugma. These include a marble statuette of Hygieia from Trench 11 (**SS5**) and a small bronze protome of Dionysus (**BR148**) from Trench 9, perhaps meant to adorn a tripod. To this category add two bronze statuettes from previous excavations at the House of the Dionysus and Ariadne Mosaic: Mercury holding a moneybag and a winged Eros holding a cornucopia.[337] But these do not necessarily connote worship beyond the room in which they were found. Like the above statuettes, the near life-size bronze statue of Mars discovered in Trench 8 in 2000 has a domestic context.[338] Mithras is also elusive at Zeugma, where artifacts bearing specific iconographical indicators for the presence of his cult are absent, despite evidence that the *legio IIII Scythica* from Zeugma contributed to the rebuilding of the Mithraeum at Dura-Europos.[339]

A stronger case for worship at Zeugma may be made for Aphrodite, who appears in no fewer than four new statuettes in three different media: bronze (**BR153** and **BR154**), terracotta (**TC1**), and worked bone (**B29**).[340] The findspots show broad distribution across the residential district excavated in 2000. **BR154** and **TC1** were found in the House of the Plastered Floor in Trench 18, **BR153** in the Southwestern House in Trench 5, and **B29** in the House of the Hoards in Trench 9. A votive function is by no means certain, and the statuettes do not prove the existence of a cult of Aphrodite at Zeugma.[341] Affection for the Anadyomene type at Zeugma is consistent with the city's proximity to Antioch, and thence Cyprus, the birthplace of the goddess. Like the appearance of Poseidon, Oceanus, and Tethys in the mosaics of Zeugma, Aphrodite Anadyomene contributes to a conspicuous preoccupation with the sea among this inland city's inhabitants—a proclivity perhaps rooted in emulation of elite culture at Antioch.

Belkis Tepe appears to be a proven point of religious continuity between Hellenistic and Roman times at Zeugma.[342] A sanctuary as early as the Seleucid era is likely but not proven. The sanctuary was probably always extra-urban.[343] The solid ashlar construction in the temenos wall and temple podium on Belkis Tepe is not out of character with the

Figure 15. Fired-clay stamp from Trench 9.

foundations for the large building in Trench 15 dated to the first century B.C., which was probably part of a Commagenian sanctuary. Fragments of a *dexiosis* stele depicting Antiochus I and Herakles found by Wagner on Belkis Tepe in the early 1970s reveal a focus of worship on the acropolis during the rule of the Commagenian dynast.[344] In Roman times, Zeugma's mint chose Belkis Tepe for the signature landmark to adorn the city's coins.[345] The types depict a tall hill crowned by a tetrastyle temple with a Syrian arch in the pediment. Porticoes flank the temple and enclose stylized hills in front of it. A wider central intercolumniation on the temple reveals a seated male holding a spear or staff, identified as Zeus Katabaites.[346] Tyche has also been suggested for the image of the deity shown in the temple on Zeugma's coins.[347] This identification has the support of two fragments of a colossal seated statue in limestone that remain high on the north slope of Belkis Tepe, tumbled down from the acropolis. Wagner saw the fragments in 1972 and assigned them to a cult image of Tyche that probably stood inside the temple.[348] The date of the statue is not entirely clear, but it may belong to a Roman reorganization of the acropolis in the late first or second century A.D. The temple-on-a-hill motif belongs to Zeugma's earliest coins, issued under Antoninus Pius, but the statue could be earlier.[349] The impetus for refurbishing a Seleucid/Commagenian sanctuary on Belkis Tepe may have been akin to local affluence and competition for public benefactions that inspired new temples to Zeus and Bel in the early first century A.D. at Gerasa and Palmyra.[350] Indeed, a new focus on Zeugma's acropolis in Roman times makes sense in light of the contemporary demise of the Commagenian sanctuary in Trench 15.

Zeus and Tyche were probably not the only deities worshiped on the acropolis. A limestone torso of a colossal Athena was found near the northern base of the acropolis, and part of another colossal statue was witnessed at the southern base of the acropolis by Cumont, who identified the statue as Ares.[351] Overall, the evidence for representations of deities at Zeugma in the Roman era reveals a striking divide between the acropolis and the city below. None of the deities depicted in Zeugma's figural mosaics is represented on the acropolis. A possible exception is Ares, if Cumont's identification of the colossal statue was correct, given the bronze statue of the god that was discovered in the so-called Villa of Poseidon at Zeugma.[352] In any case, adoration of Zeus, Ares, and Athena on the acropolis, a triad renowned for war, is consistent with the presence of the *legio IIII Scythica* at Zeugma.[353] A symbol of the legion, Capricorn, often appears on the coins of Zeugma with the temple-on-a-hill motif, and this suggests a connection between the acropolis and the Roman army.[354] Capricorn was also engraved alongside a crescent moon on an intaglio set in a gold finger ring sealed under the Sasanian sack layer in the House of the Helmets.[355]

The rescue excavations of 2000 provide the first demonstration by archaeological evidence of a decided Christian community in the post-sack community of Zeugma. Kennedy has compiled the pertinent historical sources, which include references to a bishopric at Zeugma.[356] The fourth-century monastic foundation near Zeugma mentioned by Theodoretus is consistent with the transformation of the Hellenistic outpost at Jebel Khalid into a retreat for Christian Syriac solitaries in Byzantine times.[357] Syriac appears to have been the written dialect of choice for what was probably an Aramaic-speaking Christian community at Zeugma, but Syriac inscriptions are rare.[358] A fired-clay stamp from Trench 9 may bear letters in Aramaic (fig. 15).[359]

The principal evidence for Christianity at Zeugma consists of architecture and artifacts that suggest an ecclesiastical function. A capital with a cross motif was found in Trench 3 in 2000, near the remains of what may have been a small apsidal church.[360] Unpublished correspondence in the OA project archive for Zeugma also mentions ecclesiastical architecture, especially parts for a chancel screen, in Trench 8.[361] It is conceivable that some of this evidence belongs to the church of Mary the Mother of God, which is attested for Zeugma in A.D. 583.[362] This church appears to have been part of a regional Christian community. For example, Algaze observed a ruined church about 15 km north of Zeugma on the west bank of the Euphrates, near Ehnes—perhaps a church of Saint Sergius.[363] Kennedy mentions a church-style mosaic found at Asağı Çardak, about 8 km upstream from Zeugma, and Comfort points out a church near the village of Saylakkaya.[364]

Artifacts from the rescue excavations of 2000 attesting to liturgical activity at Zeugma include a strainer spoon (**BR159**) and a number of architectural parts adorned with a cross or a christogram-in-medallion motif (**A45, A49, A52, A60, A61**).[365] Among these finds, **A52** and **BR159** were recovered from the Sasanian destruction layer of A.D. 252/253, and they therefore provide some evidence for Christianity at Zeugma as early as the first half of the third century. From a surface context the excavators of 2000 also recovered an inscribed limestone funerary stele that includes an invocation of Christ (**IN9**).[366]

Indigenous Culture at Zeugma and the West

Domestic architecture and artifacts from the new excavations reveal a city on the eastern frontier engaged in emulation of Graeco-Roman elite culture.[367] But the relative absence of documents from the excavations means that the people engaged in this behavior remain elusive. At Palmyra and Dura-Europos syncretism of Hellenic, Roman, Parthian, and indigenous traditions was both robust and complex.[368] But Zeugma did not have the indigenous underpinning of its neighbors to the south. Zeugma never underwent a phase of Parthian settlement, in the manner of Dura-Europos, nor did it ever witness indigenous culture as profound as Palmyra's. Western colonists were a new cultural force for the region when Seleucia-on-the-Euphrates and Apamea were founded at the end of the fourth century B.C.[369] Commagenian and Roman influence flourished on these familiar foundations. The archaeological evidence confirms Zeugma's place in the geographical and cultural tripartite division of Syria, in which the Seleucid foundations of the north were grouped with the Hellenized cities of the Mediterranean coast. Along this interface, native traditions found the weakest expression in periods of intensive western cultural influence, but proved their perseverance by resurfacing in late antiquity.[370] Thus, Zeugma's profound proclivity to the West affords an occasional glimpse of hybrid forms of Graeco-Roman and indigenous expression.[371]

Local culture at Zeugma is difficult to discern through the thick veneer of western models for behavior and display.[372] Architectural decoration, domestic interiors, and documents betray substantial Hellenic and Roman influence. For example, Zeugma's triclinia, courtyards, fountains, and cisterns find their best parallels at Delos, Ephesos, and Antioch.[373] The themes, iconography, and language of Zeugma's domestic interiors, especially mosaic pavements, are thoroughly Graeco-Roman.[374] Yet the one named mosaicist from Zeugma, Zosimos of Samosata, suggests that local artists working in western traditions were responsible for at least some of this repertoire.[375] The new Greek and Latin documents from Zeugma (**IN1–15**) are consistent with the absence of indigenous languages at the site.[376] The same applies to material culture concerned with contracts, commerce, and calculation of value and quantity, like coins and clay sealings.[377] The metalwork is also decidedly western in appearance and technique.[378]

Finds from the rescue excavations of 2000 are in general agreement with the picture of the city provided by previous investigations. For example, Zeugma's hypocaust baths are a likely result of the arrival of the *legio IIII Scythica*.[379] Also foreign to the region is the masonry technique of mortared rubble, preserved in foundations in Trench 15 and in the standing remains of what might have been a monumental arch, another western architectural form, at the base of Belkis Tepe (Plate 1).[380] Mortared rubble was used for the Roman fortifications of Samosata, where distinct Roman facing in *opus reticulatum* has been dated to the period immediately following the Flavian capture of the city.[381] In terms of organization and design, Zeugma's large rock-cut chamber tombs also demonstrate the influence of western funerary traditions.[382] In terms of funerary portraits, monuments at Zeugma preserve a mix of Parthian and Roman dress, including formal Roman military costume, but the texts that appear with these portraits are Greek and Latin.[383]

Indigenous culture is visible among the mundane aspects of daily life at Zeugma. The mix of stone and mud-brick for the construction of house walls conforms to regional traditions.[384] Likewise, the appearance of ESA and "Parthian" green-glazed ware in first-century B.C. and first-century A.D. contexts suggests that Zeugma was a participant in the cultural *koine* of cities like Dura-Europos and Hama at this time.[385] Among pottery and lamps at Zeugma, local products outnumber imports. As with mud-brick architecture, these products use regional materials and labor, and in appearance they represent local taste. Less certain is whether they reflect the assertion of local identity at Zeugma or simply economic and geographical limitations on materials and supply.[386] Discrete geographical zones within ancient Syria favor the latter scenario, especially given the isolation of north Syria from the desert to the southeast and from the Mediterranean coast to the southwest.[387]

The Sasanian Sack of A.D. 252/253

The destruction deposits of A.D. 252/253 preserve a revealing snapshot of an urban catastrophe in the Roman East. The moment frozen in time has captured evidence for the domestic and regional economy, houses and their decoration and furnishings, diet, dress, religion, and recreation on the Euphrates frontier. It also reveals Roman attitudes about survival and the value of personal property in times of crisis.

Septimius Severus reorganized the eastern frontier at the end of the second century, in some cases reclaiming territory won for Rome by Trajan.[388] Osrhoene became a province in A.D. 195 and its capital Carrhae a Roman colony in A.D. 198. At the same time, Mesopotamia became a province, with a garrison guarding its new capital, Nisibis. After an almost 50-year hiatus, Zeugma's mint was again active between A.D. 213 and 217, at this time producing the city's only

silver coinage.[389] How the city felt the impact of the *Constitutio Antoniniana* of A.D. 212 is not known, although it is tempting to view it as the impetus for the refurbishments to the residential district of Zeugma in the early third century A.D. that were discovered in the rescue excavations.[390] None of these developments would have necessarily allayed fears of incursions from the east, despite Osrhoene's continuing status as client of Rome following victories of Lucius Verus. Skepticism about safety may have peaked with the redeployment of detachments and ultimately the removal of the entire legion from Zeugma to other parts of the eastern frontier at some point in the early third century.[391] Exactly when this transpired is not known. After the murder of Caracalla in A.D. 217, a military presence at Zeugma is suggested by the arrest of Macrinus there in A.D. 218, shortly after his troops had declared him Caesar.[392] Ongoing social life in the city is suggested by an inscription from Laodicea in Syria attesting to a local athlete who won two victories in contests at Zeugma in April A.D. 221, where the prize was one talent.[393] But at some point Zeugma's mint went out of use, and the city's final issues were struck at Antioch under Elagabalus and Philip I.[394]

By the 240s A.D. the inhabitants of Zeugma may have begun to sense that an attack was inevitable, for Sasanians had already clashed with the Roman army at Hatra in 240, at Nisibis and Carrhae in 242, and at Rhesaena in 243.[395] Despite these distant threats, the numismatic evidence suggests that city life continued as normal, at least through most of the second quarter of the third century A.D. For example, in addition to several hoards of coins discovered in the rescue excavations, there were many third-century coins in the destruction deposits, especially from Trenches 2 and 9. Among these are 127 single finds discovered across two adjacent houses in Trench 9, and 72 single finds from across four adjacent houses in Trench 2.[396] These speak to no less than moderate activity in these houses by the generation displaced by the sack.

Still, the impact of regional setbacks for security is perceptible in alterations to several houses at Zeugma. There is clear evidence for rather drastic change to the appearance, function, and access in several houses in the years preceding the Sasanian sack of A.D. 252/253, and in some cases this appears to have involved at least partial abandonment. Some of the clearest evidence for these changes is preserved in the House of the Helmets, the House of the Fountain, and the House of the Hoards.[397] In some cases, inscribed blocks from important public monuments dated to the first and second centuries A.D. were found built into walls of houses that were later destroyed in the Sasanian attack (**IN4**, **IN6**). These provide rather sound evidence for the dismantling of public monuments in the city and the reuse of the building material for domestic refurbishments in the first half of the third century A.D. Early Imperial funerary stelae are also attested as spolia for building in these houses (**IN7**).

Alterations to house design involved changes to accessibility and functionality. For example, builders blocked a doorway in the House of the Hoards (Trench 9) and walled up spaces between columns in the courtyards of the House of the Helmets and the House of the Bulls (Trench 2). In the House of the Fountain (Trench 11), a doorway was blocked, a mosaic pavement covered over with a mortared floor, and a fountain and latrine put out of use, presumably due to interruption of water supply.[398] Lower-story rooms on the northwest side of the House of the Helmets may have been converted into a stable.[399] The vivid geometric motifs painted on the walls of a room in the House of the Hoards were surrendered to the whims of graffiti artists.[400]

Other rooms were clearly in the processes of redecoration at the time of the sack. In the House of the Bulls in Trench 2, a layer of painted wall plaster with vegetal decoration had been plastered over monochrome, perhaps in anticipation of new painted decoration (Rooms 2J and 2K). In Room 2J, a new coat of painted wall plaster and a new mosaic (**M8**) are the last additions before the Sasanian sack of A.D. 252/253. In Room 2K, a new coat of painted plaster followed on the heels of mosaic **M10**, also added to the room in the years before the sack. In the House of the Hoards, painted plaster had been mettled in preparation for new layers.[401] Redecoration is also witnessed by tesserae found inside an amphora in the House of the Tesserae in Trench 9, apparently in storage awaiting use for a pavement. In another house, the excavations by Catherine Abadie-Reynal discovered a similar heap of mosaic tesserae.[402] These tesserae may have been harvested from mosaics in abandoned rooms of houses with the intent to recycle them in new pavements for inhabitants determined to stay on at Zeugma.[403] Alternately, the tesserae may have been gathered up for storage, for an anticipated phase of rebuilding upon return to Zeugma once the threat of the Sasanians had subsided.[404] In any case, the process was stopped in its tracks in A.D. 252/253.

News of the catastrophic loss of Roman troops to Shapur I at Barbalissus and the taking of Antioch would have been terrifying at Zeugma.[405] Based on the condition of the houses and the sealed destruction deposits recovered in the rescue campaign of 2000, the inhabitants of Zeugma anticipated the Sasanian advance into northern Syria and escaped before the sack.[406] Indeed, the telltale signs of a surprise attack are absent from Zeugma. There are no human skeletal remains from any of the numerous destruction deposits, nor do the animal skeletal remains suggest that live animals had been trapped in the city as it burned.[407] But there is abundant evidence for a protracted interruption of domestic life concluded by a hurried escape.[408] Several hoards of coins found in the houses are among the many indications that the refugees hoped to return.[409] To these one can add rooms with abandoned furnishings and household accoutrements.[410] Two categories of objects are particularly forthcoming about life in the city on the eve of the attack: vessel glass, if only for the sheer volume in which it was found, speaks to the amount of tableware left behind (table

2); locks and padlocks for doors and cabinets, also found in abundance, suggest a preoccupation with security.[411] The Wedding of Dionysus and Ariadne mosaic depicts a chest of the type these locks would have secured.[412] Perhaps most revealing is the bronze statue of a nude and helmeted Mars, laid away in a storeroom along with a large bronze candelabrum in the so-called Villa of Poseidon, not for fear of theft but for protection from anticipated damage to the house.[413] The deposit suggests that the inhabitants were preparing to endure a threat from which they expected to recover, as if sandbagging before a flood, or boarding up windows before a hurricane. The behavior of the residents might also suggest a rather acute understanding of the enemy's disinterest in occupation, thereby inspiring hope that they might return and rebuild after the attack. In more general terms, the archaeological evidence for Zeugma suggests a scenario somewhat akin to that described by Ammianus Marcellinus for the evacuation of Nisibis in A.D. 363: "Then the various roads were filled with people going wherever each could find refuge. In their haste many secretly carried off such of their own property as they thought they could take with them, disregarding the rest of their possessions, which, though many and valuable, they were obliged to leave behind for lack of pack-animals."[414] Under the terms arranged for Jovian's surrender of the city to Shapur II, those inhabitants were given three days to exit the city walls.

The survival of so many undisturbed destruction contexts of A.D. 252/253 within the residential district of the city lends weight to the veracity of Shapur I's claim, recorded in the victory inscription at the triumphal monuments of Naqsh-e Rustam, that the people of the Roman cities he sacked in Syria, Mesopotamia, and Cappadocia were captured and enslaved.[415] The pattern of abandonment witnessed by the rescue excavations of 2000 suggests that the residents of Zeugma were familiar with the Sasanian penchant for enslaving prisoners, and that they may have feared capture in equal measure to death.

The apparent absence of defenders in the city in A.D. 252/253 did not spare the homes from the destructive force of the Sasanian army. The houses may have been ransacked before they were razed, but looting, if any, was by no means systematic. The bronze statue of Mars hidden in the Villa of Poseidon was not removed, despite a Parthian and Sasanian interest in bronze statuary and the fact that statues were common spoils of war.[416] An iron and bronze cavalry helmet (**IR1**) and a gold finger ring with inset gemstone (**GD1**) are among objects that could have been seized by the invaders but were not.[417]

SUMMARY

Any query into the Hellenistic and Roman Near East presents a formidable challenge, not least because of its uneven sources, its diverse topography and archaeology, and its present-day multicountry situation.[418] Interpretation of Zeugma is no exception, given constraints imposed by borderland topography and unevenness in the survival of evidence and the pattern of discovery. Perhaps this is why Zeugma remains on the margin of recent in-depth syntheses of ancient Roman Syria that have appeared well after volumes devoted to the city by Wagner and Kennedy.[419] The excavations reported here focused on a narrow slice through a residential district of the city. Moreover, the formation processes of the archaeological record for these houses included partial abandonment, violent conflagration, and, in some areas, partial resettlement. The dazzling polychromy of a fresh corpus of mosaics may have forced a second look at the frontier city, but public buildings remain elusive and documents are few in number. Thus, for public life and institutions, Zeugma remains hardly comparable to Antioch, Palmyra, or even Dura-Europos. Sharon Herbert's examination of a small sample of the tens of thousands of clay sealings newly discovered at Zeugma demonstrates that this need not be the case.[420] For example, the symbols of identity preserved on these sealings hold answers to questions about processes of acculturation at Zeugma and the depth to which emulation of western culture penetrated beyond elites and into the everyday marketplace. The publication of these sealings and other artifacts in volume 2 separately from nearly identical artifacts found in nearby trenches excavated at the same time highlights ongoing challenges for archaeological sites with international appeal. The reader is reminded to bear all of these limitations on interpretation in mind.

It would be a mistake to assign Zeugma the status of a great caravan city like Palmyra, Edessa, or Hatra. In fact, the city was near the very northern limit of caravan trade between Mesopotamia and the Mediterranean.[421] Nor would it be accurate to relegate Zeugma to the margins of consequence, as Rostovtzeff did for Dura-Europos.[422] Although Zeugma and Dura-Europos were both Seleucid foundations of similar date and were both sacked by Sasanian armies led by Shapur I in the 250s A.D., Dura experienced several generations of Parthian control, from about 113 B.C. until the Roman conquest of A.D. 165/166, with the exception of a brief period of Roman control under Trajan between A.D. 115 and 117. Zeugma was well established as a Roman garrison and trading center on the Euphrates by the time of Trajan, and the material remains of the city, frozen in time by the catastrophic sack of A.D. 252/253, reveal profound emulation of Graeco-Roman elite culture, no doubt encouraged by proximity to Antioch.[423] Dura-Europos, on the other hand, began life as a Roman city only under Lucius Verus and then endured a protracted process of acculturation as the freshly imported Roman garrison found its place among the city's engrained Parthian past. When Dura-Europos was sacked a few years after Zeugma, the city was a unique hybrid of Graeco-Roman, Syrian, Mesopotamian, Palmyrene, and other local culture. Most of all, Dura-Europos helps us understand how much more Ro-

man Zeugma was. Among cities of the Euphrates frontier, Zeugma was perhaps the most Roman of them all. Freya Stark recognized this when she remarked that, despite a Roman presence at cities like Nisibis and even Ctesiphon, from the perspective of the East the Roman world began at Zeugma.[424]

EPILOGUE: ZEUGMA, DAMS, AND ARCHAEOLOGY

A final note on dams and archaeology. Archaeology and hydroelectric technology clashed on the Euphrates in the year 2000. A summer of intensive salvage could not save Zeugma from inundation by an artificial lake behind a dam on the very river that the ancient city's foundation had intended to control.[425] Apamea is completely lost and an estimated 30 percent of Zeugma is now under water. [426] These were not the only archaeological sites erased from the landscape. Algaze's survey identified scores of others targeted for inundation by the Birecik reservoir—some had been subjected to archaeological investigation, but many others had not.[427] The material recovered from Zeugma in the rescue campaign of 2000 is a mere fraction of that lost to the reservoir. Regrettably, the lower banks of the Euphrates were home to the majority of Zeugma's hallmark houses, adorned by suite upon suite of polychrome mosaic pavements with figured panels framed by mesmerizing geometric borders. Still, much of the city has survived to invite future scientific exploration, including the acropolis, a theater, several necropoleis, and remains of monumental buildings with walls preserved high enough to protrude through meters of colluviation on the slopes of the city's signature landmark, Belkis Tepe.[428]

This is not the first meeting between archaeology and a dam, and it is certainly not the last. In 1973, Al Assad, the artificial lake behind the dam at Tabqa, Syria, destroyed many archaeological sites.[429] In China, the debate between competing agendas of sustainable development projects and cultural resource management bubbled to the surface during the construction of the Three Gorges Dam—now the world's largest.[430] The Nile witnessed losses to archaeology with Egypt's Aswan Dam in the 1960s, and is now facing further losses with the construction of Sudan's Merowe Dam.[431] Nor is India a stranger to this debate.[432] Like those nations, Turkey is also challenged to manage the impact of its dams on the environment and humanity. Completed in 1974, the Keban Dam on the upper Euphrates spurred on rescue excavations and publication of findings in Aşvan Kale and surroundings, a region, like Zeugma, once in the purview of Seleucid, Armenian, and Roman interests.[433] The Karakaya Dam presented archaeologists with similar challenges on the upper Euphrates in the following years.[434] By the late 1980s, Samosata, the palatial capital of Commagenian dynasts who once controlled Zeugma, had disappeared in toto beneath the waters of the Euphrates as they rose behind the Atatürk Dam—now the sixth largest in the world.[435] Construction on a giant array of dams and hydroelectric powerplants on the Tigris and Euphrates is continuing today.[436] Among these, the Ilisu Dam on the Tigris has proven to be the most challenging, in part because of its threat to the archaeological site at Hasankeyf.[437] This book on Zeugma thus takes its place alongside other accounts of salvage work carried out to offset losses to archaeology and cultural heritage incurred by these transformations of the planet.[438]

NOTES

1. Stark 1966, 109. For the political geography and strategic importance of northern Syria, Butcher 2004, 7–12; Mann 1974, 522; Lepper 1948, 114. For the geoarchaeology of this region, see Wilkinson et al. 2007, 220–3.
2. Pliny *HN* 5.33. Ptolemy, Strabo, and Pausanias are among additional sources for the geographical location of Zeugma, which also appears on the fourth-century Peutinger table: Ptolemy *Geog.* 5.14; Strabo 11.13.4, 11.14.15, 14.2.29, 16.1.1, 16.1.21–23, 16.2.3; Pausanias 10.29.4; *Tabula Peutingeriana*, Segment 11.3; cf. Cohen 2006, 190–6; Kennedy 1998a, 157, no. 80, and fig. 9.1.
3. Railway: Dewdney 1971, 204; Schneider 1900, 58–9. For the historical topography of the region, see Archi et al. 1971, 22–3, 31–5.
4. Cf. Ergeç 1998, 81.
5. Pollard (2000, 258) and Kennedy (1998a, 7, 13) credit Cumont, but see Walpole 1851, 269; Lawrence and Woolley 1914, 19–21; Bell 1927, 42; Holmes 1928, map between pages 124 and 125 ("Antony's Parthian Campaign"). Burnaby (1898, 351) puts Zeugma at "Kum Kaleh." For the location of Zeugma, see also Cohen 2006, 194–5; Wagner 1976, 39–70; Tscherikower 1927, 84; Dobiás 1925, 253–68.
6. Pococke (1743–1745, 2:156): "If the river at Romkala was the Singas, Zeugma, according to Ptolemy, was twenty minutes south of it, which agrees very well with the situation of that place. For after I had left Beer, I enquired if there was any place on the Euphrates of that name; and I was informed, that about twelve miles above Beer there was a place called Zima; and asking if there were any signs of a bridge there, I was assured, that, when the water is low, they see on each side of the river, the ruins of a pier, which may possibly be the remains of this bridge." It is significant that the site is known as "Zeuma" in Latin sources of late antiquity: e.g., Kennedy 1998a, nos. 83, 85, 92, 94; cf. Wagner 1976, 65–70.
7. Rennell 1831, 281; cf. Kennedy 1998a, 13.
8. Maps entitled "I: The River Euphrates" and "II: The River Euphrates" use the toponyms "Balkis," "Balkis Tell," and "Balkis Village." At this time Birecik was Port William; cf. map entitled "I: The River Euphrates." Cf. Dillemann 1962, 299; Dussaud 1927, 458–61, 493, 497, 518.
9. For histories of fieldwork at Zeugma, see Acar 2000a, 6–9; Ergeç, Önal, and Wagner 2000, 104–13; Kennedy 1998a, 7–9; cf. Sinclair 1990, 4.152–156.
10. Algaze et al. 1994, 1-96. Apamea and Zeugma are sites 17 and 19, described on pages 33–5; Algaze et al. 1991, 199–208; Lightfoot 1990a, 19–20.
11. Algaze et al. 1994, 34–5, Site 19, 65–66, figs. 30E–G, 31B, 32C, 33.
12. For preliminary reports of excavations, see Kennedy 1993, 127–9.
13. For looting at Zeugma, see Acar 2000b, 42–43; Başgelen 1999, 170–3; Kennedy et al. 1995, 54–6.

14. Kennedy and Freeman 1998, esp. figs. 4.8, 4.12, 4.13.
15. The so-called House of the Dionysus and Ariadne Mosaic, a.k.a. the Ergeç Villa: Ergeç 1998, 80–91, esp. figs. 5.5–5.8; Başgelen 1999, 173–82.
16. For the stamped tiles, see Wagner 2006, 201, fig. 13; 1976, 135–46, fig. 14; Kennedy et al. 1998, 132–5, fig. 8.12.
17. Face-mask helmet: **IR1**. Scale armor: **BR25**, **BR26**. For the bronze Mars, see Nardi and Önal 2003, 68–78.
18. See chapters by Hartmann and Speidel, Scott, and Elton.
19. Algaze et al. 1994, 33, Site 17 (Apamea), figs. 35–7; 1991, 207.
20. Abadie-Reynal et al. 2000, 324, 326; 1999, 334–41, figs. 17, 24–9; 1998, 397–403; 1997, 362–9, figs. 17–21; 1996, 313, 316, fig. 5; Abadie-Reynal and Ergeç 1999, 406; 1997, 413–5, 419–24; cf. Kennedy 1998a, 33–5, fig. 3.6.
21. Ergeç and Önal 1998, 419–43; Başgelen 1999, 188–190.
22. For example, Abadie-Reynal et al. 2001 includes separate sections for activities between April and June 2000 in conjunction with the Gaziantep Museum, when the pavements in question were lifted, and between July and September 2000 under the auspices of The Packard Humanities Institute rescue campaign and conservation project.
23. Across Areas A, B, and C, Oxford Archaeology devised an arbitrary subdivision of the site into narrow zones numbered 1–10: e.g., Early et al. 2003, fig. 2; Abadie-Reynal 2002, fig. 2; Abadie-Reynal et al. 2001, fig. 2.1. These zones are not used in this publication, with the exception of the chapter by Gale.
24. For the topographical configuration of the reservoir anticipated before completion of the project, see Kennedy 1998a, 16.
25. Henceforth, unless otherwise noted, the term "the excavators" refers to Oxford Archaeology and its employees and contractors.
26. For descriptions of standing remains in this area, see Kennedy 1998a; Algaze et al. 1994; Wagner 1976.
27. Andy Millar prepared a brief unpublished report with observations here and elsewhere along the shoreline during the lowering of the water in October 2002.
28. The deep surface deposits of colluvium from Belkis Tepe were often 3–5 m thick, just like those encountered by previous excavators: cf. Kennedy and Bunbury 1998, 27. A note on limits of excavation is pertinent here. Mechanized excavation was used to remove colluvial layers, often several meters deep, across broad zones of interest for excavation with hand tools. The limits of excavation correspond to areas of manual excavation within these zones. For earlier excavation at Zeugma with machines, see Abadie-Reynal et al. 2000, 279, 283, 295.
29. For later salvage in Chantier 5, see Abadie-Reynal et al. 1998, 388.
30. An occasional source of contamination was colluvium that had accumulated in the houses during periodic erosion following the sack and abandonment of this area; cf. Kennedy 1998a, 67. For colluviation and archaeological formation processes, see Schiffer 1987, 250. For Belkis Tepe in particular, see Kennedy and Bunbury 1998, 27 and fig. 2.9.
31. The same processes of destruction and decay are apparent in descriptions of houses found in excavations by the University of Western Australia (Kennedy and Freeman 1998, 61–79) and by the University of Nantes (Chantier 12: Abadie-Reynal et al. 2001, 249; 2000, 291).
32. See discussion in Butcher, volume 3.
33. For example, excavation notes for context 13064: "the rush excavating this room has left gaps for interpretation."
34. Humphrey 2003.
35. David Kennedy directed all work in Trench 1 and the initial work in Trench 2 (also called Trench T) before the beginning of PHI project management by OA on the archaeological site on 24 June 2000.
36. Excavation notebooks record dimensions of contexts in meters and centimeters. Sketches (not to scale) and notes describe relative positions of contexts, but without systematic recording of beginning and ending levels. Most context sheets record date of excavation, but the records show that dates on which context numbers were assigned are not a reliable indicator for reconstructing sequence of excavation.
37. Only several hundred of over 3,000 objects inventoried by OA have fixed points on a coordinate system. For others, context numbers and occasional descriptive text in excavation notebooks provide the only guide to findspot. The situation at Zeugma is not much different from that described for the excavations at Dura-Europos: Gschwind 2007, 614.
38. Other barriers to interpretation include inconsistencies in terminology and recording styles applied by different excavators to records for the same trench (most records are in English, but a fair number are in Turkish).
39. The following information will be useful for those who compare data in this publication with the Unpublished Interim Report prepared by OA or the interim reports in the *Journal of Roman Archaeology*.
40. The artifact catalogues retain the Small Find number (with an SF prefix), if assigned by the excavators, following each alphanumeric catalogue number. The chapter "Context Descriptions" in this volume provides an index to objects in each context. Two objects were recorded without trench designations and do not appear there: SF 235 (ceramic) and SF 2369 (glass).
41. The excavators used the same numbering scheme to label groups of contexts they called Stratigraphic Groups (SGs) and Interpretive Groups (IGs). These were evaluated and abandoned as meaningless because most involved obvious relationships; for example, in some cases blocks along the same wall received a unique number, different from the number assigned to the entire wall.
42. My requests for names and contact information from OA were denied. Study at Birecik in 2003 put me in contact with Philip Freeman (PF), Hugh Elton (HWE), and Andy Millar (AM). I am grateful to these individuals, and to Philippa Walton, for information about the excavations of 2000.
43. The excavators designated 2,561 objects "small find" and another 815 "worked stone."
44. With the exception of **ML8**, **ML62** and **ML67**, objects with the **ML** prefix appear in parentheses after the primary catalogue number assigned by material class, with the prefixes **B**, **BR**, **GD**, and **IR**.
45. For example, see Khamis for **BR1**, **BR11**, and **BR12** (Trench 9), and Rose for **SS5** and **SS6** (Trench 11).
46. Butcher also mentions three other possible hoards from Trench 9, each confined to its own context (9197, 9073, 9076). For a hoard of 106 bronze coins from Chantier 5, see Abadie-Reynal et al. 1998, 388. For a small hoard of bronze coins of Zeugma and Antioch (findspot unknown) dated to Philip I or II, Butcher 2004, 281.
47. For frameworks based on historical sources, see, e.g., Kennedy 1998a, 11–13.
48. Maricq 1958, 295–360; Kennedy 1998a, 155 (no. 69); cf. Dodgeon and Lieu 1991, 34–67; Balty 1988, 102–4; Millar 1981, 218; Downey 1961, 588–9 with sources for translations in note 4; Olmstead 1942, 403–410, esp. 408–9. For the relief, see Herrmann 2000, 35–45, esp. 39–40; Hinz 1969, 178–82, Taf. 105–10, 112; Ghirshman 1962, 151–60, figs. 195–206.
49. See discussion in Butcher, volume 3. The second-style coins cannot be dated more precisely than Gallus's second consulship, and the purpose of the radiates is unknown; cf. Balty 1988, 103.

50. For problems with the primary sources for Gallus's dates, see Peachin 1990, 35–7, 69–74.
51. Environmental samples collected from the sack layer (context 2016) revealed walnuts stored in a pithos (**PT452**). Challinor and de Moulins (volume 3) point to the possibility of recently harvested walnuts as evidence for an autumn sack. Alas, such evidence, even if a possible indicator of season, does not point to a specific year. Balty (1988, 103–4) proposed a sack in spring A.D. 252.
52. Primary sources are collected in Kennedy 1998a, 139–62; cf. Cohen 2006, 190–6.
53. Kennedy 1998a, 54–57 (and table 3.1), 237; Algaze et al. 1994, 34–5, Site 19, fig. 18; Grainger 1990, 24–8, 43 n. 67; cf. Cohen 2006, 191; Wilkinson 1990, 114–7; Clarke 1999, 638–40. Around Zeugma, and especially toward Carchemish, there are a number of sites with clear evidence for Ubaid, Uruk, and Bronze Age settlement: Algaze et al. 1994, 10–18, 33–5, Sites 18 and 19(O), and figs. 26C, 33O for early EBA pottery found near Zeugma. For Bronze Age and Iron Age finds from the region in the collection of the Gaziantep Museum, see Başgelen 1999, 87–111. Başgelen and Ergeç (2000, 39) mention over 300 Bronze Age graves found in 1997 in the area of the later wall for the Birecik Dam.
54. The archaeological museums at Gaziantep and Urfa have numerous Hittite stelae from the region: e.g., Başgelen 1999, 102–7, nos. 16–21; Temizsoy 1989, figs. 51–8.
55. For Seleucus I Nicator, see Pliny *HN* 5.21 (86–7); Appian *Syr*. 11.9; cf. Jones 1971, 216–9, 244–6. Zeugma was one of five cities founded by Seleucus I Nicator upon his acquisition of Syria from the Antigonids in 300 B.C., but the city quickly slipped from the ranks of its peers, especially Antioch, which may explain the lack of evidence for activity at Zeugma between early Seleucid and Commagenian times at Zeugma: cf. Kennedy 1998a, 11; Tate 1997, 57, 60; Grainger 1990, 53, 128–9; Jones 1971, 220. In contrast, at another foundation, Seleucia-on-the-Tigris, evidence for a mint and abundant bullae indicate a royal administrative center; cf. Kuhrt 1996, 44–6. For the overall lack of evidence for settlement in Seleucid Syria, see Bowersock 1989, 64–5; Downey 1993, 581; 1992, 380.
56. Jones 1971, 246: "It is very difficult to say what all this colonization amounted to in reality . . . and to say how many of these foundations were genuine cities, possessing autonomy and a territory." Many colonies "dropped their dynastic names with suspicious rapidity." Thessalian settlers are known for Larissa, but for Seleucia and Apamea we know nothing about the number or identity of the colonists.
57. For the date of ESA and BSP pottery, see Slane 1997, 269–71; Cornell 1997, 407–9.
58. For a residual third-century B.C. fishplate in Chantier 5, see Abadie-Reynal et al. 1998, 388.
59. Commagene: Gordon 2007, 604; Wagner 2000; 1976; Facella 2005, 225–50; Sullivan 1990, 59–62; Sullivan 1977, 732–68; Jones 1971, 265–6; Dörner 1967, 4–97; French 1991, 11–9. For sculpture depicting King Antiochus I of Commagene in the Gaziantep Museum, see Wagner 2000, 16–17, abb. 21–22, 63; Başgelen 1999, 116–7 nos. 38–39; Temizsoy 1989, fig. 80. Antiochus III and Laodice: Polybius 5.43.1, 3–4; Macurdy 1932, 92. Tigranes: Strabo 16.2.3.
60. In Chantier 5 and Chantier 9: Abadie-Reynal and Ergeç 1999, 404; Abadie-Reynal et al. 2000, 317; 1998, 383, 389; Abadie-Reynal 2003a, 367. For comparison, other Hellenistic sites on the Euphrates, like Arsameia (Dörner and Goell 1963, 234–9, 282–3) or Aşvan Kale (Mitchell 1980, 37) begin much earlier. At Ephesos, Hanghaus 1 begins at about 200 B.C. (Lang-Auinger 2003, 334).
61. Strabo 16.2.3; App. *Mith*. 16.114, where Zeugma is the only city called out by name (Seleukeia) among those in the territory of Mesopotamia conquered by Pompey and handed over to Antiochus I of Commagene: Wagner 1976, 37 n. 85; cf. Cohen 2006, 30–2, 193; Jones 1971, 217, 219. For Pompey on the Euphrates, see Pelling 1996, 31–2; Kallet-Marx 1995, 294, 312, 324; Sullivan 1990, 97–105; Sherwin-White 1984, 186–234; Mitchell 1980, 10–12; Seager 1979, 44–55. The garrison Pompey left behind was made up of two legions: cf. Sherwin-White 1984, 208, 225. In 54 B.C. Rome revoked Pompey's grant of Zeugma to Antiochus I of Commagene: Cicero *QFr*. 2.12.2 (Feb. 13, 54 B.C.); cf. Kennedy 1998a, 141, no. 9; Syme 1995, 95, 101.
62. The stele is described by Crowther (2003, 57–67) and Crowther and Facella (2003). Another basalt stele of the Commagenian ruler cult was discovered by Wagner 1976, 39–64; Grainger 1990, 195; Shackleton Bailey 1980, 192. Excavations at Zeugma by the Gaziantep Museum in 2004/2005 allegedly discovered an inscribed stele with a depiction of Herakles and Antiochus I from the immediate vicinity of Trench 15.
63. For Antiochus of Commagene: Strabo 16.2.3; Appian *Mith*. 114; Cicero (as *rex*) *QFr*. 2.12.2; Sullivan 1990, 193–7; Sherwin-White 1984, 227. For Antiochus' troubled relationship with Rome, see Sullivan 1990, 195–6; Sherwin-White 1984, 306 (e.g., Antiochus harboring Parthians in 51 B.C. and in 40–38 B.C.).
64. Sullivan 1990, 196–7.
65. For Crassus at Zeugma: Cassius Dio 40.20; Plutarch *Crass*. 20–22; Strabo 16.1.21–23; Pliny *HN* 5.21 (86); Florus 1.46.2–3; Appian, *B Civ*. 2.18; cf. Stoneman 1992, 82–5; Sullivan 1990, 306–8; Braund 1984, 96–7; Sherwin-White 1984, 279–90, esp. 288; Segal 1970, 1–12; Colledge 1967, 37–43; Stark 1966, 113–23; Dillemann 1962, 183; Debevoise 1938, 83. A visit by Antony is also likely: cf. Colledge 1967, 44; Stark 1966, 124; Debevoise 1938, 124–5.
66. See discussion in Kenrick, Ceramic Group B, in volume 2.
67. See the description by Rose in this volume.
68. For the siege of Samosata, defended by Antiochus against Ventidius and Antony, see Sherwin-White 1984, 306 and note 24 with primary sources; cf. Kennedy 1998a, 17. For the death of Antiochus, see Plutarch *Antony* 61.2.
69. For the annexation of Commagene by Rome in A.D. 17 by Tiberius, see Cassius Dio 49.20.4; cf. Kennedy 1996a, 729–30. Commagenian clients were removed; the dynasty was restored temporarily in A.D. 38: Strabo 16.2.3; Kennedy 1998a, 140 no. 7. For coins of Commagene from Tiberius to Caligula, see Facella 2005, 236–9. For towns across the Euphrates near Zeugma annexed by Rome in the first century A.D., see Philostratus *VA* 1.37.
70. For the fragment found in 1998 in Chantier 9, see Yon in Abadie-Reynal et al. 1999, 333.
71. Gifts: Cicero *QFr*. 2.10.2. For the significance of the *toga praetexta*, see Braund 1984, 36 n. 50, 42–3. Warning about Parthians (before other regional informants): Cicero *Fam*. 15.1. Cicero's suspicions about the king's loyalty turned out to be wrong: cf. Braund 1984, 96–7.
72. Cf. Braund 1984, 42–3, 50 nn. 25–7. The earlier date is consistent with gifts of Roman citizenship to eastern royalty in the neighborhood of Commagene as early as Caesar's grants in 47 B.C. to Antipater of Judaea and, probably, Iamblichus I of Emesa. The former dynasty spawned Roman citizen kings who ruled in Armenia and Cilicia in Julio-Claudian and Flavian times, respectively (Braund 1984, 44). The kings of Osrhoene were citizens at least by the time of Commodus, but the original grant probably came earlier: Braund 1984, 43–4, 119 n. 61, 121 n. 94 (on Cassius Dio 77.12.1a).
73. Execution of Antiochus II: Cassius Dio 52.43.1; cf. Bowersock 1965, 57–8. Appointment of Mithradates III: Cassius Dio 54.9.3; cf. Braund 1984, 43. Tiberian annexation: Cassius Dio 49.20.4.
74. Antiochus III: Ephesos (*OGIS* 405); Athens (*OGIS* 406), where the king in question is possibly Antiochus I; cf. Braund 1984, 43, 78, 86 n. 23. Charge of conspiracy against, exile, and restoration

of Antiochus IV: Josephus *BJ* 7.220–1; cf. Braund 1984, 42, 46 n. 3, 97, 171, 173, 184. Euergetism of Antiochus IV: Chios, SEG xvii (1966) 381; cf. Braund 1984, 79, 87 n. 40.

75. Foundations: Braund 1984, 108; Jones 1971, 205, 211. Games: Braund 1984, 49 n. 22, 114. Bandits: Tacitus *Annales* 12.55. For Antiochus IV and Rome: Braund 1984, 162 n. 79.
76. For the civic era of Zeugma, see Butcher 2009, 81–3.
77. This date is consistent with the foundation date of the House of the Dionysus and Ariadne Mosaic from the same part of the site: Kennedy 1998a, 38. Abadie-Reynal (2006, 3) dates the emergence of the Roman courtyard house at Zeugma to the first century A.D.
78. From the so-called Villa of Poseidon, a large courtyard house closer to the river excavated in 1999, the date of a deposit sealed beneath a mosaic pavement is consistent with a foundation date for housing on the east side of the city no earlier than the second half of the first century A.D.: Gschwind 2003, 321–59, esp. 348; Önal 2003, 317–9.
79. For the arrival of the legion at Zeugma, see M.A. Speidel 1998, 163–204; Hartmann and Speidel, volume 3; Hartmann et al. 2003, 101–3; Speidel 1998, 166–70; Kennedy 1998a, 133–7, fig. 8.12 and table 8.1; 1983; Devijver 1998, 205–232; Millar 1993, 75, 83, Isaac 1992, 38, 41, who suggests A.D. 18; Dąbrowa 1986, 93–108, esp. 98; Keppie 1986, 411–29; Wagner 1976; 1977, 517–39; Debevoise 1938, 181, 186–9, 192, 199, 220, 264, who suggests that Cn. Domitius Corbulo fortified Zeugma in A.D. 66; Ritterling 1925, 1556–64; McElderry 1909, 47–53. For the legions around Zeugma at the time of Vespasian, see Williams 1996, 35. For the Flavian conquest of Commagene, see Josephus *BJ* 5.1.6, 7.1.3.
80. Hellenistic rock-cut graves were found beneath the Roman house in Trench 6: Abadie-Reynal 2003a, 367; Abadie-Reynal et al. 2001, 258, 297, 301, figs. 2.57, 2.58, 2.59; 2000, 323. Compare the rock-cut graves on the river frontage at the Hellenistic city of Jebel Khalid on the Euphrates (Clarke et al. 2002, vii).
81. Coins of Nerva (**C112**) and Trajan (**C131**) belonged to a floor deposit (context 2186) in neighboring Room 2C that also had intrusive material (**L163**).
82. For Trajan in Parthia, see Speidel 1998, 169–70; Lightfoot 1990b, 115–26; Lepper and Frere 1988, 58; Millar 1981, 117; Angeli Bertinelli 1976, 5–22; Colledge 1967, 53–6; Stark 1966, 208–16; Dillemann 1962, 271–86; Lepper 1948, esp. 116–8, 122, 131–5, 141–8, 206; Henderson 1949, esp. 125–6; Debevoise 1938, 227–9.
83. Lightfoot 1990b, 115, 117; Lepper 1948, 130–5.
84. Lightfoot 1990b, 118.
85. For supply lines of manpower, food, and resources from Pamphylia to the Roman army waging war in the East in the third century, see Mitchell 1995, 212.
86. It is also worth mentioning the possibility of building in the wake of earthquake destruction, as is known for Apamea-on-the-Orontes after the devastating earthquake of December A.D. 115, although the evidence for this at Zeugma is lacking: Balty and Van Rengen 1993, 7–9; cf. Kennedy 1998a, 29 and fig. 2.11 for a map showing epicenters of recent earthquakes around Zeugma.
87. A further measure of Zeugma's influence at this time is perhaps reflected in an honorific dedication at Pergamon for C. Julius Quadratus Bassus, a commander for *legio IIII Scythica* under Trajan: Kennedy 1998a, 149–50, no. 42; cf. Millar 1993, 260. It is also worth noting the legacy of Zeugma's royal past reflected on the roughly contemporary Philopappus monument at Athens, where inscriptions celebrate Seleucus I Nicator and Antiochus of Commagene as ancestors: Vermeule 1968, 82.
88. The name or title of a specific official is not preserved. For building inscriptions and military and civilian government in Syria and Arabia, see Grainger 1995, 179–95.
89. This is consistent with the dating for houses found nearby: the Kennedy excavations of 1993 (Kennedy and Freeman 1998, 71); the House of the Dionysus and Ariadne Mosaic (Ergeç 1998, 89); houses in Chantier 9 and Chantier 12 (Abadie-Reynal et al. 2001, 243–56; 2000, 285, 289, 291, 321); houses in Trench 6 (Abadie-Reynal et al. 2001, 269–70).
90. Butcher 2004, 460–5; 1998, 233–6; and volume 3. Coins of Elagabalus and Philip I were probably struck at Antioch for Zeugma. For the debate about minting by cities in the Roman East in response to the movement of the Roman army in the third century A.D., see Elton 2005, 297–300; Mitchell 1995, 212–5; cf. Butcher 2004, 4.
91. On behalf of Lucius Verus, Avidius Cassius crossed into Mesopotamia in the 160s, probably at Zeugma, annexed northern Mesopotamia in A.D. 161, defeated Volagases near Dura-Europos in A.D. 163, and installed Mannus as king of Osrhoene; cf. Speidel 1998, 170, 172; Braund 1984, 51 n. 36; Angeli Bertinelli 1976, 23–31. For Septimius Severus on the Euphrates frontier, see Birley 1988, 68–9, 115, 129–34; Speidel 1998, 172–5; Angeli Bertinelli 1976, 32–41; cf. Williams 1996, 186. For Gordian III and the Battle of Rhesaena in A.D. 243, see Ammianus Marcellinus 23.5.17.
92. See the chapter by Ian Scott on the military objects, volume 3; cf. Hartmann and Speidel, volume 3. The entire legion appears to have been present at Zeugma up to the time of the reorganization of the frontier by Septimius Severus, after which time some, but not all, of the legion was moved away: Kennedy 1998a, 239; Speidel 1998, 175–6.
93. Önal 2000, 30–34. Excavations in Trench 8 were directed by Yusuf Yavaş for the Gaziantep Museum. For the bronze Mars, see Nardi and Önal 2003, 68–78. Excavations in Trench 3 were directed by Mehmet Önal for the Gaziantep Museum. For the sealings, see Başgelen and Ergeç 2000, 39; GAP-RDA 2001, 80–3. This destruction layer was also found in the house at Site D (Kennedy and Freeman 1998, 71), in the House of the Dionysus and Ariadne Mosaic (Ergeç 1998, 87), and in Chantiers 9 and 12 (Abadie-Reynal et al. 2000, 291, 321).
94. Cf. Butcher 2003, 115. Nor was Dura ever reinhabited: Ammianus Marcellinus 23.5.8.
95. Butcher 2004, 3.
96. See the chapter by Reynolds in volume 2; cf. Abadie-Reynal 2004, 15–21, for hesitant remarks about contact with the Mediterranean attested by transport amphorae from Zeugma.
97. See comments on **M23** by Dunbabin in this volume.
98. See the chapter by Dunbabin in this volume. Compare the geometric pavements from Trench 13 (**M26** and "Appendix") with those from the House of the Dionysus and Ariadne Mosaic: Campbell et al. 1998, figs. 7.12–7.15. A Severan date has been assigned to the Daedalus pavement from Chantier 12, found sealed beneath the Sasanian-sack layer: Abadie-Reynal et al. 2000, 290–291. Wagner (1976, 102–105) assigned mosaics at Zeugma to the first part of the third century A.D. Precise lines between Severan, late Severan, and post-Severan are impossible to draw for a city as vast as Zeugma given the relatively small corpus of pavements available for study. Any attempt to establish workshop groups or chronological relationships can only come with proper publication and analysis of mosaics from the entire site.
99. Levi 1947; Kondoleon 2000, 63–78.
100. Abadie-Reynal et al. 2005, 363; 2001, 270; 1999, 313, 317, 319, 322, 331; 1998, 395; cf. Jones 1971, 268–70.
101. For the same situation in Chantier 12, see Abadie-Reynal et al. 2000, 291.
102. An exception to this theme at Zeugma is an isolated construction context (10034) in Trench 10 with a coin of A.D. 364–375 (**C208**) for the latest datable material. For other excavations at Zeugma, see Abadie-Reynal et al. 2007 (for a stratified fourth-century deposit); 1998, 382, 388 (for a possible fourth-century

cook pot and a coin of an unnamed fourth-century emperor from Chantier 5). For a few fifth-century coins found near the At Meydani plateau, see Hartmann and Speidel, volume 3.

103. For the transport amphorae and lamps, see the chapters by Reynolds and Hawari in volume 2; cf. Jackson (2002b, 147–8) for problems with the study and publication of lamps from the Greek and Roman East. For other lamps from Zeugma, see Gschwind 2003, 352–4, cat. 4–34. For ceramic evidence consistent with a break in occupation at Zeugma after the Sasanian destruction, the reemergence of settlement not before the fourth century A.D., and increased activity in the sixth century, see Gschwind 2006, 62; Martz 2007.
104. For the geological circumstances of the erosion on the slopes below Belkis Tepe, see Kennedy and Bunbury 1998, 27, fig. 2.9; cf. Wilkinson et al. (2007, 220–1, 224) for colluvial deposits on the west bank of the Euphrates. For contemporary construction dated by Phocaean Red Slip and African Red Slip Ware in Chantier 9, see Abadie-Reynal et al. 1998, 389.
105. For similar evidence from the House in Trench 6, see Abadie-Reynal et al. 2001, 270.
106. For the coins, see table 6. For the lamps, see Hawari, in volume 2.
107. Edessa: Segal 1970, esp. 110–91; Hendy 1985, 174–5, 261 (for the city's affluence in the fifth and sixth centuries).
108. Greatrex 1998, 108–13, 193–200.
109. Procopius *Aed.* 2.9–11; cf. Kennedy 1998a, 242; Abadie-Reynal et al. 1997, 349, 351; 1996, 311, 313. These walls, like the walls of many other Justinianic cities alleged by Procopius but never actually built, should be approached with skepticism; cf. Whitby 1986, 717–35.
110. Procopius *Aed.* 2.8.4–7.
111. Cf. Kennedy 1998a, 11–2, 157–60 (nos. 83, 84, 85, 91, 92, 96), 242.
112. For the affluence of northern Syria at this time, see Algaze et al. 1991, 205–6, 233.
113. For Abbasid pottery in Chantier 9, see Abadie-Reynal et al. 1998, 389. For a ninth- to tenth-century phase in Chantier 10, see Abadie-Reynal et al. 1999, 326.
114. See Kennedy's suggestion for the location of the late Roman town (1998a, 242). In a preliminary report of research in 1997, Abadie-Reynal et al. (1998, 388, 389) postulate the existence of limekilns in Chantier 5 and Chantier 9 and eighth- and 12th-century destructions in Chantier 8.
115. Algaze et al. 1994, 35, Site 19 (Y), fig. 33 (Y); Wilkinson et al. 2007, 235, 244.
116. For the castle at Birecik, see Boase 1967, 82; Grainger 1990, 25, 76–7, 199; Sinclair 1990, 4.157–60. For recent archaeological survey in and around Birecik, see Başgelen 2002.
117. Kennedy 1998a, no. 113 (Michael the Syrian, *Chron*. 15.1).
118. Early et al. 2003; Acar 2000b; Başgelen 2000.
119. For quarries near Zeugma, including some on the banks of the Euphrates about 7 km north of Zeugma, presumably a source for building stone conveyed on rafts to Zeugma, see Kennedy 1998, 20 (fig. 2.1), 57–9, 131–2; Kennedy and Bunbury 1998, 27–29. The stone is a white to pale-brown Tertiary limestone and marl exposed along the broad trench cut by the channel of the Euphrates River: Wilkinson et al. 2007, 220.
120. Speidel 1998, 168.
121. Cf. Kennedy 1998a, 130–1, fig. 8.3. For building materials and techniques in the cities of Roman Syria, see Butcher 2003, 174–8. Solid ashlar construction in limestone was also used in the Governor's Palace of the third century B.C. at Jebel Khalid: Clarke et al. 2002, pl. 3–10, 17–8, 21.
122. See the chapters in this volume by Rous and Aylward, and by Tobin.
123. Cf. Butcher 2003, 183, 205–6; Dodge 1990, 109.
124. Cf. Kennedy 1998, 131–2, nos. 1, 2, 6, figs 8.3, 8.9; Abadie-Reynal et al. 2001, 284, fig. 2.34. For mosaic tesserae as a local product, see Ergeç 1998, 88 n. 3. For a small marble paving slab at the Hellenistic Governor's Palace at Jebel Khalid on the Euphrates, see Clarke et al. 2002, 36.
125. Not seen by the author. Trenches 5 and 11: see description in Tobin, this volume. A few other fragments of worked marble were inventoried by the excavators: SF3711 (Trench 12), SF1046 (Trench 1), and SF 2077 and SF 2171 (Trench 2). Evidence for opus sectile and revetment in colored marble is mentioned in a page of handwritten notes prepared for the excavators by Janet DeLaine, compiled during a brief site visit in September 2000. A possible revetment clamp was found in Trench 2, but without corresponding evidence for revetment (**BR162**). Abadie-Reynal et al. (1998, 395) mentions marble revetment in a post-sack context in Chantier 8. The "bulk finds" category in the context descriptions in the chapter by Aylward notes the existence of small uninventoried fragments of marble from the rescue campaign of 2000. In the unpublished Interim Report the small objects in marble are attested for Trench 8, managed by the Gaziantep Museum in the rescue excavations of 2000.
126. Abadie-Reynal et al. 2001, 284, fig. 2.31. The Adana Museum has a near life-size white marble statue of Aphrodite (Frejus type) that may have come from Zeugma, but the specific findspot is apparently unknown: Wagner 1976, 129, taf. 20b.
127. Ward-Perkins 1992, 31 n. 2.
128. For rare examples of sarcophagi at Zeugma, see Kennedy 1998, 52; Abadie-Reynal et al. 2000, 309, fig. 54 (for a marble sarcophagus in tomb W10 on the Bahçe Dere); cf. Temizsoy (1989, fig. 92) for a limestone sarcophagus with relief decoration from Karacurun.
129. See the chapters in this volume by Bergmann and Tobin. For imitation marble painting in Chantier 12 and Trench 6, also destroyed in the Sasanian sack of A.D. 252/253, see Abadie-Reynal et al. 2001, 258, 261.
130. For examples in the so-called Governor's Palace at Jebel Khalid, which went out of use early in the first century B.C., see Clarke et al. 2002, 43, fig. 14. For Samosata, see Zoroğlu 2000, 81, figs. 111, 113.
131. Fort AS 190 north of Antioch on the Kara Su: De Giorgi 2007, 290, fig. 1.
132. Butcher 2003, 194.
133. Prior to A.D. 252/253, brickwork also appears at the mouth of a cistern in the House of the Dionysus and Ariadne Mosaic: Ergeç 1998, 87. Repairs, including fired brick, to the large drain under Chantier 9 may also belong to this time, but they are difficult to date (Abadie-Reynal et al. 1998, 392).
134. Chantier 10: Abadie-Reynal et al. 1999, 327, 329, 331, figs. 13, 14. Brick-and-mortar ruin: Algaze et al. 1994, 34, Site 19 (B), fig. 33. A brick construction is also mentioned for Chantier 11 (Abadie-Reynal et al. 1999, 332–3, fig. 16) and a brick floor for Trench 14 (Abadie-Reynal et al. 2001, 292, fig. 2.43). For another example (undated), see Algaze et al. 1994, 34–5, Site 19 (A).
135. Algaze et al. 1994, 34–5, Site 19 (H); Kennedy 1998a, 37, fig. 3.9.
136. Necropoleis at Zeugma: Abadie-Reynal et al. 2001, 292–302, figs. 2.48–2.68; 2000, 292–312; Kennedy 1998a, 31–3, 41–53, figs. 3.2, 3.11–3.29; Kennedy and Bunbury 1998, 27; Wagner 1976; Sinclair 1990, 4.154–6.
137. Kennedy 1998a, 33. Algaze et al. (1994, 19) give a combined estimate of 130 ha; cf. Algaze et al. 1991, 206. For urban population density and the size of fortified circuits in Roman Syria, see Kennedy 2006a, 109–24, esp. 117–9; Grainger 1990, 94–100; Will 1989, 223–50; Downey 1992, 380. For estimates on the population of cities in Roman Syria, see Kennedy 1996a, 708; Downey 1961, 582–3; Liebeschuetz 1972, 92–100.
138. Kennedy 1998a, 30–3, fig. 3.2. The north slope of Belkis Tepe was probably too steep for buildings and perhaps used for or-

chards. For the trapezoidal shape, see Algaze et al. 1994, 34, Site 19 (Zeugma).

139. Comfort et al. (2000, 102) refer to "large public buildings, which have only recently been partly uncovered," but it is not clear which public buildings are meant. Sinclair's brief discussion of "civilian buildings" is equally obscure (1990, 4.154).
140. Narrow dead-end alleys, like the one in Trench 2, probably added to the complexity of navigation through the city streets in residential parts of town.
141. Abadie-Reynal et al. 2001, 275–86, where a connection to public buildings is suggested on page 284. Sixteen steps were preserved, each with substantial wear on the treads; 3.2 m wide over a length of almost 6 m; cf. GAP-RDA 2001, 163. Signs of another stepped street were found near the House of the Dionysus and Ariadne Mosaic: Ergeç 1998, 87.
142. For rock-cut terracing at Zeugma, see Abadie-Reynal et al 1998, 381. The large rock-cut tomb chambers below the southeast slope of Belkis Tepe reveal the expert facility with which builders manipulated the soft bedrock at Zeugma to meet their designs: cf. Kennedy 1998a, figs. 3.14, 3.18–3.20, 3.22–3.26.
143. Abadie-Reynal 2003a, 366; Kennedy 1998a, 33–4, fig. 3.5; Algaze et al. 1994, 34–35, Site 19 (G, M, N, P, S, Q); Algaze et al. 1991, 206.
144. Wagner 1976, 94–6, Karte II, points 11, 12, and 13; Kennedy and Bunbury 1998, 25; Abadie-Reynal et al. 1997, 349, 351; 1996, 311, 313; cf. Abadie-Reynal 2003a, 366; Sinclair 1990, 4.154.
145. Samosata: Zoroğlu 2000, 76, fig. 102; Sinclair 1990, 4.144–8. Zenobia: Butcher 2003, fig. 117. For the general absence of fortifications on the west bank of the middle Euphrates, see Comfort and Ergeç 2001, 33.
146. Kennedy 1998a, 33–4, 37, fig, 3.3; Algaze 1994, 33, 34, Sites 17 and 19 (F); Algaze et al. 1991, 206.
147. For the excavations, see Abadie-Reynal et al. 2005; cf. Yıldırım and Gates 2007, 334. For the location, see Kennedy 1998a, 53, fig. 3.30; Algaze et al. 1994, 34–5, Site 19 (D).
148. E.g., Kennedy 1998a, 37, 53, figs. 3.2, 3.8.
149. Abadie-Reynal et al. 2000, 323 (discovered by the Gaziantep Museum).
150. For the bath building at the wall of the Birecik Dam, see Kennedy 1998a, 31 n. 3, 53; Başgelen and Ergeç 2000, 32–3; Ergeç and Önal 1998, 419–43; Başgelen 1999, 188–90; cf. Hartmann and Speidel, volume 3, for the possible Roman bath and latrine discovered in 2003 on the north side of the At Meydani plateau, near the Bahçe Dere. The ZIG bath building, discovered in 2000 on the northwest side of Trench 10, is unpublished. Sinclair (1990, 4.154) mentions a bath with a hypocaust partially exposed below the northeast slope of Belkis Tepe. Kennedy (1998a, 37, fig. 3.2, 3.8, 3.9) suggests a bath or monumental arch for ruins of mortared rubble on the north side of Belkis Tepe (Plate 1); cf. Algaze et al. 1994, 34–5, Site 19 (H). A monumental arch would have a meaningful comparandum in Trajan's triumphal arch at Dura-Europos; cf. Lepper 1948, 123–5.
151. See the chapter by Hartmann and Speidel in volume 3.
152. Kennedy 1998a, 53, fig. 3.30; Algaze et al. 1994, 34, Site 19 (D); Algaze et al. 1991, 206, figs. 33–4. For the absence of theaters in Hellenistic Syria, see Millar 1987a, 117–8.
153. See Frézouls (1989, 385–406) for the apparent absence of theaters in Hellenistic Syria. For the absence of a theater at Palmyra due to weak Graeco-Roman influence (not a factor for Zeugma, but regionally significant), see Rostovtzeff 1932, 130.
154. Kennedy 1998a, 151–2, nos. 47 and 55; cf. Millar 1993, 259. For beasts in games at Zeugma, see Kennedy 1998a, 242. For the gladiator graffiti at Zeugma, see the chapter by Benefiel and Coleman in this volume. For a graffito with gladiators at Dura, see Rostovtzeff 1932, 200.
155. But houses on the riverbanks must have been subjected to periodic flooding, based on Justinianic-period accounts of devastating floods from torrents swollen by heavy rains at Edessa and Antioch: Hendy 1985, 63–5 (on Procopius *Aed.*), with primary and secondary sources.
156. For irregular sloping topography as a limitation to orthogonal planning, see Kennedy and Bunbury 1998, 29. Kennedy (1998, 241) has suggested elite housing higher on the slope, away from noise, river traffic, and danger of flooding.
157. For the Graeco-Roman orthogonal town plan at Dura-Europos, situated on a plateau stretching back from bluffs overlooking the Euphrates, see Rostovtzeff 1932, 177.
158. For a description of this house, see the chapter by Tobin, this volume. A noteworthy parallel is the House of the Consoles at Apamea-on-the-Orontes; see Balty 1984, 471–506, figs. 1–5.
159. Balty 1984, 471–506; Abadie-Reynal 2006, 1. The largest known house at Zeugma, the so-called Villa of Poseidon (not really a villa per se, but an elaborate courtyard house), has an estimated area of 1,000 m^2.
160. Rock-cut niches in these rooms probably held lamps for lighting: e.g., the niche in the House of the Tunnel in Trench 13 (see Tobin, this volume) and soot preserved in niches in Room 10 of the House of the Dionysus and Ariadne Mosaic (Ergeç 1998, 87). For storage of food against rock-cut walls in houses at Ephesos, see Lang-Auinger 2003, 334.
161. See Tobin's description of Trench 18 in her chapter in this volume; Abadie-Reynal et al. 1999, 323–6, figs. 10–12.
162. See Abadie-Reynal (2006, 2) for the suggestion that this house type at Zeugma had its origins in the Greek *pastas*-type house.
163. Balty 1984, 471–506. For examples from late Hellenistic and early Roman Beirut, see Perring 2003, 205–8.
164. Tuscan order: House of the Helmets (Plate 26A), and a courtyard in the so-called Villa of Euphrates (Wagner 2000, abb. 166). Corinthian order: Başgelen and Ergeç 2000, 41 (from the so-called Villa of Poseidon). Column shafts with spiral fluting were also apparently used for some colonnaded courts prior to the sack of A.D. 252/253; cf. Başgelen and Ergeç 2000, 45. Ergeç (1998, 86, fig. 5.8) identified capitals of the Doric order on column shafts with bases and cannellated fluting in the courtyard of the House of the Dionysus and Ariadne Mosaic at Zeugma. Column shafts with cannellated flutes and Tuscan-style capitals appear in the architectural backdrop of the Achilles on Scyros mosaic from the Villa of Poseidon: Önal 2002, 22–3; Başgelen and Ergeç 2000, 44. For permutations of the Greek orders in Mesopotamia, see Kose 1996.
165. See the chapter by Rous and Aylward in this volume.
166. For the houses in Trenches 6 and 8, see Early et al. 2003, 51–5; Abadie-Reynal et al. 2003, 79–99.
167. Summarized by Kennedy 1998a, 38–9.
168. Kennedy and Freeman 1998, 61–79; Ergeç 1998, 80–91; 1996, 357–69; 1993, 321–37.
169. Tobin, in this volume, calls this pier-and-panel masonry. For comparanda from Beirut, see Perring 2003, 203–4, 208 (where the term *opus africanum* is applied, despite the absence of the compact framework appearance that distinguishes that style in Campania and North Africa). For comparanda from late antique Apamea-on-the-Orontes: Balty and Balty 1972, pl. 74.2; Donnay-Rocmans and Donnay 1984, pl. 58.1.
170. The timber is *Pinus*: see the chapter by Gale in volume 3. For *Pinus* species used for timber roofs of the Hellenistic Governor's Palace at Jebel Khalid on the Euphrates, see Clarke et al. 2002, 30; Clarke 2001, 224, fig. 20.
171. See the chapter "Context Descriptions," this volume, for the presence of lead in the destruction contexts.
172. Cf. Dussart 2006, 53. For ancient window glass in Anatolia, see Lauwers et al. 2007, 42; Lightfoot et al. 2003, 287 with sources in note 34. For ancient window glass in general, see von Saldern 2004, 200–2; 1980, 2, 4, 9, 35, 91–2, 101, nos. 680–99, 780, pl.

16; Baatz 1991, 4–13; Whitehouse 2001, 31–43; Engle 1987, 79–90; Boon 1966, 41–5.

173. A number of other well-preserved window grilles were found in Trench 8; cf. GAP-RDA 2001, 164. For Roman window grilles, see Webster 1959, 10–14, pl. 4; Waldbaum 1983, cat. 263. For an example from late antique Apamea-on-the-Orontes, see Donnay-Rocmans and Donnay 1984, 159, fig. 4.
174. Tate 1997, 65–6; 1992, 15–64, esp. figs. 87, 91; Sodini and Tate 1984, 377–429; cf. Abadie-Reynal 2006, 1–7.
175. Perkins 1973, 21–3. Compare the modern houses that Rostovtzeff (1932, 162–3) witnessed around Dura-Europos: "Here the houses are of the usual four-cornered type, built partly in stone but chiefly in unbaked brick. Their ceilings are of thin tamarisk trunks gathered from the shores of the Euphrates or of palm trees brought from Mesopotamia, and the roofs are made of mud."
176. Kennedy 1998a, 39.
177. Cf. Kennedy 1998a, 39; Abadie-Reynal et al. 2000, 290.
178. See chapters by Dunbabin and Bergmann in this volume; cf. Barbet 2006, 19. It is conceivable that these developments were a consequence of a widening gap between rich and poor at Zeugma, but independent evidence to support this notion is scarce. For this phenomenon at Ostia, see Perring 1991, 284.
179. Önal 2002, 32–3, 60–1; cf. Abadie-Reynal (2002, 769) for the suggestion that the signatures belong to different mosaicists, or are perhaps both copied from works of a famous painter.
180. Orthonobazus: Rostovtzeff 1932, 191.
181. Achilles and Perseus: Önal 2002, 22–6, 38–40. Penelope and Deidameia: Abadie-Reynal et al. 2001, 303. For the pavement with Daedalus, Icarus, and Pasiphae, perhaps a scene from the *Cretans* of Euripides, see Abadie-Reynal et al. 2001, 243–7, 303; 2000, 290, figs. 7, 12; Başgelen and Ergeç 2000, 40–1.
182. Abadie-Reynal et al. 1998, 392, fig. 15; Abadie-Reynal and Ergeç 1999, 405, fig. 8. Some of the access shafts were sealed by a Roman pavement installed prior to the Sasanian sack.
183. Dunbabin 2003, 443–68; Barbet 2006, 19–23. The Zeugma example attests to this motif in the Roman East prior to A.D. 252/253.
184. Kennedy 1998a, 39–40, figs. 3.11, 3.12; Abadie-Reynal 2006, 4; Comfort 2006, 38. For the Bahçe Dere, see Kennedy 1998a, 21, 39. In 2002 I was told of a large ancient water conduit oriented toward Zeugma, made of mortared rubble and tile, exposed and severed about 5 km south of the archaeological site during construction of the new Gaziantep-Şanlıurfa highway. For an aqueduct at Samosata, see Hellenkemper 1977, 464 and fig. 1. Further study of Zeugma's water system should consider regional work on Roman aqueducts: Egea Vivancos 2006, 249–53.
185. See the description in Tobin, this volume. Household fountains of this type are frequent in houses of Zeugma; cf. Başgelen and Ergeç 2000, 42.
186. Most of these were pear-shaped, similar to the rock-cut cistern next to the House at Site D (Kennedy and Freeman 1998, 39, 68–9, fig. 4.17). For other cisterns and water channels from Zeugma, see Kennedy and Freeman 1998, 73–4, figs. 4.24–28. For Hellenistic pear-shaped, rock-cut cisterns at Jebel Khalid on the Euphrates, see Clarke et al. 2002, 25.
187. Kennedy and Freeman 1998, 69.
188. Algaze et al. 1994, 34, Site 19 (E); Comfort and Ergeç (2001, 40) suggest that the pear-shaped, rounded cisterns are Hellenistic and the squared cistern is Roman.
189. Kennedy and Freeman 1998, 39–40, fig. 3.11 (a rectangular plan, 10.7 by 4.8 m, and 6.3 m tall, with capacity up to about 243 m^3).
190. Abadie-Reynal 2003b, 82–5, fig. 10. In Chantier 9: Abadie-Reynal et al. 1998, 388–93, figs. 13–15; Abadie-Reynal and Ergeç 1999, 405, figs. 6–8. Some of the access shafts are sealed by a Roman pavement installed prior to the sack of A.D. 252/253.
191. Tate 1997, 62–4.
192. For an overview of problems in the primary sources, see Cohen 2006, 190–6; Syme 1995, 100–9.
193. Strabo 11.12.3; 12.2.1; cf. Syme 1995, 95–7; Mitchell 1980, 8–9.
194. Millar 1971, 1. Cohen (2006, 193), and Butcher (2004, 8) remind us of this region's ever-shifting political geography. For Roman frontier objectives and operations and defense on the Euphrates frontier, see Mattern 1999, 110–2; Millar 1982, 8.
195. Grainger and Gawlikowski have each suggested, on slightly different grounds, that the city later known as Zeugma was, or was near, the place where Alexander the Great crossed the Euphrates, an event largely reported in the primary sources at Thapsacus: Grainger 1990, 25; Gawlikowski 1996, 123–33; cf. Cohen 2006, 150, 191–2; Kennedy 1998a, 41, 237; Syme 1995, 97–100; Harper 1977, 457; Dillemann 1962, 124, 153, 154. For Cyrus the Great at Thapsacus, see Xenophon *Anab*. 1.4–6. According to Cassius Dio (40.17.3), Alexander and Crassus both crossed at Zeugma.
196. For the river crossing in general, see Kennedy 1998a, 41, 237; Abadie-Reynal et al. 2000, 281–3; 1996, 318–9; Wagner 1976, 107–9, taf. 10a; Archi et al. 1971, 31–5. A permanent bridge is sometimes assigned to the crossing on the sole basis of the toponym Zeugma: e.g., Stark 1966, 109, 168, 174, 255.
197. Pococke 1743–1745, 2:156. Pococke apparently never saw the piers himself; cf. Wagner 1976, 26; Kennedy 1998a, 13.
198. Sachau 1883, 178; Cumont 1917, 125, 142; Wagner 1976, 107–9, taf. 10a; cf. Chaumont 1984, 74.
199. Kennedy 1998a, 41; cf. Comfort et al. 2000, 107. Tarn (1952, 151) called it a "boat-bridge," and D.G. Hogarth, who frequented the area between 1908 and 1914, assumed a pontoon for antiquity; see Cumont 1917, 134 n. 1.
200. Abadie-Reynal et al. 2000, 281–3, figs. 1, 3; 1999, 331–2; 1996, 316–9; cf. Abadie-Reynal and Gaborit 2003, 153–4; Algaze et al. 1994, 34–5, Site 19 (T); Wagner 1976, 107–9.
201. Pausanias 10.29.4; Kennedy 1998a, 150 no. 44. Dionysus appears frequently in the mosaics of Zeugma: cf. Abadie-Reynal 2002, figs. 4, 7; Abadie-Reynal et al. 2000, 290; Campbell et al. 1998, 109–28, esp. 116; Önal 2002, 18–21, 64–5. For the idea that Thapsacus and Zeugma are the same place, see Gawlikowski 1996, 123–33; cf. Comfort et al. 2000, 99–126.
202. Arrian *Anab*. 3.7.1–2: γέφυρα; cf. Curtius 4.9.12: *pontes*. Arrian's account of Alexander's Indus crossing includes a digression on the Roman method of making bridges of boats (*Anab.* 5.7.3–5).
203. Pliny *HN* 34.43 (150). Kennedy (1998a, 149 no. 37) suggests that Pliny may be describing a chain at Thapsacus, but Pliny (*HN* 5.21 [86–7]) mentions Zeugma in this passage and elsewhere distinguishes Zeugma from Thapsacus. Alexander's bridge is also mentioned in Lucan's *Pharsalia* (8.229–38), by Theodoretus in the mid-fifth century A.D. (Kennedy 1998a, 158 no. 87), and by Stephen of Byzantium (*Ethnica* 295) under Justinian; cf. Kennedy 1998a, 159 no. 93. The Athenians took cables from the Persian pontoon on the Hellespont to dedicate in their sanctuaries (Herodotus 9.121).
204. Plutarch, *Crassus* 17.2, 19.3–20.2; cf. Florus 1.46.3; Cassius Dio 40.17.3–19.3; Sherwin-White 1984, 285. For Plutarch, an ominous river crossing on a pontoon in stormy weather may have been a prolepsis for the catastrophic defeat and capture of Crassus.
205. Kennedy 1998a, 141 no. 10. Antony's crossing in 36 B.C. was probably also by pontoon: Holmes 1931, 125, 223.
206. *Mansiones Parthicae* 1 (Schoff 1914, 2–3, 17–18, 22–3); Chaumont 1984, 69–75, figs. 1, 2; cf. Kennedy 1998a, 145 no. 24; Sidebotham 1986, 139; Dillemann 1962, 129–35, 165–71, 175. Ammianus Marcellinus 18.8.1; cf. Kennedy 1998a, 156, no. 74; Matthews 1989, 45; Dillemann 1962, 212. On the general matter of the veracity of Ammianus, see Barnes 1998. There are only four other references to a bridge at Zeugma *as a monument* (that is, distinct from

other references to the place as simply a river crossing), but they are generic, and the type of bridge meant is not clear: Strabo 16.2.3: *zeugma* (for which, see Cohen 2006, 192 n. 3); Cassius Dio 40.18.3–19.1: γέφυρα; Pliny *HN* 5.21: *pons*; Josephus *AJ* 18.101–2: γέφυρα (these are Kennedy 1998a, 140–8, nos. 7, 12, 26, 33; cf. his comments on Strabo 16.2.1 at no. 23). Tacitus *Annales* 6.37.4 (cf. Kennedy 1998a, 145 no. 25) and 15.9.1 provide clear descriptions of bridges of boats for crossings of Vitellius in A.D. 35 and Corbulo in A.D. 62, respectively, but for each case the specific location on the Euphrates is not clear. For both of these Furneaux (1896, I:640 and II:74, 328) suspected Zeugma and remarked that the only way to cross was by pontoon bridge, which was not permanently maintained but readily assembled as needed. For likely crossing points in the vicinity of Zeugma, see Comfort et al. 2000, 99–126, esp. 113–21. Allusions to a bridge in narratives about a Euphrates crossing are more frequent: e.g., Cassius Dio 40.17.3, 49.19.3–20.3; Tacitus *Annales* 12.11.4–12.5. Even less descriptive are Appian's accounts of Euphrates crossings by Lucullus and Mithridates: Appian *Mithradatic Wars* 12.84, 15.101.

207. Kennedy (1998, 156 no. 74) suggests that this was most likely a pontoon bridge; cf. Kennedy 1998a, 156 no. 76. Constantius crossed at Capersana on a bridge of boats about two years later (Ammianus Marcellinus 21.7.7), and on a pilgrimage from Antioch into Mesopotamia in the late fourth century A.D., Egeria stopped at Hierapolis and then crossed the Euphrates by the only means available, on a large boat (for source and commentary see Clarke 1999, 637–8). Ammianus makes many references to pontoon bridges on the eastern frontier: e.g., 18.7.2; 23.5.4–5; 23.6.21; 24.3.11; cf. de Jong 1980, 251–2.
208. For Trajan's Danube bridge, see Cassius Dio 68.13; Lepper and Frere 1988, 147–51; cf. Coulston 2001, 124–5. Herodotus (1.186) describes a Euphrates bridge at Babylon built by Queen Nitokris with removable planks laid across piers of masonry and brick. Antecedents for breaking down bridges are both mythological, in the story of Horatius Cocles (Livy *Ab Urbe Condita* 2.10), and historical, in Caesar's *Gallic War* 1.7, 4.19. The Persians feared that destruction of the Hellespont pontoon would prevent their retreat: Herodotus 7.10b, 7.95.2, 8.97.1.
209. On the Upper Euphrates, Huntington (1902, 185) observed limestone blocks for piers built on islands in the river, presumably for a Roman bridge on the road from Arsamosata (Harput).
210. Galliazzo 1994, II:390–4 no. 824 (Cendere Su), II:397–400 no. 835 (Göksu), II:405–6 no. 844 (Karasu near Hisar), II:407 nos. 845 and 846 (Merzumen); cf. O'Connor 1993, 127–9; Sinclair 1990, 4.172–5 (Göksu and Karasu); French 1983b, 71–101, esp. 90–2; Comfort 2006, 37–8, figs. 49 and 52; Comfort et al. 2000, 113–4, figs. 11, 15, 16, 19; Comfort and Ergeç 2001, 31, 37, 40, figs. 5, 17. See also the remains of piers for a possible bridge on a small tributary of the Euphrates about 2.5 km north of Zeugma, on the west bank of the Euphrates near Bındıklı village: Algaze et al. 1994, 32, Site 15; Comfort and Ergeç 2001, 34, fig. 14. In addition, a bridge over a canal between the Orontes and the Karasu, built by detachments of the *legio IIII Scythica*, may have enhanced traffic between Antioch and Zeugma: Speidel 1998, 169. For masonry bridges of Ottoman date near Urfa and Malatya, see Serdaroğlu 1977, 79–81.
211. O'Connor 1993, 127–9; Dörner 1967, abb. 81–2; Dörner and Goell 1963, 32–3, abb. 2. This is one of the longest surviving Roman road bridges in Anatolia, and in terms of span its single arch (34.2 m wide) is second only to the widest of all known Roman road bridges: Italy's Pont St. Martin (35.6 m).
212. For the *legio XVI Flavia firma* and the bridge on the Cendere Su, see Zoroğlu 2000, 75–6; cf. Kennedy 1998a, 156.
213. Wagner 1977, 529, 539, nos. 8–9; cf. Kennedy 1998a, 133–4, table 8.1, nos. 100–1.
214. Kennedy (1998a, 242 n. 14) calls attention to the significance of the choice of the image of the temple on Belkis Tepe, not the bridge, for the coins of Zeugma. The name Zeugma was also used for a crossing on the Golden Horn in Byzantine Constantinople; cf. Van Millingen 1899, 215.
215. Cf. Clarke 1999, 637–8; Isaac 1992, 413; Stark 1966, 210. The bridge of Pacorus, built in 38 B.C. near Zeugma in little more than forty days, must have been a pontoon: Cassius Dio 49.19; Frontinus *Str.* 1.1.6 (*pons*); Sherwin-White 1984, 304–5; cf. Kennedy 1996c, 80. Avidius Cassius on the Euphrates: Cassius Dio 71.2–3. Trajan on the Tigris: Cassius Dio 68.26.1; cf. Lightfoot 1990b, 118–9. Julian in the East: 23.2.7, 23.3.9, 24.7.4 (with reference to boats made especially for pontoon bridges). Cassius Dio (71.3) describes the building of pontoon bridges on the Danube, Euphrates, and Rhine as a standard practice of the Roman army; cf. Isaac 1992, 410–3. A century ago it was possible to cross the Euphrates in the vicinity of Zeugma without the aid of a bridge, even at periods of high water: e.g., Bell 1911, 31–2. Grainger's retelling of Hogarth's crossing above Zeugma in a leaking boat at the mercy of the current makes it clear that locals perceived these conditions as a matter of course (Grainger 1990, 75 n. 25). For crossing the Euphrates without a bridge in antiquity (near Rumkale), see Comfort 2006, 38.
216. For example, Cyrus on the Araxes (Herodotus 1.205.2), Darius on the Bosporus, Hellespont, and Danube (Herodotus 4.83–9), Xerxes at Abydos (Herodotus 7.34–56; cf. Strassler 2007, fig. 7.36), and Alexander the Great on the Hellespont and the Euphrates.
217. Wagner 1976.
218. Algaze et al. 1994, 20, 34–5, figs. 30E–G (Hellenistic pottery), 31B (LRC), 32C (Islamic pottery); Abadie-Reynal et al. 2000, 292, 317, 323; 1999, 331–2, 343–5, figs. 25–27; 1998, 388, 395; 1996, 321; Abadie-Reynal and Ergeç 1999, 404–5. Kennedy (1998a, 241) suggests that the best properties were above the zone of presumed industry and trade along the riverbank, where the streets were quieter and the views more impressive.
219. Abadie-Reynal et al. 2000, 279–81. For the absence of Hellenistic levels in Chantier 12, see Abadie-Reynal et al. 2000, 291.
220. Zeugma: cf. Abadie-Reynal et al. 1998, 383. Samosata: Cohen 2006, 187–90; Zoroğlu 2000, 75.
221. Although there is no evidence for it, a brief period of Sasanian occupation is not inconceivable. Graffiti in houses at Dura-Europos reveal a Sasanian occupation there for a few years after the sack of A.D. 256: Rostovtzeff 1932, 210–2.
222. For Trench 1, see the chapters by Tobin and by Kenrick (Ceramic Group G). For a building dated to the sixth through ninth centuries A.D. in Chantier 10, see Abadie-Reynal et al. 1999, 327, 329, 331, figs. 13–4.
223. See the chapters by Kenrick (Ceramic Group C), volume 2; and Tobin in this volume.
224. See discussion in chapters by Tobin, Dunbabin, and Bergmann in this volume.
225. E.g., Abadie-Reynal et al. 2000, 332; 1998, 401–2.
226. Kennedy 1998a, 239. Apamea: Abadie-Reynal and Ergeç 1999, 407; Abadie-Reynal et al. 1998, 402–3.
227. Liebeschuetz 1972, 73–83, esp. 78; cf. Bowersock 1989, 68.
228. Abadie-Reynal et al. 1998, 397–402.
229. Kennedy 1998a, 238. A helpful comparandum for Apamea in Hellenistic times is Jebel Khalid on the Euphrates, a garrison town, steward of the river crossing, and regulator of traffic on the river, for which the excavators describe a single-period occupation in the era of Seleucid control: Clarke et al. 2002, ix, 46–7.
230. The earliest dated houses at Zeugma belong to the second century B.C. (Abadie-Reynal and Ergeç 1999, 404; Abadie-Reynal 2003a, 367). Abadie-Reynal's unsatisfactory suggestion that Seleucia-on-the-Euphrates was a pendant to Apamea in terms of defensibility rests on the supposition that occasional evidence

for the Roman army in the area around Kara Tepe must signal a lost Hellenistic outpost on the very same spot (2003a, 367). In fact, there is no conclusive evidence for a Hellenistic defensive position at Kara Tepe. Moreover, archaeologists have not identified the specific location of the legionary fortress of the *legio IIII Scythica*. Thus, Abadie-Reynal's conclusions are unfounded: "Il se peut d'ailleurs que cette occupation permanente de la colline ait lourdement participé à la destruction des vestiges hellénistiques, d'autant que le rocher affleurait en surface, au point culminant de cette position défensive (2003a, 367; cf. Abadie-Reynal and Gaborit 2003, 149–69)." For the location of Kara Tepe, see Abadie-Reynal 2003, fig. 2; Abadie-Reynal et al. 2001, fig. 2.45; 2000, fig. 1; 1997, fig. 1; 1996, fig. 3. Kennedy (1998a, fig. 3.2) and Wagner (1976, Karte II) identify a Kara Tepe on the west side of the Bahçe Dere.

231. Alexander: Pliny *HN* 34.43 (150). Antiochus III: Polybius 5.43.1; 3–4. Timarchus: Diodorus Siculus 31.27a. Cf. Grainger 1990, 104–5, 133–4.
232. For Commagenian control of the river crossing at Zeugma in this period, see Sherwin-White 1984, 291; Sullivan 1990, 195.
233. Abadie-Reynal and Ergeç 1999, 404. For Roman walls superimposed on top of Hellenistic walls of different orientation in Chantier 5, see Abadie-Reynal et al. 1998, 383.
234. Balty 1988, 96.
235. Gaius Caesar had apparently met with a Parthian king on an island in the Euphrates, perhaps near Zeugma or Samosata, among the few places on the Euphrates with islands: Velleius Pat. 2.101.
236. Euphrates as border between East and West: Braund 1996, 43–7; Isaac 1992, 28–33; Grainger 1990, 75–6; Wheeler 1989, 505–11, esp. 506; Millar 1993, 29–30; 1982, 19–20 and n. 128. Conflict: Butcher 2003, 40–64; Kennedy 1998a, 146–7 no. 29; Dąbrowa 1986, 93–108. Zeugma was the transfer point for the delivery of the Parthian prince Meherdates from Rome to Parthia by the Syrian governor Cassius Longinus in A.D. 49: Tacitus *Annales* 12.10–12; cf. Wheeler 1996, 266; Millar 1993, 66; Dillemann 1962, 58. In A.D. 71 Titus received Parthian messengers of King Volagases at Zeugma and entertained them at a banquet: Josephus *BJ* 7.5.2.
237. For a historical overview of this period, see Kennedy 1996a, 708–12. For Commagene and the Euphrates frontier in A.D. 72, see Bowersock 1973, 135. Tile stamps of the *legio IIII Scythica* have only been found on the west bank of the river at Zeugma. Kennedy (1998a, 135) reported that none had been found at Apamea or anywhere on the east bank; cf. Wagner 1977, 537–9, nos. 1–9, and fig. 2. For archaeological remains of temporary Roman military camps at Zeugma dated to the first half of the first century A.D., see Hartmann and Speidel 2002, 260.
238. It is not unreasonable to link Apamea's fortune to that of Jebel Khalid, the Hellenistic garrison town on the west bank of the Euphrates (in Syria), abandoned at the beginning of the first century B.C.: Clarke at al. 2002, 47–8.
239. Cohen 2006, 190–1, 433–4; Wagner 1976, 65–70; Jones 1971, 245; Dussaud 1927, 449; Cumont 1917, 122–3. The earliest use of the toponym Zeugma is Cicero (*QFr.* 2.12.2); cf. Kennedy 1998, 141 no. 9. The latest attestations of the latter are found in inscriptions from Rhodes (Seleucia-on-the-Euphrates) and Pergamon (Seleucia .. [… at Zeug]ma): Kennedy 1998a, 149–50 nos. 42 and 46.
240. Kennedy 1998a, 155 no. 69.
241. Pliny *HN* 5.21; 6.30; Ptolemy *Geog.* 5.14; cf. Kennedy 1998a, 150 no. 43.
242. Kennedy 1998a, 157–8, no. 80 and fig. 9.1.
243. Cf. Butcher 2003, 114. For the designation "twin-towns," see Kennedy 1998a, 33; Abadie-Reynal 2001, 7–24; Rose 2002, 62; cf. Abadie-Reynal 2003a, 366–9; Comfort et al. 2000, 99; Grainger 1990, 75–6; Chaumont 1984, 74. The explanation for different town plans on opposite banks of the river proposed by Abadie-Reynal (2003a, 366–73, esp. 366–9) elevates Seleucia-on-the-Euphrates to a size and importance not borne out by the archaeological or literary evidence for Hellenistic times. Moreover, it undervalues obvious forces behind the development of the city's character, namely the shifting perceptions about east and west outlined above, the absence of a permanent bridge, challenges to building on the sloping topography between Belkis Tepe and the river, and the undeniably transformative force of the Roman army for the Euphrates frontier. It also imparts a flexibility to systems of Seleucid city planning that is inconsistent with programs of Seleucid control over territory and populations (e.g., Ma 2000, 16–7; 106–21; Kennedy 1996a, 717; Cohen 2006, 180; 1995, 21–2, 63–71, esp. 64; Grainger 1990, 67, 91–92,). If the Seleucids ever were flexible about city planning, Seleucia-on-the-Euphrates is hardly an example of this. Most unsatisfactory is Abadie-Reynal's appeal to topography for the suggestion that Seleucia-on-the-Euphrates was comparable to Dura-Europos and Jebel Khalid. It is true that, like Seleucia-on-the-Euphrates, these Seleucid foundations were established on the west bank of the river, but they have far more in common with Apamea in their situation on relatively flat land, their robust fortifications, and their orthogonal town plans. This much is demonstrated by Leriche and Gaborit (2003, 374–91). Abadie-Reynal fails to consider that neither Dura-Europos nor Jebel Khalid had a pendant city on the opposite bank with undeniably stronger defenses, as was the case for Seleucia-on-the-Euphrates.
244. *Mansiones Parthicae* 1 (Schoff 1914, 2–3, 17–18, 22–3, with the telling statement: "Whether two places or two names for the same place is not known"); cf. Kennedy 1998a, 145 no. 24; Millar 1982, 16.
245. Pliny *HN* 5.21 (86–87); cf. Kennedy 1998a, 148 no. 33.
246. The trilingual victory inscription of Shapur I at Naqsh-e Rustam mentions Apamea and Zeugma, but not consecutively, in a list of 37 cities sacked by the Sasanians: Kennedy 1998a, 155 no. 69. Without specific reference to these Euphrates cities, Appian mentions three Apameas and nine Seleucias among the cities founded by the Seleucids: Appian, *Syr.* 11.9; Kennedy 1998a, 139, no. 2.
247. Cf. Kennedy 1998a, 11. See Campbell et al. (1998) for an interpretation of the wedding of Dionysus and Ariadne mosaic at Zeugma as an allegory for weddings of Alexander or Seleucus to eastern brides.
248. E.g., Grainger 1990, 75–6.
249. For the location of the legionary fortress, see Drahor 2006, 49–50; Hartmann and Speidel, volume 3; 2002, 259–68; Hartmann et al. 1999, 417–23; Kennedy 1998a, 37–38, fig. 3.10; Wheeler 1996, 231; Kennedy and Riley 1990, 122–3; Kennedy 1996c, 86; Speidel 1998, 168; Lepper 1948, 175. Kennedy (1998b, 558) suggests on the basis of satellite data that the Roman legionary fortresses linked to Samosata and Zeugma in the historical sources may have actually been located elsewhere. For the Roman army at Zeugma in general, see Kennedy 1998a, 11, 135–7, 239–41, figs. 8.13, 8.14; Devijver 1998, 205–32; Speidel 1998, 163–204.
250. Speidel 1998, 168–9, 174; Kennedy 1998a, 39. For tile stamps of the *legio IIII Scythica* at the bridge on the Karasu and at the Roman fort at Eski Hisar in Osrhoene between Zeugma and Samosata, see Kennedy 1998a, 133–5, table 8.1, nos. 100–2; Wagner 1983, 103–29. For legionary engineering projects around Zeugma in the Flavian era, including a water-lifting device constructed by the *legio III Gallica* on the west bank of the Euphrates about 35 km north of Zeugma (*ILS* 8903 = *IGLS* I 65–66), see Comfort et al. 2000, 115–6, fig. 16; Wheeler 1996, 256; French 1994, 41–3; Millar 1993, 83; Oleson 1984, 55–6.

251. Wagner 1976, 147–273; Kennedy and Graf 1998, 92–108; Speidel 1998, 176–7, nos. 1–2.
252. See discussion in Butcher, volume 3. Tombstones at Zeugma bear the names of soldiers reared, among other places, in Italy, Syria, Macedonia, and Bithynia: Speidel 1998, 163–204.
253. For the military equipment discovered in the city of Zeugma, see Scott's chapter in volume 3. Most of the objects also appear alongside objects of like material (bronze, iron, gold, bone, and ivory) in separate chapters in that volume. For other military equipment found at Zeugma, see the chapter by Hartmann and Speidel in volume 3 and Feugère 2006, 91–5.
254. For other fragments of Roman scale armor found at Zeugma, see Hartmann and Speidel, volume 3. For fragments of chain mail, see Kennedy 1998a, 137, fig. 8.14 (perhaps in or near the House of the Dionysus and Ariadne Mosaic); Feugère 2006, 93. For Roman body armor in general, see Robinson 1974, 5–12.
255. Kennedy 1998a, 135–7, figs. 8.13, 8.14; Ergeç 1998, 88, fig. 5.9; Başgelen and Ergeç 2000, 22, 27, fig. 4; Başgelen 1999, 185–6, no. 5.
256. For face-mask helmets in general, see Bartman 2005, 99–119, esp. 101–3. The face-mask component of a more elaborate face-mask helmet in the British Museum may have been found at Zeugma: Kennedy 1998a, 135–6, fig. 8.13. The context of the face-mask helmet at Zeugma is somewhat parallel to that of other masks abandoned in the aftermath of enemy incursions: Bartman 2005, 100. For the well-preserved face-mask helmet from Emesa in the Damascus Museum, see Downey 1963, figs. 79–80.
257. Bartman 2005, 104.
258. Nardi and Önal 2003, 68–78.
259. For soldiers billeted in cities and towns on the eastern frontier, see Pollard 1996, 215, 225; Isaac 1992, 269–82; Kennedy and Riley 1990, 122; Rostovtzeff 1932, 190, 199, 201. Along with Dura-Europos and Palmyra, Zeugma is now one of the few cities on the eastern frontier with archaeological evidence for soldiers quartered in town; cf. Isaac 1992, 281.
260. For comparison, epitaphs record the death of cavalrymen at Apamea-on-the-Orontes in defense of that city in A.D. 252 (Balty and Van Rengen 1993, 14–5).
261. For the bath at the Birecik Dam, see Kennedy 1998a, 31 n. 3; Başgelen and Ergeç 2000, 32–3; Ergeç and Önal 1998, 419–43; Başgelen 1999, 188–190. For the bath on the plateau of At Meydani, see Hartmann and Speidel in volume 3.
262. Clarke 1999, 640; Kennedy 1998a, 239; cf. Campbell 1994, 1223–4; Davies 1971, 124; Stark 1966, 248; Mitchell 1995, 212–5; Stoneman 1992, 57.
263. Rostovtzeff 1932, 206.
264. Speidel 1998, 203–4, fig. 10.4.
265. Kennedy 1998a, 154–5, no. 68; Pollard 1996, 225.
266. E.g., Tacitus, *Histories* II.80 (for Syria under Vespasian); cf. Kennedy 1996a, 725, 736. The unpublished Interim Report prepared by OA (page 10) mentions a mosaic inscription with an *epithalamium* found in the bath discovered by the ZIG group in 2000 next to Trench 10.
267. De Giorgi 2007, 293–8.
268. Cults: Millar 1993, 468. Veterans: De Giorgi 2007, 295. For small Roman forts near Zeugma at Eski Hisar and at Fort AS 190, see Wagner 1983, 103–29. For a late Roman encampment at Jebel Khalid on the Euphrates, see Clarke et al. 2002, ix. In terms of security, the impact of veterans in the rural landscape is difficult to measure: Isaac 1992, 318–21.
269. French 1983a, 47–59; Sartre 1991, 75–8; Kennedy 2006, 359; 1996a, 716, 724–5; 1989, 235–46; Liebeschuetz 1972, 81–2.
270. Philostratus *VA* 1.20, normally taken to refer to the first century A.D.; cf. Kennedy 1998a, 146 no. 28; Pollard 1996, 215; De Ste. Croix 1981, 129; cf. Millar 1971, 1 n. 1; Rostovtzeff 1932, 209–10. Sidebotham (1986, 171–2) suggests that the episode reflects the situation in the first century B.C.
271. Some tax farmers appear to have collected duty up to 25 percent on goods imported from Parthia, the highest import tax known for the empire; Butcher 2003, 191–2; Sidebotham 1986, 171. For limitations on trade across the Euphrates frontier in Roman times, see Butcher 2003, 184, 186.
272. Cf. Butcher 2003, 183. For demands imposed by military supply-lines, see Elton 2005, 289–304; Monfort 2002, 70–83. Detachments from the *legio IIII Scythica* helped to maintain the harbor at Seleucia Pieria and built a navigable canal between the Orontes and Karasu: Speidel 1998, 169; Wheeler 1996, 256; Millar 1993, 89.
273. Kennedy 1996a, 722–3.
274. For north Syrian painted amphorae from Chantier 9, see Abadie-Reynal et al. 1998, 392.
275. The following is drawn from observations in the chapters on ceramics by Kenrick and Reynolds in volume 2.
276. For garum transport over land from the Mediterranean coast to the Euphrates via Palmyra, see Curtis 1991, 146. Pontic coins at Zeugma also betray northern contacts in Severan times.
277. See also Facella (2005, 233–4) for the general lack of archaeological evidence for imports to Commagene in Hellenistic times. For local production of pottery at Zeugma, see Gschwind 2006, 65.
278. See the chapter by Hawari in volume 2 (Types 3–6). Most transactions at Dura-Europos were apparently local, not long-distance (Rostovtzeff 1932, 208).
279. See discussion by Hawari in volume 2 (Type 5).
280. For this point and **M17**, see the chapter by Dunbabin in this volume.
281. For several quarries near Zeugma, especially along the Euphrates Valley to the north, presumably a source for building stone conveyed on rafts to Zeugma, see Comfort and Ergeç 2001, 33, 40, figs. 22–3; Kennedy 1998a, 20 (fig. 2.1), 57–9, 131–2; Kennedy and Bunbury 1998, 27–9; Speidel 1998, 168. For Roman quarries near Eski Hisar, see Wagner 1983, 109 and fig. 8.2b. For Hellenistic or Roman quarries near Carchemish, see Wilkinson et al. 2007, 239.
282. Kennedy 1998a, 131–2, figs 8.3, 8.9. A possible revetment clamp was found in Trench 2, but without corresponding evidence for revetment (**BR162**). The excavators in 2000 recovered a few fragments of small marble statuettes—see the chapter by Rose in this volume for **SS4, SS5**, **SS6**. For a marble head in the Gaziantep Museum, presumably from this region, see Başgelen 1999, 118, no. 40.
283. See Rose, this volume, **SS4**, **SS5**, **SS6**. For part of a life-size philosopher portrait in white marble found in a large drain beneath Chantier 9, see Abadie-Reynal et al. 1998, 392, fig. 15.
284. The following is based on discussion in the chapter by Butcher in volume 3.
285. See the description of the House of the Hoards in the chapter by Tobin in this volume. An assemblage from Chantier 5 with a hodge-podge of bronze and iron objects and a hoard of 106 bronze coins could belong to the same type of operation. Abadie-Reynal et al. (1998, 388) call it an artisan's workshop and assign a fourth-century date on the basis of an unnamed emperor on one of the (unpublished) coins. For archaeological formation processes involving recycling, see Schiffer 1987, 29–30. A vivid parallel for hoarding scrap metal comes from fourth-century B.C. Halieis: Dengate 2005, 102–5, 115–6.
286. Found in the so-called archive building in Trench 3 in 2000: Önal 2000, 30–4.
287. Cf. Butcher's comments in volume 3 on the inability of the numismatic evidence to inform on Zeugma's trading partners.
288. Herbert, volume 2, **ZB1–21**, from Trenches 2, 4, 9, and 13. Early

et al. (2003, 17) incorrectly state that only six sealings were found beyond Trench 3. For mention of 18 sealings from the Dionysus Room of the so-called Villa of Euphrates, see Önal 2003, 317.

289. In what language were the documents bound by these sealings written? Clues to this question for Zeugma might be sought at Dura-Europos, where Latin, Parthian, Aramaic, and Syriac, among other languages, appear, but none in greater number than Greek: Millar 1971, 3–4.
290. Will 1988, 315–21; Ruffing 2007, 401–7.
291. Ruffing 2007, 403–4; cf. West 1924, 167–72 (for exports from Syria).
292. For occupations and manufacturing in Roman Syria, see Kennedy 2006, 361–2; Sartre 1991, 349–55. For problems of available labor for industries such as stonecutting, carpentry, olive processing around Antioch, see De Giorgi 2007, 296.
293. See the chapter by Cole in volume 3. Wool is apparently absent, but perhaps by accident of survival. For discussion of textiles depicted in Zeugma mosaics, see Campbell and Ergeç 1998, 114–5.
294. See the chapter by Parton in volume 3. For Syrian textiles exported to the West, see Liebeschuetz 1972, 79; West 1924, 167–72. For Chinese and Indian silk at Dura-Europos, see Pfister and Bellinger 1945, 53–4; cf. Rostovtzeff 1932, 176. For textiles in Roman Syria, see Butcher 2003, 185–6 (imports from China at Palmyra), 211–2 (local).
295. See discussion on the House of the Tesserae in the chapter by Tobin in this volume; cf. Abadie-Reynal et al. 2000, 321. Colors in tesserae in the polychrome mosaics of Zeugma have been matched to pebbles on the banks of the Euphrates River: Ergeç 1998, 88 n. 3.
296. See the chapter by Dunbabin in this volume; cf. Önal 2002, 32–33; Abadie-Reynal 2002, 769.
297. Butcher 1998, 233.
298. See the chapter by Herbert in volume 2.
299. Kennedy 1996a, 706, 721–2. For agriculture and food production in Syria, see Butcher 2003, 166–74, 196–9; Sartre 1991, 321–3; Rostovtzeff 1964, 1164–7 (Seleucid period); Tate 1997, 66–7; West 1924, 161–4 (Roman period). For cereals and livestock at Hellenistic Apamea-on-the-Orontes, see Strabo 16.2.10. For Dura-Europos, see Ruffing 2007, 401–3. For Commagene, see Cohen 2006, 30; Facella 2005, 228–32.
300. Decker 2001, 69–86; Downey 1992, 379–80.
301. Algaze et al. 1994, Sites 9, 10, 12, 14, 20, 22, 25, 26, 28, 30, 34, 36, fig. 30 (Hellenistic), Sites 4, 5, 6, 7, 8, 10, 11, 13, 14, 18, 20, 21, 25, 31, 32, 33, 34, 35, 37, 39, fig. 31 (Roman), Sites 4, 14, fig. 32 (Abbasid). Sites 8, 9, 11, 13 are identified as possible villas or farmsteads; cf. Algaze et al. 1991, 207. Algaze's surveys also identified sites of similar character in the vicinity of Carchemish; cf. Wilkinson et al. 2007, 235. North Syria appears to have provided a base for agricultural production that supplied most of Syria: cf. Downey 1992, 379–80.
302. Tchalenko 1953, 381–2; Balty 1988, 96.
303. See the chapter by Challinor and de Moulins in volume 3. For fruits and nuts, including pomegranates, in the Roman diet; see Davies 1971, 12; West 1924, 162 (in Roman Syria).
304. For wheat and the Roman army, see Erdkamp 2002, 47–69; Davies 1971, 125–6. For ruins of a (possible) large Hellenistic or Roman granary near Kantarma, about 40 km north-northeast of Zeugma, see Comfort et al. 2000, fig. 12; Comfort and Ergeç 2001, 41.
305. De Giorgi 2007, 294–7; cf. Balty 1988, 96.
306. See the chapter by Parton in volume 3. For production of bread and olive oil in general, see Curtis 2001, 325–70, 380–94.
307. Butcher 2003, 173; De Giorgi 2007, 295; West 1924, 162; cf. Curtis 2001, 372–80.
308. Cherries: Kennedy and Freeman 1998, 67. Roses: Kennedy 1998a, 52–3; cf. Abadie-Reynal et al. 2000, 308, fig. 44. Honey: Curtis 2001, 240. For honey as a sweetener used by the Roman army, see Davies 1971, 131.
309. See the chapter in volume 3 by Charles on animal skeletal remains; cf. Rousseau 2006, 153–9. For meat in the diet of the eastern Roman provinces: King 1999, 185.
310. Pork was also favored at Roman Beirut: Perring 2003, 208. For pork in the Roman diet, see Garnsey 1999, 16–7; King 1999, 188–9. For the importance of pigs in the diet and economy at the Iron-Age site of Tell Afis in Syria, see Wilkens 2000, 5–14. Contrast a possible prohibition on pork in Roman times at Aşvan Kale and Pontic Comana to the north: Mitchell 1980, 45–6. For pork at the Byzantine fort at Pağnik Öreni on the Euphrates ca. A.D. 425, see Harper 1977, 455. For beef in the diet of the Roman army, see Davies 1971, 126–7, 138–41, table 1; Curtis 2001, 397; Garnsey 1999, 16–7; King 1999, 188. For the consumption of meat at Dura-Europos, see Ruffing 2007, 403. For meat consumed at Umm el-Jimal, see Toplyn 1998, 221–8. For the consumption of livestock at Apamea-on-the-Orontes, especially sheep and goat, see Gautier 1984, 340–1.
311. Trough: unpublished Interim Report, page 16; cf. the chapter by Tobin in this volume. Tether-holes in Trenches 2, 3, and 8: Early et al. 2003, 17, 40, 55. Cf. Lang-Auinger (2003, 335) for the conversion of houses to stables in the postgallienic phase at Ephesos.
312. Cf. Davies 1971, 139; West 1924, 166–7.
313. For horse and camel bones from Chantier 9 at Zeugma, see Rousseau 2006, 153–9. For camels in the Roman army, see Pliny *NH* 8.26; Kennedy 1996a, 716; Dąbrowa 1989, 364–6; Forbes 1955, 201; Gauthier-Pilters and Dagg 1981, 120–2; Stoneman 1992, 49; Robinson 1936, 57. For camels used for trade in Syria, see Liebeschuetz 1972, 82; Rostovtzeff 1964, 460, pl. 56. For a camel caravan graffito from Dura-Europos, see Rostovtzeff 1932, 212, fig. 5.
314. Robinson 1936, 55; cf. Garnsey (1999, 84) for Galen's aversion to camel meat. A modern date cannot be ruled out for the dromedary bones at Zeugma.
315. See the chapter by Charles in volume 3 for catfish and cyprinids (carp); cf. Davies 1971, 129–30. For garum, see Curtis 2001, 402–17; 1991, 141–7 (in Syria); Davies 1971, 131. **BR54** is apparently a bronze needle for repairing fishing nets.
316. Pinto–Guillaume 2002, 41, 46–7, 53; Andrews 1948, 299–303. For shellfish at Aşvan Kale, see Mitchell 1980, 66. For oysters in late antique houses of Apamea-on-the-Orontes, see Gautier 1984, 343.
317. Andrews 1948, 300.
318. For Roman uses of oysters, see Apicius 1.12; Pliny *HN* 32.21.
319. Athenaeus *Diepnosophistae* 1.7.d; cf. Davies 1971, 128–9.
320. E.g., Ammianus Marcellinus 23.3.9; Theodoretus, *Hist. Eccl.* 4.14.3; Zosimus 3.12.1; cf. Kennedy 1998a, 156 (no. 76), 237, 241–2; Comfort and Ergeç 2001, 23, 27, 33; Clarke 1999, 638. According to Pliny (*HN* 5.20.85), the Euphrates was navigable as far north as Samosata; cf. Isaac 1992, 13; Huntington 1902, 180. For kelleks on the Euphrates, see cf. Huntington 1902, 181, 183, 193. For waterways and trade in general, see Leemans 1960, 1 n. 1; Mitchell 1980, 23.
321. See the chapter by Benefiel and Coleman in this volume. For a graffito of river boat at Dura-Europos, see Rostovtzeff 1932, 213 fig. 6; for comparanda, see Goodenough 1953, figs. 77, 78. For a mosaic depiction of a boat carrying amphorae in the Apamea (on the Orontes) Archaeological Museum, see Decker 2001, 77, fig. 4.5.
322. For maps showing ancient roads in north Syria, see Wagner 2000, fig. 14; Blanco 1999, fig. 3; Dillemann 1962, figs. 17, 23. For a remarkable rock-cut Roman road near Carchemish, see Wilkinson et al. 2007, 239–40, fig. 19. For Carchemish and river-borne trade on the Euphrates in the Old Babylonian period, see

Leemans 1960, 103, 107, 138 (timber and wine), 108 (horses), 124 (tin). Cf. Kennedy (2006, 357) on the centrality of communication and transport for understanding the regional economy.

323. See especially Kennedy's salient points about geography, military control, flooding, and natural disasters, as well as the observation that bridges in lower Iraq in the 19th century were pontoons drawn in as needed: Kennedy 1998a, 41 n. 19.
324. Comfort and Ergeç 2001, 19–49; Comfort et al. 2000, fig. 2; Kennedy 1998a, 57–9; Speidel 1998, 169, 174; Isaac 1992, 13; Dodgeon and Lieu 1991, 140; French 1983b, 71–101; Wagner 1983, 103–29; 1976, Karte II; Hellenkemper 1977, 461–71, fig. 1; Angeli Bertinelli 1976, 43–4; Bowersock 1973, 133–5; Serdaroğlu 1971, 145–52, fig. 112; Calder and Bean 1958; Dussaud 1927, map 14. For the roads north out of Antioch toward Zeugma, see Mouterde and Poidebard 1945, Map 1; De Giorgi 2007, 288, 290, 291; Liebeschuetz 1972, map at end of volume. Grainger's (1990, 75) contrary assessment of communication along the river does not offer sources to support it.
325. For imperial control of timber in Roman Syria, see Butcher 2003, 177–8. For timber transported on the Euphrates in Medieval times near Aşvan Kale, see Mitchell 1980, 23. For more recent times, see Comfort and Ergeç 2001, 23.
326. For glass at Zeugma, see the chapter by Grossmann in volume 2; cf. Dussart 2006, 51–54; Gschwind 2003, 352, cat. 1; Kennedy 1998a, 132. For Roman glass in the Gaziantep Museum, presumably from the region around Zeugma, see Başgelen 1999, 115, nos. 36 and 37; Temizsoy 1989, figs. 99–103. For glass in Roman Syria, see Butcher 2003, 201–2. For glass from Dura-Europos, see Clairmont 1963; Harden 1966, 265–6. For Roman and Byzantine glass from Amorium and the importance of dated glass from Anatolia and the Near East, see Lightfoot 2005, 173–81; 1985, 123–9; Lightfoot et al. 2003, 287.
327. Antioch and Apamea-on-the-Orontes: Decker 2001, 69–86; Liebeschuetz 1972, 75–7. Beirut: Perring 2003, 213–20.
328. Cumont 1917, 17; Tate 1997, 58; cf. Clarke 1999, 637–8.
329. For rivers as cultural boundaries, see Braund 1996, 43–7; cf. Wheeler 1989, 505–11; Millar 1982, 19–20 and n. 128. The Orontes functioned in the same way (De Giorgi 2007, 285).
330. Rome: Kennedy 1998a, 146–7 (no. 29), 238. Parthia: Kennedy 1996, 74–88.
331. For the Euphrates as an avenue for trade and cultural exchange between the Mediterranean and the Persian Gulf, see Potts 1997, 89–107; Whitehouse 1991, 216–8. For regional north-south avenues for trade functioning within a larger commercial system oriented east-west, see Kennedy 1996c, 72.
332. See the chapters by Crowther and Rose in this volume; cf. Wagner 1976, 117–23.
333. See discussion above, as well as chapters by Crowther and Rose in this volume.
334. For figural mosaics from Zeugma with representations of these deities, see Önal 2002; Abadie-Reynal 2002, figs. 4, 7, 12.
335. On the general absence of evidence for religious buildings at Zeugma, see Kennedy 1998a, 53–4.
336. Mosaics: Önal 2002; Abadie-Reynal et al. 1997, 351; 1996, 319–20.
337. Mercury and Eros: Ergeç 1998, 88, figs. 5.10–11; Başgelen and Ergeç 2000, 26, figs. 1–2.
338. Nardi and Önal 2003, 68–78.
339. Cf. Pollard 1996, 221–2.
340. The bronze statuettes each have the standard stephane and braids. Parallels for **BR154** (also illustrated in Early et al. 2003, fig. 9), with bracelets and drapery ("die halbbekleidete Anadyomene"): Delivorrias et al. 1984, 76–7, nos. 674, 681, 682. Parallels for **BR153**, without bracelets or drapery: Delivorrias et al. 1984, 54–56, nos. 430, 446, 448. **B29** was carved from a cattle metatarsal, broken just above the waist. The hint of the column of drapery over the (missing) legs is visible at the base of the preserved section of carved bone, at the contact surface for a join to another (missing) piece; cf. Delivorrias et al. 1984, no. 677.
341. A near life-size white marble statue of Aphrodite (Frejus type) in the Adana Museum may have come from Zeugma, but the specific findspot is apparently unknown: Wagner 1976, 129, taf. 20b: "von Belkis über Nizip." For display of Aphrodite statuettes in domestic contexts at Ephesos, see Lang-Auinger 2003, 334.
342. For the acropolis at Belkis Tepe, see Kennedy 1998a, 33. For Bel, see Drijvers 1980, 40–75 (Edessa); Dussaud 1905, 72–80 (Syria).
343. Cf. Abadie-Reynal 2003a, 367.
344. Wagner 2006, 200; 1976, 117–23, abb. 11, taf. 15–16.
345. The "temple on a hill" was one of Zeugma's two principal types: Butcher 1998, 235; 2003, fig. 34.1; Dussaud 1927, 449–50; Temizsoy 1989, 72; Donaldson 1965, 129–30, no. 36. For the temple on Zeugma's coins as an indicator of its importance for the daily life of Zeugma, see Kennedy 1998a, 242.
346. Butcher 1998, 235; Wagner 1976, 124–5.
347. Wagner 1977, 529–30; 1976, 124–7, taf. 18–19, with discussion of Tyche as the pre-Hellenic Astarte or Atargatis. For the *De Dea Syria* by Lucian of Samosata, see Elsner 1997, 191–6; Bilde 1990, 162–6. For the cult of Atargatis, see Bilde 1990, 151–87; Drijvers 1980, 76–121 (Edessa). For pre-Hellenic cults on the Euphrates frontier, see Millar 1971, 5–6 (Syria); Mitchell 1980, 45–46 (Pontus). For limestone statuettes of Tyche in the Gaziantep Museum, see Temizsoy 1989, figs. 85, 86.
348. Wagner 2006, 200; 1976, 123–7, abb. 12, taf. 17; cf. Cohen 2006, 195–6; Abadie-Reynal et al. 2001, 272; 1996, 313; von der Osten 1930, 68, figs. 69, 70, where 55 cm is given for the diameter of the neck.
349. Wagner (1976, 127) ties the date of the statue to the coins.
350. Bowersock 1973, 137–8; cf. Mitchell (1980, 45) for the first-century A.D. date assigned to the temple at Aşvan Kale. For a reconstruction of parts of the temple superstructure at Zeugma, see Wagner 1976, 114–7, taf. 13. For Bel, Tyche, and Zeus at Dura-Europos, see Millar 2001, 205; cf. Rostovtzeff (1932, 178–88, 203–205) for Tyche and general remarks about the religious architecture of Dura-Europos. For Tyche and the Roman imperial cult in the Near East, see Fischer 2007, 251–252.
351. Wagner 2006, 199 and fig. 5; 1976, 127–9, taf. 20a; Cumont 1917, 137–8, fig. 48. The Athena torso is now in the Gaziantep Museum. In the 1970s Wagner could not find the fragments of the Ares statue mentioned by Cumont, but thought they may have belonged to another limestone fragment of an over life-size leg connected to a base that he observed on the acropolis.
352. Excavated by the French and Turkish rescue campaign of 1999–2000: Nardi and Önal 2003.
353. For a temple of warrior-gods at Dura-Europos serving the needs of the Roman garrison there, see Rostovtzeff 1932, 184. Vitellius performed a *suovetaurilia* for Mars before crossing the Euphrates with the Roman army in A.D. 35: Tacitus *Annales* 6.37; cf. Kennedy 1998a, 145 no. 25; cf. Furneaux 1896, I:640. Crassus also performed a *suovetaurilia* for his crossing at Zeugma in 53 B.C.: Plutarch, *Crassus* 19.3–20.2; cf. Kennedy 1998a, 141, no. 10.
354. E.g., Butcher, volume 3, **C23**, **C35**, **C40**; Wagner 1976, fig. 1, taf. 19; cf. Speidel 1998, 167, 175; Wagner 1977, 529–31. Butcher (1998, 235) interprets the Capricorn as zodiacal on the evidence of Aries on contemporary coins of regional cities.
355. **GD1** (context 2276): Scott, volume 3.
356. Kennedy 1998, 159 (e.g., nos. 91, 94), 242–3. For Christians at Zeugma in the fourth century, see Trombley 2004, 74 (table V). For Christians in Syria and on the eastern Roman frontier, see Blanco 1999, 643–62; Drijvers 1994, 2.124–46; Liebeschuetz 1977, 485–508.
357. Theodoretus *Hist. Eccl.* 5 (*PG* 82.1352–7); cf. Millar 1993, 260–1. Jebel Khalid: Clarke et al. 2002, ix.
358. For the general absence of Syriac in this region, with the excep-

tion of Dura-Europos, see Millar 1993, 241–2, 468, 471; cf. Ball 2000, 446–50. For a Syriac inscription from Birecik dated to A.D. 6, see Millar 1971, 2–5, esp. 3 and n. 25. For examples found in a hypogeum at Apamea, see Abadie-Reynal et al. 1998, 403–6, fig. 26; Abadie-Reynal and Ergeç 1999, 407, figs. 16, 17; cf. Kennedy 1998a, 240 n. 11, 242; Kennedy and Graf 1998, 93; Clarke et al. 2002, ix; Brock 1994, 149–60. But a comparable hypogeum at Yussef Pasha in North Syria preserves inscriptions in Greek bearing names with Semitic roots (Ouabaios and Baroiaros) and in Latin (Flavius Longinus): Clarke 1988, 19–29; Bowersock 1990, 30–1.

359. SF 373 from context 9122 (Trench 9), which is queried in the matrix produced by the excavators, but apparently sealed by Sasanian destruction debris (contexts 9156, 9157, 9159, 9162). Probably a bread stamp. The letters are probably reversed, so that the impression would read forwards, but this was not always the case; cf. Galavaris 1970, 39, fig. 20. A reasonable parallel is a shoe-sole shaped bronze stamp from Naples with an exhortation concerning peace in Hebrew letters: Goodenough 1953, 2.219, 3.1025, who calls it an amulet. For a bronze example in Paris with the same shape, but Greek letters, see Galavaris 1970, 49.
360. Early et al. 2003, 17.
361. Excavations in Trenches 3 and 8 were managed by the Gaziantep Museum in 2000. For part of another chancel screen with a cross motif at Zeugma, see Abadie-Reynal et al. 1996, 321.
362. Kennedy 1998a, 159–60 (no. 95), 242.
363. With Syriac inscriptions: Algaze (1994, 28, Site 3); cf. Comfort and Ergeç 2001, 34; Sinclair 1990, 4.176.
364. Kennedy, 1998, 53 n. 35; cf. Wagner 1976, taf. 7. Comfort et al. 2000, 115.
365. For the architectural parts, see discussion in the chapter by Rous and Aylward in this volume. For a bronze lamp with a cruciform handle in the Gaziantep Museum, see Temizsoy 1989, fig. 108.
366. See the chapter by Crowther in this volume.
367. For recent views on romanization, see Mattingly 2002, 536–40; Webster 2001, 209–17. For acculturation in the ancient Near East, especially north Syria, see Kennedy 1996a, 716, 723–8; Millar 1993, 25–235; 1987b, 143–64; 1971, 1–17; Shaw 1995, 286–96; Sartre 1991, 123–6; MacAdam 1992, 261–3; Bowersock 1990, xi–xii, 7–8 (for the example of Palmyra); Rostovtzeff 1932, 157, 206–7. For the Parthians and phil-Hellenism, see Momigliano 1975, 137–41.
368. For example, the Roman and Parthian fusion in the art of Dura-Europos (Colledge 1967, pl. 11a, 67) and Palmyra (pl. 4, 39, 40, 45). For Parthian art, see Gawlikowski 1997, 46–51; Ghirshman 1962; Rostovtzeff 1932, 147–9, 213–5 who suggests origins in Commagene and north Syria.
369. The Hellenistic burials at Jebel Khalid, dated to the second century B.C., have an assemblage of pottery that is entirely Greek colonial in content, with no signs of a separate indigenous culture (Jackson 2002, 122–4). For the impact of Hellenism in northern Syria, see Millar 1987a, 114.
370. Gawlikowski 1997, 37–54; Van De Mieroop 1997, 241–5; Kennedy 1996a, 703, 707, 723; Bowersock 1989, 64–8; Will 1965, 511–26.
371. See Yon (2006, 216) for funerary inscriptions in rock-cut tombs around Zeugma as evidence for a population with very different ethnic components. See Balty (1988, 93) for the same phenomenon in inscriptions on public buildings at Apamea-on-the-Orontes. See Bowersock (2006, 65, 81, 115) on local assertion of civic individualism within a broader common culture across cities of the eastern Roman Empire. See Clarke et al. (2002, 46) for the plan and design of the Governor's Palace at Jebel Khalid on the Euphrates, built in the third century B.C. with Greek and Near Eastern components.
372. Cf. Kennedy 2006b, 355.
373. See the chapters by Tobin, Dunbabin, and Bergmann in this volume; cf. Abadie-Reynal et al. (2001, 243–9) for the triclinium in Chantier 12.
374. Mosaics at Zeugma have inscriptions in Greek (e.g., Abadie-Reynal et al. 2003, 95–9, figs. 23, 24, 27; Önal 2002, 12–20, 32–3, 38–9, 42–3, 46–51, 54–5, 60–1;). In contrast, contemporary and slightly later mosaics at Edessa have inscriptions in Syriac, including a mosaic depicting the myth of Orpheus dated to A.D. 227/28: Segal 1970, pl. 1–3, 4344; cf. Bowersock 1990, 31; Drijvers 1980, 189–95, pl. 13–17.
375. For Zosimos, see Abadie-Reynal et al. 2003, 97–99, figs. 23, 24, 27. Compare the portrait of Trajan by a (presumably) local sculptor at Hatra: Toynbee 1972, 106–7, pl. 5–7.
376. Greek predominates: Yon 2006, 216. For Latin at Zeugma, see Kennedy 1998a, 240–1; Kennedy and Graf 1998, 93, 107–8; Wagner 1976, 169–71. For a few fragments of Latin inscriptions, especially gravestones of soldiers, found at Zeugma, see Hartmann and Speidel, volume 3, and 2003, 110–2, fig. 13. Algaze (1994, Site 64) identified an abraded Latin inscription not too far from Zeugma. Cf. Abadie-Reynal et al. 2001, 284, fig. 2.34.
377. See the chapters by Herbert and Butcher in volumes 2 and 3.
378. E.g., **BR1** and **BR7**, with good parallels in Roman Britain: Toynbee 1962, figs. 127, 131. For the same assessment about bronze objects from Dura–Europos, see Harden 1950, 179–180. An exception from Zeugma may be **BR1**, a "Millingen"-type trefoil oinochoe with decorative handle dated to the first century B.C. with a striking parallel at Kolhapur (India): De Puma 1991, 86–89, figs. 5.5–5.8.
379. For the redating of the hypocaust bath in block F3 at Dura-Europos to the end of the second century A.D., after the arrival of the Roman army, see Pollard 2004, 132–43; Perkins 1973, 25; cf. Rostovtzeff 1932, 201. The role of the Roman army as a force for the spread of western culture should not be underestimated; cf. Saddington 1989, 413–18.
380. Kennedy 1998a, 37, fig. 3.9; Algaze et al. 1994, 34–5, Site 19 (H). For the western origins, see comments by Waelkens 1989, 79; 1987, 101; cf. Dodge 1990, 112–4.
381. Tırpan 1989, 519–36, with notes on mortared rubble at other sites in Asia Minor and the Near East.
382. The four largest-known chamber tombs each include between 15 and 29 *loculi* respectively; cf. Ergeç 1998, 90–1, fig. 5.14; Başgelen 1999, 170–3; Başgelen and Ergeç 2000, 16–7. Kennedy (1998a, 41–50) suggests that the orientation of the *loculi* parallel to the chamber walls suggests that these may have been family tombs; cf. *loculi* perpendicular to the chamber walls in earlier rock-cut tombs at Apamea: Abadie-Reynal et al. 1999, 355–63, figs. 36, 41; Algaze et al. 1994, figs. 34, 35.
383. For the mix of Roman and Parthian poses, costume, and expression in funerary portraiture found at Zeugma, see Skupinska-Løvset 1985, 101–29; cf. Kennedy 1998a, 241; Abadie-Reynal et al. 2000, 308. For Greek costume in Palmyrene funerary portraiture, including a fusion of Graeco-Roman and Parthian styles with inscriptions in both Greek and Palmyrene, see Ghirshman 1962, 76–7. For Greek influence in Parthian costume, see Curtis 2000, 23–34, esp. 30.
384. Cf. Ball 2000, 165.
385. See the chapter by Kenrick in volume 2; cf. Pollard 2004, 121–5; Abadie-Reynal (2000, 321) for green-glazed wares in Chantier 9. For "Parthian" green-glazed ware at Dura-Europos, a likely source for the material at Zeugma, see Toll 1943. For "Parthian" green-glazed ware in Hellenistic and Roman Syria, see Rostovtzeff 1964, 700, pl. 80.
386. Kennedy 1998a, 39; Kennedy 2006b, 355, 359. For the built environment, Dura-Europos and Palmyra betray far more indigenous character: e.g., Kennedy 1998a, 39; Kennedy 2006, 360.

For this question as it pertains to the architecture of Palmyra, see Weigand 1932, 161–5. For Antioch, see De Giorgi 2007, 297.

387. Bowersock 1989, 64–8. For questions about communications between north Syria and the coast in late antiquity, see Decker 2001, 77.
388. Birley 1988, 132; Speidel 1998, 173; Wagner 1983, 103–29.
389. Butcher 1998, 234.
390. For this Edict of Caracalla, see Hammond 1959, 140–2, 146 n. 12, 479; Birley 1988, 190. For prosperous conditions for trade in Syria under Septimius Severus and Caracalla, see Sidebotham 1986, 166–74.
391. Before the Sasanian sack, soldiers of the *legio IIII Scythica* are attested at Apamea-on-the-Orontes (Balty 1988, 102) and at Dura-Europos in A.D. 209–211 for the refoundation of a Mithraeum (Rostovtzeff et al. 1939, 85 no. 847). For the location of the *legio IIII Scythica* after A.D. 253, see Kennedy 1998a, 54, 239; Speidel 1998, 175–6; Millar 1993, 130; Kennedy and Riley 1990, 137; Birley 1988, 134; Mann 1979, 181; Wagner 1977, 532. Speidel (1998, 176) has suggested that parts remained until Diocletian's reorganization of the frontier; cf. Speidel 1984, 401–3. At some point Roman defenses were evidently relocated to other points on the Euphrates frontier. For example, archaeological evidence shows that to the north of Melitene the fortress at Pağnik Öreni was occupied between ca. A.D. 350–425; cf. Harper 1977, 453–5.
392. Dio Cassius 79.40.1.
393. Kennedy 1998a, 152 no. 55; Liebeschuetz 1972, 140.
394. Butcher 1998, 234.
395. Cf. Millar 1981, 215, 218–9; Frye 1981, 263; Stark 1966, 263–5.
396. Some of these single finds may in fact belong to hoards, but they are not catalogued as such: see discussion in Butcher, volume 3.
397. See the chapter by Tobin in this volume. Further evidence of the same phenomenon is clear in houses discovered by other excavators, including the House of the Dionysus and Ariadne Mosaic (Kennedy 1998a, 39; Ergeç 1998, 87, 89, fig. 5.3), the house in Chantier 12 (Abadie-Reynal et al. 2000, 291), and the house in Trench 6 (Abadie-Reynal et al. 2001, 270).
398. See the description of the houses in the chapter by Tobin; cf. Abadie-Reynal 2006, 3, 5.
399. Earthen floors and perforations in wall blocks for possible animal tethers led the excavators to this conclusion. For people living above livestock in their houses, see Kennedy 2006b, 361.
400. See the description of the graffiti in the chapter by Coleman and Benefiel; cf. Kennedy and Freeman (1998, 67) for graffiti on painted plaster in the house at Site D showing crude ladders.
401. See the description of the painted plaster in the chapter by Bergmann in this volume.
402. Abadie-Reynal et al. 2000, 321 (Chantier 9).
403. Mosaic tesserae have been found inside an amphora from a Roman shipwreck off the south coast of France. For tesserae salvaged and recycled for a church at ninth- and 10th-century Amorium, see Lightfoot 2005, 181; Lightfoot et al. 2004, figs. 13, 14, 15 (section by Witte-Orr).
404. For harvest of building materials from buildings destined for demolition or destruction, see Boon 1966, 41; Clarke 2001, 224, fig. 20.
405. Barbalissus: Olmstead 1942, 401–2. Antioch: Ammianus Marcellinus 23.5.3; Barnes 1998, 137; Downey 1963, 112; 1961, 587–95 gives all the primary sources and suggests a date of A.D. 256 for the first capture of Antioch.
406. Citizens also fled Antioch before the Sasanians took the city: Olmstead 1942, 401–2. Carrhae was apparently evacuated before a Sasanian attack in A.D. 359: Ammianus Marcellinus 18.7.3.
407. Compare the skeletons of armored warriors found at Dura-Europos: Hopkins 1947, 254–5, fig. 4; Rostovtzeff et al. 1936, 188–205, pl. 18.3; Rostovtzeff 1932, 174–5. For Zeugma, the only possible exception is a lapdog, a common Roman pet, in the House of the Helmets, but the only evidence for it is a jawbone fragment from context 2238. Other parts of the skeleton were not found. This is the only evidence from the rescue excavations for a casualty of the Sasanian attack. For Roman lapdogs, see Amat 2002, 63–7; Lazenby 1949, 246; Juvenal *Satire* 7.654; Plutarch *Moralia* 472C. For dogs of small build at the Iron Age site of Tell Afis in Syria, see Wilkens 2000, 5–14.
408. For example, ceramic vessels collapsed from a shelf in the House of the Helmets: Plate 30C. Glass vessels and iron knives and keys were found collapsed from niches in the House of the Dionysus and Ariadne Mosaic from previous excavations at Zeugma (Ergeç 1998, 83, 88).
409. See the chapter by Butcher in volume 3, and table 6, p. 9, in this chapter.
410. See the chapter by Tobin for descriptions of finds from the destruction deposits, the chapter by Cole for evidence of textile domestic furnishings (**TX4–7**, **TX10–12**, **TX15**, **TX18**, **TX20**), and chapters by Scott and Khamis for metal fittings that attest to wooden furnishings lost in the fire (**IR98–268**, **BR145**, **BR147–148**, **BR150**).
411. In at least one case a lock had been broken in antiquity: **IR322**. See the objects in bronze and iron in the chapters by Khamis (**BR55**, **BR62–68**, **BR100**) and Scott (**IR304–381**) in volume 3. For other locks and keys from Zeugma, see Dieudonné-Glad 2006, 43–47. The Byzantine "lock shop" at Sardis is also known for a sizable corpus of locks and keys, but from a single center of production instead of Zeugma's many domestic contexts; cf. Waldbaum 1983, 69–76.
412. Campbell et al. 1998, fig. 7.7.
413. Nardi and Önal 2003. Compare, for example, the partial dismantling of homes and safe storage of building materials in anticipation of the sack of Halieis. For archaeological formation processes involving abandonment with a planned return, see Schiffer 1987, 92. Although not connected to Sasanian destruction deposits, a broken, life-size, white marble Roman copy of a Hellenistic philosopher portrait found in a large drain below Chantier 9 may have also been deliberately hidden on the eve of the sack: cf. Abadie-Reynal et al. 1998, 392, fig. 15. The statue's poor state of preservation argues against this scenario, but the damage could be later, and even inflicted by modern looters. It is also possible that the statue was hidden there in the modern era.
414. Ammianus Marcellinus 25.9.6; cf. 25.7.11, 25.9.1–5; cf. Matthews 1989, 4; Drijvers 1984, 4.29–30; Crump 1975, 59; Stark 1966, 353. Translation: Loeb Classical Library (1940), by J.C. Rolfe, with a note (II.550) on similarities between the language employed by Ammianus and Vergil (*Aeneid* 2.490 for the sack of Troy), Livy (1.29 for the destruction of Alba Longa), and Valerius Flaccus (4.373 for the wandering of Io). It would be rash to rule out Sasanian sympathizers who may have remained behind at Zeugma; cf. Olmstead 1942, 404. For sources and commentary on the peace of Jovian, see Greatrex and Lieu 2002, 1–13.
415. Millar 1981, 218; Frye 1981, 264; Kennedy 1998a, 155, no. 69. Ghirshman (1962, 141, figs. 180–6) suggests that polychrome figural mosaics in the palace of Shapur I at Bishapur were made by Roman artists captured in Shapur's conquests of the middle third century.
416. Xerxes' capture of Antenor's statue of the Tyrannicides from Athens is a famous precedent. For bronze statues in caravan trade at Palmyra, see Colledge 1967, 84, 163–4; Rostovtzeff 1964, 863, pl. 98; Seyrig 1939, 177–94. For bronze statues at Apamea-on-the-Orontes: Balty 1988, 92, 93.
417. For another image of the gold ring, see GAP-RDA 2001, 95. For an engraved gemstone from Chantier 5, see Abadie-Reynal et al. 1998, 388.
418. Shaw 1995, 286–7.

419. Sartre 2002, 56 (a single mention); Sartre 2001 and Butcher 2003 include only a few passing references to the city as a transit point on the Euphrates.
420. See the chapter by Herbert in volume 2; cf. Önal 2000, 30–4. For sealings from nearby Doliche, see Weiß 2000, 100–3.
421. For ancient Euphrates caravan routes, see Millar 1998; Stark 1966, 108–12; Dillemann 1963; Poidebard 1934; Rostovtzeff 1964, 864–9; 1932, 95. Rostovtzeff (e.g., 1932, 25) exaggerated the importance of caravan trade for Syria: Butcher 2003, 184; Downey 2004, 591; Bowersock 1989, 63–80.
422. "[Dura] was never a large or wealthy town or an important centre of political life; it was a small provincial city lost on the boundaries of two civilizations, the Greek and the Parthian" (Rostovtzeff 1932, 158).
423. In smaller cities and towns of inland Syria local culture must have been stronger than in Antioch, a center of Hellenic culture and third city of the Roman Empire: cf. Sartre 1991, 335–49; MacAdam 1992, 263; Liebeschuetz 1972, 140. Antioch was a destination; Zeugma was a short stop on the way to someplace else.
424. Stark 1966, 215–6.
425. Pliny *HN* 5.21 (86–87); cf. Gawlikowski 1996, 123–33.
426. For work at Apamea prior to 2000, see annual reports by Abadie-Reynal et al. in *Anatolia Antiqua*.
427. Algaze et al. 1994; Gaborit 2007.
428. Kennedy 1998, 41–53, figs. 3.1, 8, 9, 14–30.
429. Bounni 1979, 1–7. For the later Tishrin Dam on the upper Syrian Euphrates, see Olmo Lete and Montero Fenollós 1999.
430. Austin 2003, 36–41; Childs-Johnson et al. 1996, 38–43.
431. Wilford 2007; Lacey 2005.
432. See Himelfarb 2001 for the Narmada dam project. For dams and archaeology in general, see Wilkie 2002.
433. Mitchell 1980.
434. Serdaroğlu 1977.
435. Zoroğlu 2000, 74–83, esp. abb. 99, 100; Kennedy 1998a, 17–8; Kennedy 1998b, 556–8. The dam was completed in 1991, but Samosata was already submerged by the late 1980s.
436. Gaborit 2007; Shoup 2006; Komurcu 2000; Başgelen 2000, 2–5; Lorenz and Erickson 1999; Algaze 1992, 3–15; Kolars and Mitchell 1991, esp. 18–45, 77–84, 259–82. For earlier observations about water management on the Euphrates, and for projections about dams and reservoirs, see Willcocks 1917, ix–x; Huntington 1902, 199–200.
437. Carleton and Garen 2008; Boulton 2002; Kitchen and Ronayne 2001; Young 2000.
438. Tuna et al. 2001; Tuna and Özturk 1999; Mitchell 1980.

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