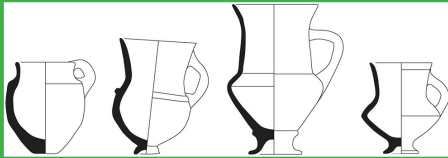
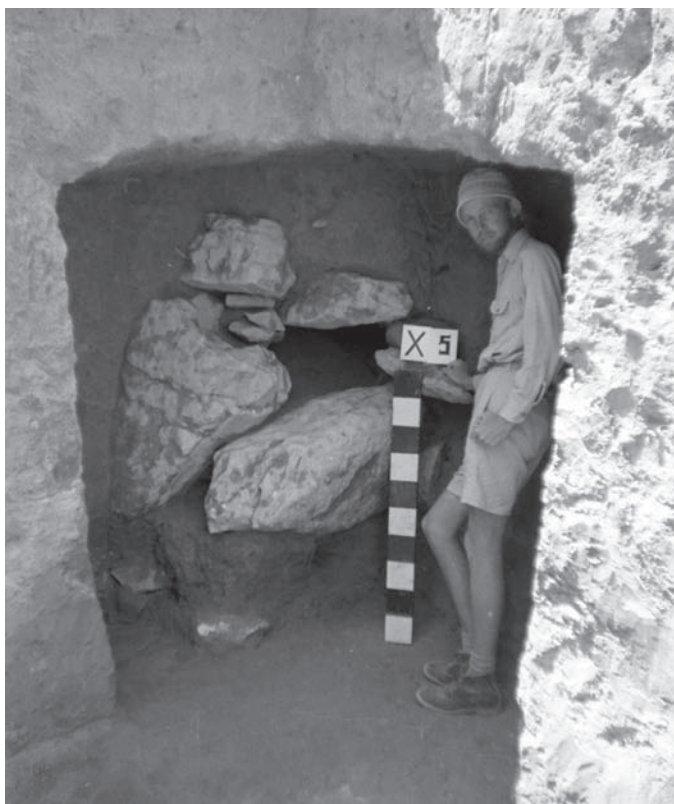


Hasanlu V

The Late Bronze and Iron I Periods



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Robert H. Dyson at the entrance to stone tomb SK49 in Operation X (1958).

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Michael D. Danti

with contributions by
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*This Book is Dedicated to
Professor Gordon D. Young (1936–2012)
Long-Time Professor of Ancient History at Purdue University
Mentor, Scholar, Raconteur, and Friend
So Many of Us Owe You So Much*

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Abbreviations

BB	Burned Building
BIB-IRAN	Bibliographie analytique de l'archéologie de l'Iran ancien
BM	British Museum
Deco.	Decoration
Dia.	Diameter
Disc.	Discarded
EBA	Early Bronze Age
ETC	Early Transcaucasian
EWGW	Early Western Grey Ware <i>sensu</i> Young 1965 (Early MBW)
GW	Middle Bronze Age Grey Ware
H.	Height
HAS	Hasanlu Field Number Prefix
HF	Hajji Firuz Field Number Prefix
KW	Khabur Ware
L.	Length
LBA	Late Bronze Age
LWBW	Late Western Buff Ware
LWGW	Late Western Grey Ware <i>sensu</i> Young 1965 (Late MBW)
MBA	Middle Bronze Age
MBW	Monochrome Burnished Ware, previously "Grey Ware"
MMA	Metropolitan Museum (New York, NY) Accession Number
NR	Not Recorded
OW	Orange Ware
PKW	Painted Khabur Ware
POW	Painted Orange Ware
RLA	Reallexikon der Assyriologie und Vorderasiatische Archäologie
ROM	Royal Ontario Museum
SK	Skeleton Number (Hasanlu)
Str.	Stratum
SW	Simple Ware
TM	Tehran Museum
UPM	University of Pennsylvania Museum Registration Number
W.	Width
WBW	Western Buff Ware <i>sensu</i> Young 1965

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Acknowledgments

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I began working on Hasanlu V many years ago, and the project has necessitated sacrifices on several

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of archaeologists so often do. They probably believe that their father is glued to his desk chair when not in Syria, Iran, or Iraq, and at this point they know many of the Hasanlu excavators by name.

Preface

For those versed in Near Eastern archaeology, Hasanlu Tepe usually conjures up images of an Iron Age II (1050–800 BC) sacked and burned citadel with thousands of *in situ* objects, over 250 human victims lying where they originally fell in the final stages of the onslaught, and monumental columned-hall buildings, all unusually well preserved by burning and rapid, often almost immediate, deposition. With its frozen moments in time and rich material record, Hasanlu IVb is often presented as the Pompeii of early Iron Age Iran. I often refer to its Iron II level as the grisly physical evidence of the realities of warfare blithely depicted in Assyrian reliefs and other contemporary art and documented in texts. We can only guess at the identities of the perpetrators of this crime, although Urartu seems a likely suspect.

With its archaeological fame thus firmly established, it is easy to forget that Hasanlu was also instrumental in the development of the archaeological chronology of Iran and the definition of several archaeological horizons, key among them the Early and Late Western Grey Ware horizons (EWGW and LWGW, respectively), which enjoy almost celebrity status (for some, perhaps, infamy) in Iranian archaeological circles. The appearance of the EWGW horizon has held a special fascination in Near Eastern archaeology as one of the premier datasets bearing on possible ancient migrations and the capacity of archaeology as a discipline to cope with such events. The topic is quite an intellectual thicket given the dating of EWGW and its associations. The horizon appeared and thrived during the

protohistoric era when we have only tantalizing textual hints regarding happenings in northwestern Iran. Further, EWGW origins have long been entangled with Indo-European and Indo-Iranian migration theory, a veritable scholarly minefield. The origin and development of the EWGW horizon in the southern Lake Urmia Basin are the subjects of this volume, the result of a long-term research project ultimately aimed at the final publication of Hasanlu IVb. The story of Hasanlu IVb begins with Hasanlu V in the 2nd millennium BC—many of the details may come as a surprise.

Perhaps the most recognizable artifact from Hasanlu is the gold bowl (a large beaker, in fact), most often pictured being held aloft by one of its excited discoverers in 1958 as shown in full color in the pages of *Life* magazine in 1959. Were I to choose the poster artifact of the archaeological horizon, however, it would surely be the bridgeless-spouted jar in highly burnished Grey Ware (hereafter called Monochrome Burnished Ware or MBW), or for that matter so-called Late Western Grey Ware more generally (hereafter Late MBW). Understanding the Late MBW horizon and its precursor, the Early MBW horizon (formerly EWGW), is crucial to Iranian archaeology, yet little has been published from the essential sites. Our current view is far too dependent on early, unsystematic, and poorly published excavations, especially chronologically floating cemeteries, and the scrapings left by looters and commercial antiquities dealers. Unlike most other excavated sites, Hasanlu provides occupation deposits. While Late MBW from Iron II Hasanlu

is still poorly known, the situation is even less satisfactory for the rarer and even lesser-known MBW levels which precede the burned citadel, originally dated to 1450–1050 BC and designated Hasanlu V/Iron I. This dataset is supplemented by neighboring Dinkha Tepe, where graves and trash deposits of this same period are labeled Dinkha Period III. In the traditional view, Hasanlu V follows on the heels of a strong foreign presence in the southern Lake Urmia Basin (Hasanlu VIb) characterized by a Khabur Ware (KW) assemblage of Mesopotamian inspiration, if not derivation, dating to the early-to-mid 2nd millennium BC. The apparent disjunction between Hasanlu VI and V (Dinkha IV and III) has inspired a great deal of hypothesizing regarding the contributing cultural processes, with consensus gravitating around a complete break with the previous “Bronze Age” cultural traditions precipitated by the arrival of newcomers. A hiatus or gap in occupation has occasionally been inserted between the periods. Such interpretations were often cast in tones of the “Iranianization” of the region, but direct links to specific ethnic groups have since generally been eschewed. Thirty-five years after the close of excavations at Hasanlu Tepe, Hasanlu V still stands as the archetype of the earliest “Iron Age” in western Iran. Yet relative to the amount of generalizing interpretation, the publication record is a virtual *tabula rasa* with regard to data presentation and middle-range theorizing.

Between 1956 and 1977, Robert H. Dyson, Jr., directed the excavations at Hasanlu and at a number of neighboring sites, forever changing our understanding of northwestern Iran in antiquity. The discoveries in the rich Iron II citadel of Hasanlu catapulted Dyson to fame and placed increasing demands on his time, culminating in a stint as the Dean of the College of Arts and Sciences at the University of Pennsylvania and in a long term of service as the Director of the UPM. Bob has always been an active researcher, teacher, and leader in the field of archaeology and, as his career developed, the publication of Hasanlu took a backseat to other tasks. Having worked with Bob on a daily basis for seven years, first as a draftsman as I completed my dissertation at the UPM and later as a young postdoctoral scholar working on Hasanlu, I can attest to his concerns over the course the Hasanlu Project had taken with regard to publication. Probably most troubling to him was the extent to which archaeology had changed since the late 1950s and 1960s. Work

at Hasanlu spanned three momentous decades in the history of archaeology in terms of its methodological and theoretical development. The Hasanlu excavations of the 1950s and early 1960s markedly contrast with those conducted in the 1970s, and so too the final seasons of the Hasanlu Project compare somewhat unfavorably with today’s standards. This has made writing the Excavation Reports challenging. Moreover, the publication of specialized studies of select bodies of data in advance of detailed examinations of archaeological contexts has compounded these difficulties.

I benefited greatly from my time spent working on the excavation records with Bob. My first work on Hasanlu focused on its earliest extensively excavated level (Danti, Voigt, and Dyson 2000). This task entailed analyzing the entire sequence of the site using the U22 Sounding. I was quickly drawn to the 2nd millennium BC material and questions regarding the origins of the MBW archaeological horizon. I was especially inspired to re-evaluate the chronology and cultural processes of the period by a memorable conversation with Bob in my first year as a draftsman. I had made some comment on the presence of ceramics of Middle Bronze Age (MBA) date at Hasanlu with parallels to Mesopotamia and was promptly corrected that there was no “Middle Bronze Age” in Iran. Bob inculcated the dictum, “Your Mesopotamian Middle Bronze Age is the Late Bronze Age in Iran, and your Late Bronze Age is our early Iron Age.” I was intrigued by the prospect of investigating how and why such a singular application of archaeological terminology had emerged in a region of Iran with close ties to northern Mesopotamia, but these interests had to wait. My first solo act was to prepare the Excavation Report on the site’s Ilkhanid occupation (Danti 2004).

This re-analysis and excavation report on Hasanlu V has led to a major reassessment of the period, which is better attested in terms of excavated exposures and depth of stratified deposits than has hitherto been reported. Much material previously designated Hasanlu V in fact belongs to Dyson’s subperiod Hasanlu IVc/Iron Age IIa (1250–1050 BC) in terms of absolute chronology. Dyson originally defined Period IVc as the period during which the Hasanlu citadel was extensively remodeled, an undertaking which he first identified in the construction sequence of certain monumental columned-hall buildings. While Dyson’s subdivision of the unwieldy 450 years of the old pe-

riod “Hasanlu V” was a crucial step toward improved interpretation, the subperiod has lacked the underpinnings of an extensive re-analysis of the Hasanlu dataset beyond the architectural phasing of the columned halls: previously we have had only a rudimentary understanding of Hasanlu IVc material culture. I argue here that Hasanlu IVc should be re-designated the Iron I, and Hasanlu V (1450–1250 BC) should now be termed the Late Bronze Age (LBA). Previous definitions of “Period V” were heavily weighted toward the latter part of its original time range—that is, Hasanlu IVc. As with most periods at Hasanlu prior to the Urratian (Hasanlu IIIc) and Achaemenid Periods (Hasanlu IIIa), Period IVc exhibits some ties to northern Mesopotamia in terms of both cultural contacts and developmental sequence. The proposed break between Hasanlu V and Hasanlu VI (herein Hasanlu VIb), the “great divide” between the Bronze and Iron Ages, has also proved to be misleading, and the situations at Hasanlu and Dinkha Tepe are far more complex than previously reported. Previous assessments of the MBW horizon have presented it as arriving suddenly in western Iran in a fully developed form; closer inspection, however, has shown the oft-cited marked contrast in material culture between “Hasanlu V” and “Hasanlu VI” is due to the invalid comparison of what were in effect the late LBA and Iron I to the MBII, in the terminology of Mesopotamia. Hasanlu Period VIa or the MBIII (1600–1450 BC), attested at Dinkha and Hasanlu, represents the transition from Period VIb to Period V and exhibits cultural continuity.

This work constitutes the Excavation Report on Periods VIa, V, and IVc and at the same time provides a reappraisal of earlier interpretations. The volume is divided into seven chapters. Chapter One presents an overview of the Ušnu-Solduz region, especially the southern Lake Urmia Basin, located in northwestern Iran. I have attempted to pull together the numerous archaeological surveys and reconnaissance projects conducted by the Hasanlu Project with a comprehensive site catalog and regional map. Chapter Two provides a chronological overview of how we have arrived at the prevailing archaeological chronology of northwestern Iran and how scholars have interpreted the Early MBW horizon set against the story of the Hasanlu Project. I strongly advocate the revision of the terminology and periodization used for the 2nd

millennium BC. Chapter Three details for the first time the stratigraphy and architecture of mid-to-late 2nd millennium BC Hasanlu, and Dinkha III–IV are briefly reviewed, as well. The relevant radiocarbon dates are also recalibrated and included. The Early MBW horizon did not arrive in Ušnu-Solduz fully developed in a single event, and the gap proposed between Hasanlu VI and V (Dinkha IV and III) is nonexistent in the region. Chapter Four provides the results of my detailed study of the ceramics of Hasanlu along with some crucial material from Dinkha. Virtually none of this material has been previously published, and in fact some of it of MBIII date had clearly not been examined since it was first brought from Iran to the UPM. The chapter begins with a look at the MBII, with special attention dedicated to the final phase of this period, which I designate the Terminal MBII—essentially the 17th century BC. This period and the newly defined MBIII form the transition to the Early MBW horizon of the LBA or Hasanlu V. Assemblages from Hasanlu Periods VIa, V, and IVc are presented in detail—these were largely lumped together in the former “Hasanlu V.” The early stages of the Early MBW horizon in northwestern Iran exhibit a great deal of regional variation in ceramics, followed by inter-assemblage convergence by the Late MBW horizon. The assemblages of the MBIII and LBA testify to strong influences from the southern Caucasus and northern Mesopotamia. I argue that the assemblages of the Early MBW horizon did not arrive in northwestern Iran in a fully developed form in a punctuated manner. Ties to the Caucasus and northern Mesopotamia are far better attested than are links to northeastern Iran and southwestern Central Asia. The graves of Hasanlu VI, V, and IVc form the subject of Chapter Five, which out of necessity reviews the graves of Dinkha III. This is the first time the Hasanlu graves have been presented. The dichotomy between intramural and extramural burial has long been argued to represent the Bronze Age and Early Iron Age, respectively. This distinction is unsupported. In Chapter Six, Megan Cifarelli presents her analysis of the personal ornaments from the Hasanlu graves. Finally, Chapter Seven details my conclusions on the MBW horizon as seen at Hasanlu and the implications of the revisions detailed here on our broader understanding of the later 2nd millennium BC.

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Ušnu-Solduz and the Lake Urmia Region in the Later 2nd Millennium BC

Iran is a complex geographical area ... this diversity of environment led to multiple cultural adaptations in prehistoric times, making cultural generalizations difficult. For this reason, archaeologists working in the area have concentrated on the development of stratified regional sequences before undertaking studies of major time periods as such.

— Voigt and Dyson 1992:122

This chapter presents the environmental and cultural backdrop of the core area of the Early Western Grey Ware (EWGW) archaeological horizon of the later 2nd millennium BC as defined by T. Cuyler Young (1965), which has long been associated with the earliest Iron Age in Iran and wave migration and population replacement theories (Dyson 1977b). The area concerned, broadly construed, is northwestern Iran, but in particular our subject area is found at the heart of this upland zone, the Lake Urmia Basin and its premier excavated site, Hasanlu Tepe, located in the Solduz valley of the southern basin (Fig. 1.1; see color insert). The EWGW horizon was first explored in detail here, and Hasanlu played a profound role in shaping the archaeological chronology of Iran at a time when other archaeological sequences remained rudimentary. The reasons for this are straightforward: Hasanlu was one of the first high, well-stratified mounds (*tepe*) to be extensively excavated using modern techniques and the site provided occupation deposits, a massive destruction level datable to the Iron

II period, and vast cemeteries on the Low Mound with abundant grave goods.

Any assessment of the origins and development of the so-called Grey Ware horizon of northwestern Iran must address, in some manner, its environmental context. In northwestern Iran, these contexts consist of relatively isolated mountain valleys with distinct environmental conditions and resources; the region has thus traditionally been typified by marked cultural diversity. This presents certain obstacles to archaeologists seeking to reconstruct larger cultural patterns, since building chronologies can be a daunting task given the limited historical record. One relative constant shared by local populations across time is a heavy emphasis on a form of pastoralism, which follows a pattern of bi-seasonal vertical transhumance. Some regions—such as the Urmia and Ušnu-Solduz valleys—provide ample arable land and irrigation sources. This has contributed to patterns of fairly continuous occupation in these regions and the development of large mounded sites with long archaeological sequences, partly owing to a preference for mudbrick and *chineh* (packed mud) architecture and partly to conditions conducive to the preservation of such materials. Neighboring areas, in contrast, suffer from salinity, higher altitudes, steep slopes, and a scarcity of arable land, and hence have been characterized by a higher degree of pastoral transhumance, a lower density of settlement, and construction techniques which utilize terracing and stone and wooden beam construction, resulting in relatively ephemeral and unstratified archaeological remains.

While the above quote from Dyson and Voigt is apt with regard to the prehistoric periods in Iran, I would contend the exact opposite in fact typifies archaeological research into protohistoric periods. Speculation on the origins and character of the Iranian “Iron Age” followed fast on the heels of the first phase of exploratory, haphazard excavation in widely divergent locales, and it was not until the 1970s that some key regions had archaeological sequences worthy of the moniker—that is, long after theories regarding the origins of the “Grey Ware Culture” had become deeply entrenched. Major lacunae continue to plague archaeologists. Many regions, such as the valley systems immediately south of Ušnu-Solduz and the crucial Sidakan/Mudjesir Valley to the southwest that leads to Assyria, remain largely unexplored (Boehmer 1973, 1979; Boehmer 1993–1997; Boehmer and Fenner 1973; Radner 2012). The field has also suffered from a lack of detailed archaeological reporting. The main objectives of the current volume are to provide the final report on all material of the later 2nd millennium from Hasanlu, as well as a revised assessment of the Hasanlu sequence of Ušnu-Solduz, widely believed to be one of the most complete and considered one of the most influential in the archaeology of Iran. At times the details are not glamorous, but given that so much interpretive superstructure has been built on this (somewhat unstable) foundation, it is high time it be made available.

The “Grey Ware” phenomenon in north-central Iran has recently been broken down spatially and temporally into more discrete units (Piller 2004). This trend will likely continue as data accumulates, and it underscores how we are just beginning to build regional sequences capable of addressing cultural processes such as demic diffusion—arguably the most popular theory explaining Grey Ware’s origins in western Iran—although this is certainly not to be taken as an endorsement of any link between “Grey Ware” and Iranians or any other ethnonym. On the contrary, the reanalysis of the archaeological record undertaken for this volume falsifies the punctuated migratory wave model and population replacement model for explaining culture change in Ušnu-Solduz in the 2nd millennium BC. As in other areas of northern and western Iran, the Grey Ware horizon, herein redefined and renamed the Monochrome Burnished Ware (MBW) horizon, developed from the local

MBA archaeological cultures and only became a coherent spatial horizon in the late 2nd millennium BC. There is no evidence for a migratory wave or sudden population replacement, as such migrations are historically extremely rare (Anthony 1990, 1992, 1997; Burmeister 2000:540); the possibility of a long-term, gradual infiltration of the region by migrants (a steady migratory stream), however, remains a distinct possibility. After all, migration is a demographic constant in most populations and, with regard to the case at hand, can only be fully addressed after the vast data set attributable to the Hasanlu IVb period has been completely analyzed.

The Lake Urmia Basin

Lake Urmia lies in northwestern Iran, in the Zagros Mountains, which straddle the modern Iranian provinces of Eastern and Western Azerbaijan. The line of demarcation between the modern Iranian provinces of Azerbaijan and Kurdistan, to the south, is artificial; this area has traditionally shared tribal and ethnic groups since antiquity. In archaeological terms, the region of interest with regard to the later 2nd millennium BC extends beyond the northern border of Iran into Nakhichevan, southern Armenia, and the Republic of Azerbaijan, and it is closely affiliated with eastern Anatolia, the southern and western Caspian littoral, and the region stretching from Takab and Qazvin eastward along the southern flanks of the Elburz and southward, skirting the eastern Zagros to the environs of Kashan (Fig. 1.2; see color insert). A number of archaeological surveys have been conducted in the lake region over the last 50 years, but the results have not always been published (Burney and Lang 1971:5) and the methodologies employed have differed markedly (see the annual reports of Kleiss in *Archäologische Mitteilungen aus Iran*; Kroll 1994a, 2005, and sources cited therein; Pecorella and Salvini 1984; Swiny 1975). The Lake Urmia Basin is today one of the most densely settled and agriculturally productive parts of Iran, the preeminent urban center being the city of Tabriz. Lake Urmia and its adjacent valleys are hemmed in by high mountains in most places; the valleys provide important lines of communication through nearby high mountain passes—the lake basin thus forms a hub for a number of overland routes. A number of rivers flow

into the lake and water the valleys, and these have been settled fairly continuously from the 6th millennium BC (Voigt 1983).

Geology

The Lake Urmia Basin is an intermontane plateau (1300 m AMSL) situated in the Northwest Zagros geographic zone (Fisher 1968, 1971). The Zagros orogen was created by the opening and closing of the Neo-Tethys Ocean and consists of three parallel tectonic zones (Alavi 1994; Stöcklin and Setudinia 1972); from southwest to northeast, these are the Zagros Simply Folded Belt, the Sanandaj-Sirjan Zone, and the Urmia-Dokhtar Magmatic Arc (Stöcklin and Setudinia 1972). The Zagros in the vicinity of the southern Lake Urmia Basin attains peaks of 2500 m AMSL and, in the east, Mount Sahand (Kuh-i Sahand)—a much-eroded stratovolcano—rises to 3707 m. The area is tectonically active, forming part of a mush zone between the colliding Arabian and Eurasian plates (McKenzie 1972, 1976); the folding and faulting, as well as differential tectonic movement along the fault lines, has produced a table-land of horsts and graben (downthrow basins) and igneous extrusions. The Lake Urmia Basin is the largest of these subsiding tectonic basins, measuring 50,000 km² (Berberian and Arshadi 1975). Andesitic and rhyodactitic volcanism ranges in date from the Oligocene to Recent,¹ the most noteworthy being the massive calc-alkaline Sahand Complex, as well as several smaller outcroppings along the lake's eastern shore and forming parts of the Shahi Peninsula (Kelts and Shahrabi 1986).

The Lake Urmia Basin exhibits a varied lithology. To the west, in the Zagros-proper, are metamorphic outcrops of the Palaeozoic. In the east, Mesozoic flysch extends up to the shoreline of the lake and makes up some of the islands. The northwest shore has coralline limestones of the Lower Miocene (Qom Formation). The north margins of the basin and the northeast are dominated by the Middle Miocene continental Fars Formation of lower evaporite marl series and upper red bed conglomerate series. Several Miocene salt domes penetrate the surface, contributing to salinity in runoff water. The verticality, varied geology, and volcanism contribute to the mosaic landscape typified by marked environmental and cultural diversity.

Hydrology

Lake Urmia

Lake Urmia is one of the world's largest saline lakes at 5000 km²—or 140 km long and 15–50 km wide—lying at 1200 m AMSL. The lake is shallow (8–12 m) and hypersaline (>200 g/l, or 22% sodium chloride–sulfate brine) (Fisher 1968:10–12; Kelts and Shahrabi 1986; Sharifi 2002). The streams and rivers that feed the lake collect the salt as they pass through volcanic deposits and catchments of Miocene marine evaporites laden with soluble salts. The absence of an outlet also contributes to the lake's salinity. Due to the high saline content, the lake does not freeze in winter. Lake size has varied markedly over time, ranging between 5000 and 6000 km² based on precipitation (Günther 1899). While the saline lake only minimally contributes to the local economy, it does ameliorate the mountain climate in its surrounding littoral.

The lake is supplied by 13 permanent rivers, smaller perennial and seasonal streams, and direct precipitation. Historically, the locations of these rivers have played a profound role in shaping the sociopolitical and economic landscapes and often appear to have constituted discrete territories in antiquity. The main tributaries are the Talkeh Rud, Zarinah Rud, Zola Çay, and Barandüz Çay (Fig. 1.2). A large proportion of the lake's salt content is carried by the Talkeh Rud, which flows through Tabriz. The river has a gentle gradient (3/5000) with high infiltrations and evaporation (Kelts and Shahrabi 1986:110). Large mudflats flank the Talkeh's inlet. At the south end of the lake is the Zarinah Rud, another major tributary, which has the least saline charge of all the rivers that feed into the lake and has its catchment in the highlands of Kurdistan. The south of the lake has a mixture of saltwater and freshwater swamps and lakes.

Due to its salinity, the lake supports nearly no aquatic life with the exception of *Artemia salina* brine shrimp and leafy green algae. Similar to Lake Van in eastern Turkey, Lake Urmia provides paleoclimatologists with a potential source of data on ancient climate, although Lake Urmia has not been studied in such detail. Limnology and lithology studies show lacustrine formation atop a desiccation Playa phase with sedimentation mainly consisting of authigenic aragonite and fecal pellets from shrimp (Kelts and Shahrabi

1986). The shorelines in the north consist in part of coalescing alluvial fan aprons deposited by perennial and seasonal streams and rivers, which merge into salt marshes and extensive mudflats. There are 34 small islands in the lake that have provided botanists with valuable remnant plant communities to study. Some of the larger islands have freshwater springs and were occasionally settled in the past. Despite the salinity of Lake Urmia, the surrounding region has an abundance of freshwater. Wells provide freshwater up to a depth of 30 m thanks to a high hydraulic gradient that forces freshwater toward the lake (Kelts and Shahrabi 1986:111).

Gadar River and Its Tributaries

The Gadar River, the most important water source in Uşnu-Solduz, rises in the western Zagros near the Iran-Iraq-Turkey border. The river was a major focus of settlement in antiquity—the other being the freshwater lake of Şur Gol (Fig. 1.3, see color insert). The Gadar and its tributaries are cut in, especially in the west (Fisher 1968:9–10; 1971:268–69, fig. 13:2). The river flows southeast, eventually discharging into salt flats and marshes south of the lakeshore. It drains an area of roughly 1,900 km² (Voigt 1977:307) and has changed its course over time as evidenced by abandoned channels, oxbows, and the siting of linear arrangements of ancient settlements (Fig. 1.3). Voigt has noted “a line of Iron Age sites in association with a fossil riverbed indicates that during the late second and early first millennium B.C. the Gadar flowed near the southern edge of the valley floor” (1983:273). In eastern Solduz the river slows and is not as deeply entrenched; here, irrigation is more feasible, which in part accounts for the historically denser settlement there. The Gadar provided an important line of communication across the southern Lake Urmia Basin linking northeast Mesopotamia and the Iranian Plateau, and this surely influenced cultural development there over the *longue durée*.

Climate

Modern Climate

The Lake Urmia Basin has a Mediterranean pluviseasonal-continental climate regime (Djamali et al.

2008:414; Rivas-Martinez, Sánchez-Mata, and Costa 1999). Temperatures generally range from 0–20°C. The mean annual temperature and precipitation in Urmia from 1951–2000 were 11.2°C and 341 mm, respectively. Mean maximum and minimum temperatures occur in July (23.9°C) and January (–2.5°C). Summer maximum temperatures can reach 40°C and winter minimum temperatures –32°C. The lake mitigates seasonal temperature extremes to some extent. The area is arid, with most precipitation falling in winter and spring. Precipitation is highest in the western Lake Urmia Basin. The rainy season begins in October, with most rainfall occurring in March–May. The lake basin branches into a number of valley systems cut by surrounding rivers and streams that receive their charge from precipitation and snow melt originating in the mountains and uplands. Although precipitation is fairly low throughout much of the region, it falls mainly in the winter and spring rainy seasons in punctuated events, cutting deep valleys and gorges in the mountains and depositing allogenic material in the lake basin and in the lake itself. The region is often cut off from neighboring areas in winter months, as mountain passes are blocked by snowfall. This had a profound impact on populations in antiquity and is most noticeable in historical sources in the prevalence of transhumant pastoralism and the seasonal character of warfare—winter is one of the western Zagros’ most formidable bulwarks. Winds prevail from the west during the winter; in the summer, winds are out of the northeast. Spring is characterized by strong southwesterlies.

Proxy Datasets

Cores taken from Lake Urmia have provided an important local proxy dataset on climate and local plant communities stretching back to 13,200 BP. The important cores are numbers 20 and 21 (Bottema 1986; Kelts and Shahrabi 1986). Other datasets on climate and environment include the pollen cores from Lake Zeribar and Lake Mirabad (Wright 1980; van Zeist 1967:304). Core 20 yielded two radiocarbon dates for its upper part. Limnology has shown that the deposition of detrital minerals on the lake bottom, primarily allogenic aragonite, is directly related to the prevalence of *Artemisia* steppe in the area around the lake (Bottema 1986). High occurrences of *Artemisia*

mean less grass and thus more erosion. During the last Ice Age (up to 9000 BP), *Artemisia* steppe covered the area. From 9000–8000 BP, with the change to moister and warmer conditions, forest steppe developed and the climate attained conditions similar to those of today by around 7000 BP according to Bottema (1986) or 3500 BC in van Zeist's estimation (1967:310–11). According to Bobek (1968:293), the post-glacial vegetation of western Iran reached a climax in the 3rd millennium BC, after the climate had stabilized in the mid-4th millennium (Bobek 1968:293). This corresponds with the peak period of settlement at Hasanlu known as Hasanlu Period VII or the Early Bronze Age (see below).

Vegetation

Vegetation in the lake basin largely consists of grasses and low bushes. According to both Bobek (1968: fig. 88) and van Zeist (1967: fig. 1), there are three main climax vegetation types known to prevail in western Azerbaijan and Kurdistan:

1. Semi-humid Zagrosian Oak Forest (at elevations of 800–2000 m and average annual precipitation levels of 500–750 mm);
2. Dry Pistachio-Almond-Maple Forest, also called Amygdalus-Pistacia Savanna (elevated areas with annual precipitation of 300–500 mm); and,
3. Artemisia Steppe or Afghano-Anatolian Steppe (primarily composed of *Artemisia fragrans* [Pers. *Dermaneh-e-Moattar*] and located at medium elevations with less than 300 mm annual rainfall). Relative to neighboring Mesopotamia, timber and stone were available in and near the Lake Urmia Basin and shaped local traditions in architecture and other material culture. The most famous examples of this are the columned hall structures of Hasanlu Period IVb with their abundant use of wooden architectural members, which contributed greatly to the intensity of the fire that destroyed the settlement.

Zohary (1973) has characterized the Lake Urmia Basin vegetation as *Artemisietea fragrantis*, with vegetation on the foothills and plateau consisting of primarily *Artemisia fragrans* and *Artemisia herba-alba* interspersed with remnants of *Quercetea brantii*. At higher elevations, up to 2000 m, there are remnants of xerophilous deciduous steppe forest. The salty marshes

and mudflats east and southeast of the lake have halophytic vegetation, especially *Halocnemetea strobilacei*. Lalande (1969) includes *Astragalus*, *Acantholimon*, *Acanthophyllum*, *Onobrychis*, and, at higher elevations, *Quercus pubescens*, *Betula verrucosa*, and *Zelkova cre-nata*. The steppe on either side of the lake includes *Festuca*, *Stipa barbata*, *Bromus*, and *Artemisia*. There is also more localized, azonal vegetation. Salt marshes and salt flats have halophytic vegetation with *Chenopodiaceae* species (Family *Amaranthaceae* subfamily *Chenopodioideae*; Asri and Ghorbanli 1997) and reeds. Prior to widespread deforestation in the Medieval period, riparian forest was likely to be found along the rivers and halophytic forest possibly grew along the lake shore and in the salt marshes. Although late Holocene vegetation is difficult to reconstruct, refuge stands of vegetation on islands in the lake include *Pistacia atlantica mutica*, *Rhamnus pallasii*, and *Juniperus excelsa* (Zehzad 1989). Kurdistan Province and the areas along the Iraq-Turkey border have stands of oak (*Quercus infectoria* and *Quercus libnani*). Woodlands of *Rosaceae* species (*Acer*, *Ficus*, *Rhamnus*, *Lonicera*, and *Pistacia*) have been reported just west of the lake (Djamali et al. 2008:414).

Subsistence Economy

There has been no concerted effort to study the subsistence economies of the Lake Urmia Basin of the 2nd millennium BC. Efforts in this vein were directed at the earliest period of settlement in Ušnu-Solduz, Hasanlu Period X, as part of the Hajji Firuz excavations (Voigt 1976, 1977, 1983). The Hajji Firuz excavations explicitly incorporated systematic methods for recovering and recording faunal and botanical remains, whereas at Hasanlu such efforts were haphazard at best. The results of these sporadic zooarchaeological and paleoethnobotanical studies are summarized here and supplemented with other findings, especially the faunal and botanical remains from the Iron II Hasanlu citadel burned around 800 BC and the excavations at Dinkha Tepe (Gilbert and Steinfeld 1977; Orton and Stein n.d.; Stein and Orton n.d.; Tosi 1975). The lack of faunal and botanical studies puts us at a severe disadvantage with regard to understanding the subsistence economy of the later Bronze Age and early Iron Age. This is especially troubling given that pastoral nomadism/horse breeding emerged during this period in

the Near East, which must surely have broadly transformed life in the Lake Urmia Basin given its abundant summer pastures.

Settlement patterns in the LBA and Iron I–II make clear the detrimental effects of salinity and the importance of freshwater sources such as the Gadar River, which was used for canal irrigation agriculture in the valley bottom. Modern canals typically run perpendicular to the natural drainage and, in antiquity, their charge would likely have been reserved for wheat crops and gardens, with trees raised along canal banks similar to the modern practice. Surrounding uplands were utilized for the dry farming of more drought-tolerant crops such as barley and other fodder crops, while the uplands and more isolated and confined mountain valleys could be exploited in spring and summer as pasture for herds of sheep, goat, and horses. In winter, pastoralists would return to the lower elevations around the lake for shelter and feed their flocks by means of conserved cold-season fodder. The environmental diversity of the region and the dramatic seasonal climate fluctuations selected for agropastoral economies incorporating a fairly high degree of vertical transhumance in the pastoral component. The introduction of the domesticated horse likely made nomadic pastoralism a viable alternative starting in the LBA and had profound effects on the region in the early Iron Age, both economically and militarily.

Botanical remains from Hasanlu dating from the MBA–Iron II illustrate the importance of cereals in the diet, with einkorn wheat (*Triticum monococcum*), emmer wheat (*Triticum dicoccum*), bread wheat (*Triticum aestivum*), and club wheat (*Triticum compactum*) all well attested. Barley grain and straw served as the primary fodder crop for domesticated animals, but barley grain is also found mixed with wheat for human consumption and was most likely used for brewing. Both two-row barley (*Hordeum sistichum*) and six-row barley (*Hordeum vulgare* and *Hordeum polystichum*) are common. Rye (*Secale cereale*) and millet (*Panicum milliaceum*) were used as fodder, as well. The importance of reeds should not be overlooked. Reeds were readily available in the surrounding marshes and small freshwater lakes and, having been processed into mats, were used in roofing and as floor coverings. Charred reeds were found throughout the burned level of Hasanlu IVb, and the remains of reed mats were often noted in the graves dating to the LBA

and early Iron Age (see Chapter 5).

A variety of legumes were raised in irrigated gardens, including chickpeas (*Cicer arietinum*), lentils (*Lens culinaris*), and horsebeans (*Vicia faba*). Vetch (*Vicia ervilia*) was likely used as animal fodder. As is the case today, the Lake Urmia Basin offered a medley of fruits and nuts, probably both wild and domestic. A wide range of delicacies has been found at Hasanlu, including pistachio (*Pistacia vera*), almond (*Prunus dulcis*), grape (*Vitis vinifera*), fig (*Ficus carica*), apricot (*Prunus armeniaca*), pear (*Pyrus communis*), apple (*Pyrus malus*), and quince (*Cydonia oblonga*).

The Iron II destruction level at Hasanlu provides a rich assortment of charred wood samples from architectural elements and wooden artifacts. Poplar (*Populus alba*) was used for roof beams and columns and was grown along canal banks and near other water sources. Elm (*Ulmus* sp.) was employed for architectural elements and has been cited as likely having been imported from the Caucasus (Bottema 1986:255; Harris 1989:15). The shores of freshwater lakes and the banks of the canals provided habitats for willow (*Salix* sp.) and maple (*Acer* sp.), the latter being used in construction. Oaks (*Quercus* sp.) were available in the surrounding uplands. Other attested species, many imported to the region and found among the charred weapons, implements, furniture, and woodcarvings include: cedar (*Cedrus* sp.), hawthorne (*Crataegus* sp.), ash (*Fraxinus* sp.), cypress (*Cypressus* sp.), hackberry (*Celtis australis*), juniper (*Juniperus* sp.), plane tree (*Platanus* sp.), and boxwood (*Buxus sempervirens*). Boxwood was imported from Anatolia, the Caucasus, or the Caspian littoral (Harris 1989:18; Hepper 1996; de Schauensee 2011).

Faunal remains from Dinkha highlight the critical role of pastoral production in the local subsistence economy with *Ovis aries* and *Capra hircus* found in abundance (Gilbert and Steinfeld 1977:336). Sheep/goat pastoralism provided milk and meat for local consumption, and wool and hair that would have been of broader economic significance in the textile trade. Small ruminant production would have surely been important at Hasanlu, although as yet there has been no systematic study. Textile remains from Hasanlu IVb make clear the importance of both wool and goat hair in textile production (Love 2011). Goat and sheep were the most commonly attested food offerings in the LBA and early Iron Age graves (see Chapter 5). Cattle (*Bos*

taurus) provided milk, meat, and traction. Pigs (*Sus scrofa*) were another economically significant species, and canids (*Canis* sp.), almost certainly domestic dogs, were found both at Dinkha, in a LBA grave at Hajji Firuz Tepe (see Chapter 5), and among the victims of the Hasanlu Iron II destruction level (Danti 2011). Faunal remains from Hasanlu and Dinkha also reveal the importance of hunting red deer (*Cervus elaphus*) for meat and antler at Dinkha (Gilbert and Steinfeld 1977:335), and antlers used to ornament important buildings at Iron II Hasanlu (Dyson and Voigt 2003).

The importance of the domestic horse to the people of northwestern Iran cannot be overemphasized. Horses are attested in graves at Dinkha (grave B10a B6; Muscarella 1974) and at Hasanlu (Ghirshman 1964:28–29, fig. 131; Hakemi and Rad 1950:30–31) and as victims in the Hasanlu IVb destruction level (Danti 2011). Equids are frequently depicted in representational art and a wide assortment of horse gear has been found at Hasanlu (de Schauensee 1989; de Schauensee and Dyson 1983). Records of Assyrian campaigns also call attention to the area's reputation as a center for horse-rearing, with large numbers taken as tribute.

Land Routes

Historical sources of the Iron II reveal the strategic importance of the Lake Urmia Basin and such was certainly the case in the LBA and Iron I as well. The location of mountain passes and other features of terrain truly make northwestern Iran a crossroads between Mesopotamia, the southern Caucasus, eastern Anatolia, and the Iranian Plateau. Accordingly, the region's material culture evinces far-flung interconnections and synchronisms but, as in other areas of western Iran, these generally form a superficial, elite veneer over a largely localized material culture. The southern lake region was linked to Assyria via routes through passes at Kel-i Shin and Khaneh/Piranshahr to the expansive catchment of the Upper Zab and the Rowanduz Gorge. The lake basin is connected to the mountains and rolling hills of Kurdistan by the river valleys of the Lower Zab, Tatau Çay, and Zarin Rud. The other mountain passes in the vicinity of modern Sardasht and Lake Zeribar, near modern Marivan, offer prized east-west routes through the *chaîne magistrale* westward to Erbil and Mosul and to the Diyala River, Suleimaniyeh, and Baghdad. To the south and

east, roads led to the caravan city of Hamadan on the Great Khorasan Road via Nausud or Sanandaj. Accordingly, connections and commonalities between Mesopotamia and the Iranian Plateau are manifest in the archaeological record of Kurdistan, as well, particularly in the Iron III.

The archaeology of the Lake Urmia region has typically been subdivided according to river valley systems since they often exhibit marked differences in cultural traditions in antiquity. There has also been a north-south archaeological distinction in the basin for similar reasons.

Urmia Valley

The largest valley in the region takes its name from the modern city of Urmia (formerly Rezaieyeh), the capital of Western Azerbaijan Province. The valley, often referred to as a plain, lies west of the lake, occupying roughly 830 km² of arable land today. This figure excludes the neighboring Zeyveh and Mavana valleys to the west and southwest, which form the upper catchments of the rivers that water the plain. The region is separated from the Ušnu valley to the south by the high peaks of the Kuh-i Abrišam (max. elev. 2510 m AMSL). The western shoreline of Lake Urmia has varied considerably over time, as the low and flat plain gently grades into mudflats along the lake's edge. The major rivers are, from north to south, the Nazlu Çay, Ruzeh Çay, Shahar Çay, Berdesur Çay, and the Barandüz-Qasemlu Çay. The littoral plain is interrupted in two places by rocky outcroppings. At the center of the valley, directly east of Urmia, stands the Bezug Dağ, a formation which rises slightly over 1900 m AMSL. Just to the north, near the inlet of the Nazlu Çay, is the smaller *inselberg* of Kuh-e Zambil (max. elev. 1600 m AMSL).

The area's archaeological sequence is based on excavations conducted in 1948 by Burton-Brown at Geoy Tepe, 7 km south of Urmia (Burton-Brown 1951). This site was looted or commercially excavated prior to Burton-Brown's work (1951:5–6), and some antiquities that reached major museum collections allegedly derive from tombs probably datable to the Middle–Late Bronze and early Iron Age (Lehmann-Haupt 1910:280; Schaeffer 1948:448, fig. 241). Work at Geoy revealed a sequence spanning the Chalcolithic to the Seljuk Period. Both occupation deposits and

burials were recovered; however, the site was poorly excavated and recorded. The most difficult obstacle to interpretation today was the collection of archaeological material in arbitrary levels recorded according to depth ranges below surface rather than by strata, which has necessitated later revisions to the Geoy sequence and a great deal of caution in using it in cross-sequence dating. Most important for the current analysis are Geoy Period D (MBII), late D–C (MBIII), B (later LBA and Iron I), and A (Iron I–II).

From 1971–1978, an Austrian team conducted excavations at Kordlar Tepe, 13 km east of Urmia (Dorner, Kromer, and Lippert 1974; Ehringhaus 1994; Heinsch 2004; Lippert 1975, 1977, 1978, 1979). Deep soundings explored levels dating from the Neolithic to the Sasanian periods. This site provides the key late 2nd millennium sequence for the region with coherent architectural remains. Kordlar was occupied fairly continuously from at least the mid-2nd millennium BC (Kordlar V), but little is known of this period since it was revealed only in small soundings. A fortified manor house occupied the mound in the later LBA and Iron I (Kordlar IV–IIb) and was continuously modified and rebuilt through the Iron II (Kordlar IIa–I). Kordlar IV–II provides a primary example of the Early, Middle, and Late MBW horizons underpinned by radiocarbon dates (Felber 1979), but was excavated after the initial formulation of the “Grey Ware” horizon and early “Iron Age” by Young and Dyson and was never adequately incorporated into later reassessments of these constructs. The final early Iron Age levels of Kordlar provide one of our best data sets on the transition from the Iron II to the Iron III.

The Urmia, Mavana-Zeyveh, and Uşnu valleys were intensively surveyed in 1978 by an Italian expedition, which identified sites ranging in date from the Neolithic to the Medieval periods (Pecorella and Salvini 1984). The expedition also conducted excavations at Qal’eh Ismail Aqa, an Urartian fortress (Iron III), and a sounding was made at Tepe Gijlar. Gijlar, one of the largest sites in the Urmia plain and located north of modern Urmia on the Nazlu Çay, provides a sequence similar to that of Geoy, with Chalcolithic (Ubaid), EBA (Early Transcaucasian/Geoy K), and LBA–Iron I–II materials attested (Edwards 1986:67–68; Kroll 1994a; Pecorella and Salvini 1984:186–89, 240–99, figs. 26–27, 56–85). Middle Bronze material appears to be lacking although, as pointed out by

Kroll, surface sherds of Transcaucasian Black on Red Ware indicate a MBII level is likely present somewhere on the mound (Kroll 1994a), and Charles Burney purchased 29 ceramic vessels at the site in 1958 that probably came from a 2nd millennium cemetery east of the mound (Edwards 1986:67). Beyond its sheer size and agricultural productivity—the latter reflected by the abundance of ancient settlements—the Urmia plain is especially important since it has often marked the transitional point between northern and southern cultural traditions in the western part of northwestern Iran.

Salmas Plain

The Salmas Plain runs east-west with the Zola Çay, which has its inlet at a small bay in the lake partly defined by a spur of Guverçin Kala (max. elev. 2050 m ASL). The valley is hemmed in by the surrounding mountains. Today approximately 250 km² of land is under cultivation. The archaeology of the Salmas region is best known from excavations conducted by Charles Burney at Haftavan Tepe (Burney 1970, 1972, 1973, 1975, 1977; Edwards 1981, 1983, 1986), 5 km south of the modern town of Salmas (formerly Shahpur) in the western valley. The Haftavan sequence spans the EBA to the late Iron Age. While similar to the Hasanlu Sequence, the region was clearly more closely connected to the southern Caucasus and eastern Anatolia in the Bronze and Iron Ages. Haftavan is especially important for its MBII–III sequence, which currently constitutes the fullest assemblage of the highly diagnostic painted wares characteristic of these periods. Regnar Kearton conducted surveys in 1967–1968 (Kearton 1969, n.d.), as did Wolfram Kleiss, the Haftavan Expedition, and the Bastam Expedition (see Kroll 1994a for a summary). From Salmas one can proceed north of the lake region to the intermontane valleys of Marand and Khoy and from there to the Lake Van region and the southern Caucasus. Accordingly, Marand and Khoy exhibit marked regional variations due to these ties (Kroll 1994a).

Tabriz and Sahand

The northern lake littoral in the area of the Salian Rud is quite narrow and thus is sparsely occupied today; the same seems to have been the case in antiquity. On the eastern shore lie the valleys of the Quri

Çay (Meydan Çay) and the alkaline Adji Çay (Talkeh Rud), rising above Sarab and the precipitous slopes of Mount Sahand. The two rivers join to form the Talkeh Rud. Near the confluence of the Quri and Adji lies modern Tabriz, the capital of Eastern Azerbaijan Province. The city's sprawling urban area has largely prevented archaeological excavations, and there appears to have been little ancient settlement in the area west of Tabriz (see Kroll 1984: Maps 3 and 4, and 1994a for a summary of survey results). A lack of fresh water perhaps hindered settlement—surface water is mostly brackish and the rivers are highly saline. Recent salvage excavations in Tabriz at the cemetery of Masjid-e Kabud have uncovered 108 graves of the Iron I–II (Hojabri Nobari 2004) and underscore the fact that our knowledge of 2nd and early 1st millennium BC occupation in the area is incomplete. Ceramics in these graves show links to the Qeytaryeh Group of Western Grey Ware as defined by Piller (2003–2004). Such influences are hardly surprising given the important east-west land routes from Tabriz to the area around Tehran via Miyaneh and Qazvin following the Zanjan valley.

The important site of Yanik Tepe, located 40 km southwest of Tabriz, was the focus of three seasons of excavation by the University of Manchester between 1960 and 1962, under the direction of Charles Burney (1961, 1962, 1964). The site was occupied fairly continuously from the Neolithic to the EBA. Following a break in occupation the site was used as a cemetery in the Late Bronze and early Iron Age, and there is at least one Middle Bronze grave (Burney 1964:60, pl. XV no. 19) and other traces of the MBA, as noted by Edwards (1986:64) and Kroll (1994a). Scattered Iron II sherds suggest an occupation somewhere on the mound.

Maragheh-Bonab Plain

South of the foothills of the Kuh-e Sahand flow the Sufi Çay and Murdi Çay in the area of modern Bonab and Maragheh, the latter famous as a capital city of the Ilkhanid Dynasty. The small, narrow plain is well watered and separated from the lake by a large expanse of salt marsh. While the region has been included within various archaeological surveys, its archaeological record is not especially well known (Kroll 1984, 1994a). The only site that has received specific attention is Gol Tepe, a mound 3 km southeast of the village of Ajabshir (Kroll 1994a; Tala'i 1984). Kroll has

dated the ceramics from the site to the Chalcolithic, EBA, and Early Iron Age (1994a); the German survey of the site found no evidence of the MBII Khabur Ware (KW) noted by Tala'i (1984). The presence of Khabur Ware this far to the east would significantly alter its known distribution in northwest Iran which, as of our present understanding, is found only in a narrow stretch of the Uşnu-Solduz valley (Kroll 1994b).

Miyanduab and Mahabad

The large plain of Miyanduab, “between two waters,” is generally defined by the courses of the Simineh Rud (Tatau Çay) to the west and the Zarineh Rud (Jaghatu Çay) to the east, both of which run northwest to the southern marshes of Lake Urmia. The area near the rivers has been the focus of archaeological surveys (Kroll 1994a; Swiny 1975).

The Mahabad plain is a north-south running valley at the south end of Lake Urmia lying at an altitude of 1300 m AMSL. The valley, defined by the main channel of the Rud-e Mahabad (formerly the Sanak or Sujbulak Çay), is shaped like a “Y” oriented north-south. At its north end the valley splits, its two branches flanking the east and west slopes of the Kuh-e Siah, a limestone outcropping of Miocene date. Just north of the Kuh-e Siah, the river enters the littoral plain and dissipates in salt marshes and mudflats at the south end of the lake. The valley's main city is Mahabad (formerly Sujbulak, Saujbulaq, Saujbulagh and variants), which has a largely Kurdish population. Just west of the city, the Rud-e Mahabad is controlled by a hydroelectric dam which has formed an impound lake, rendering its upper reaches inaccessible to archaeologists. The Rud-e Mahabad has its catchment in the high mountain ranges of the Kuh-e Chaganlu and the Kuh-e Lowdarvan. The Simineh Rud, which defines the western part of the Miyanduab area, has a larger catchment to the south and east. The western littoral branch of the valley is separated from the Solduz valley to the west by low, rocky hills and marsh. As pointed out by Kroll (1994a), the valley system served as a natural boundary and control point on the south end of the lake and, in the early Iron Age, likely formed the northwest border of Mannea, usually localized in the Miyanduab and Takan areas to the east and in the environs of Qalaychi to the south, near modern Bukan. The archaeological sequences of the Miyanduab and

Mahabad area remain ill defined, as they are largely known from survey materials ordered using excavated sequences from neighboring Uşnu-Solduz (see below), Qalaychi, and Ziwiyeh (Dyson 1963c, 1965; Kargar 2004; Mollazadeh 2008; Motamedi 1997a, 1997b), as well as the Takab region (Thomalsky 2006).

Gadar Plain

At the extreme southern end of the lake is the east-west running Gadar Çay valley, often referred to as Uşnu-Solduz since it can be divided into eastern (Solduz) and western (Uşnu) segments. The names are derived from the principal population centers of the area, Uşnuyeh and Naqadeh (formerly called Solduz). The east-west distinction is somewhat arbitrary and is defined by a topographic bottleneck located at the low mountain spurs of Kuh-e Qal'eh Maran (1725 m AMSL) and Kuh-e Qibleh Daghi (1590 m AMSL) south of the river and Kuh-e Daresur (1640 m AMSL) near the modern villages of Darband and Djashiran to the north (Fig. 1.3). The valley runs for approximately 35 km east-west. The Uşnu valley contains approximately 175 km² of arable land, the Solduz an additional 300 km². The valley slopes from southwest to northeast and is surrounded by high mountains in the north, south, and west. To the south of Solduz rise the ranges of Kuh-e Mehdi Khan, Darreh-ye Jagher, Darreh-ye Porkani, and Kuh-e Farang with elevations ranging from 1450–2300 m AMSL. Mountain passes lead south into Kurdistan. A range of low hills, the Kuh-e Saral and Kuh-e Qarah Dagh (max. elev. 1659 m AMSL), separates the eastern Solduz valley from the lake and the Mahabad valley to the east, with its easier routes south to Kurdistan and north to Tabriz. At the western end of the Uşnu valley, the Zagros range rises up precipitously. Here, one may proceed westward through the mountains—through the Kel-i Shin Pass and Rowanduz Gorge—to northern Mesopotamia. Western Solduz, the area from Djashiran to a natural bottleneck at the town of Naqadeh, was less densely settled in antiquity, probably due to the narrow dimensions of the valley (7 km north-south, Figs. 1.2, 1.3). There is a narrow north-south branch of the valley in the northwest, the Dilançi Valley, which provides access to the northern upland zone between the Urmia valley and Uşnu-Solduz. Just south of Naqadeh is the hook-shaped Balakchi Valley, which leads

south into the high mountains of the Siyah Kuh-Sipan range. This valley route proceeds south to the areas of Piranşar and Pasveh—intermontane valleys that were foci of settlement in antiquity—and to the catchment of the Zab River (Kroll 1994a).

Hasanlu is located in northeastern Solduz, 11 km from the southern shore of Lake Urmia. The site was probably one of at least four political centers located in Solduz in the later 2nd and early 1st millennium BC—the Late Bronze and early Iron Age. Based on site distributions, Hasanlu's territory lay north of the Gadar Çay, where it had no rivals in terms of settlement size. South of the river there appears to have been a line of evenly spaced centers of roughly equal size stretching from Mirabad in western Solduz to Naqadeh, Sakse Tepe, and Mohammadşah Tepe in eastern Solduz. Site catchments measure around 8 km in radius (including Hasanlu). Agricultural territories of 4–5 km are typical given the constraints of cost-distance factors in pre-modern agricultural systems (Chisholm 1970); the smaller sites located around these centers thus were likely situated to extend agricultural territories, functioning as surplus-producing satellites in the agropastoral economy.

The eastern Solduz valley extends much further north than does its western part, providing substantial tracts of agricultural land and grazing. The northeastern quadrant of the Solduz valley is marshy, especially the shoreline of Lake Urmia. The area contains small permanent and seasonal lakes. The largest of these lakes, Şur Gol, lies 2.6 km north of Hasanlu Tepe and today covers 13.4 km², although it is quite shallow (maximum depth 80 cm) and varies in extent with seasonal precipitation, even reportedly drying up completely on rare occasions (Voigt 1983:270). The other lakes—the Kheder Hajji and Seyran Goli—are saline. Another seasonal lake/marsh is located just north of the village of Dalma. Şur Gol provides an important source of fresh water and its southern periphery was heavily settled in antiquity. The northeastern valley is partially separated from the Gadar River by the east-west running Dalma range (1300–1350 m AMSL). A pair of higher ranges, the northwest-southeast running Kuh-e Qarah Dagh and Kuh-e Saral, lies between Hasanlu and Lake Urmia (1300–1659 m AMSL) and separates Solduz from the Mahabad valley to the east. In the southeastern corner of eastern Solduz is the

north-south running Masu valley and the Masu Çay, a minor affluent of the Gadar. This valley extends the arable land of eastern Solduz significantly and was fairly densely settled in antiquity. The Masu valley allows access south, through the mountains, to the Mahabad Plain via Qazi Gol.

Hasanlu Tepe and Dinkha Tepe

Hasanlu Tepe consists of a High Mound standing 25 m above the surrounding plain and measuring 200 m in diameter surrounded by a Low Mound with 8 m of archaeological deposit and measuring 600 m at its widest observable point (Danti 2004). The modern village of Hasanlu obscures the eastern part of the Low Mound and the village of Aminlu likewise encroaches on the Low Mound in the south. These villages were founded after the second Perso-Russian War (1826–1828) and the signing of the Treaty of Turkomançay. The peripheries of the High Mound were disturbed by military trenches first documented in aerial photographs taken by Erich Schmidt on July 25, 1937 (Schmidt 1940; Danti 2004: pl. A). These trenches probably date to World War I and were likely dug by the Russian forces occupying this region—they apparently cut trenches into other sites in addition to having excavated for antiquities. The southern Low Mound was never extensively explored due to the presence of a modern Islamic cemetery in the area. An irrigation canal cuts the northern and eastern parts of the Low Mound and has often eroded out ancient burials. Since the close of the Hasanlu Project in 1977, a dirt road located on the eastern Low Mound has been paved and handles quite a bit of local traffic. Overall, the mound and its standing architectural remains of the Iron II are in excellent condition today thanks to the Iranian expedition excavating at the site and undertaking efforts toward its conservation (Khatib Shahidi 2006).

Excavations at Hasanlu and Dinkha in Ušnu have had a profound effect in shaping our understanding of the early Iron Age in northern and western Iran. The first recorded excavations at Hasanlu were conducted in 1934–1935 on the northeastern High Mound by M. Rad and M. Farhadi of the Office of the Tobacco Monopoly in Naqadeh under a commercial excavation permit (Ghirshman 1939:78–79, 253–54, pl. C). Sir M. Aurel Stein was the first to excavate scientifically, doing so for six days in 1936, although he was

not especially impressed with the results (Stein 1940). Stein opened four trenches, two on the northern Low Mound, an L-shaped trench near the base of the northern High Mound, and a sounding in a depression located near the center of the High Mound (Stein 1940:389–404, figs. 106, 108–10, pls. XXIV–XXVI, XXX–XXXI). Ali Hakemi and Mahmud Rad resumed commercial excavations on the eastern Low Mound in 1947 and 1949, mainly opening a number of graves (Hakemi and Rad 1950). These early excavations alerted archaeologists to the presence of a “Grey Ware” ceramic assemblage at Hasanlu. This distinctive “Grey Ware” and its correlated vessel forms were known, to a certain extent, from other sites in northern and western Iran, mostly cemeteries. This ceramic tradition had already been dated to the early Iron Age of western Iran, then understood as the late 2nd millennium BC, and was linked by some scholars to Iranian migrations based on extremely limited evidence (Burton-Brown 1951; Contenau and Ghirshman 1935; Ghirshman 1938, 1939, 1954; Hakemi and Rad 1950; Stein 1940). Robert H. Dyson chose the site for excavation in 1956 as part of a four-month survey of sites in northern and western Iran after having briefly excavated at Hamadan (Dyson 1956, 1957).² Ten days were spent working on the High Mound. Under Dyson’s general direction, the Hasanlu Project subsequently completed ten seasons of excavation at Hasanlu and conducted excavations and regional surveys in the surrounding Solduz and Ušnu valleys until 1977.

The work conducted at Hasanlu and two seasons of excavation at Dinkha Tepe in 1966 and 1968 form the core of our dataset on the EWGW horizon/Iron I of northwestern Iran. While most of the Hasanlu Project’s research was focused on the Iron II period, the project collected a large body of data spanning the Pottery Neolithic to the Medieval periods. In all, ten periods—labeled Hasanlu I–X, from latest to earliest—were defined in the Hasanlu sequence (see Chapter 2). Most of these periods are closely linked to cultural developments in northern Mesopotamia, with strong but intermittent influences from the Caucasus. In Dyson’s original periodization, the early Iron Age spanned Hasanlu Periods V–IV or his Iron I and Iron II (Dyson 1965:211, table 2). While Hasanlu is particularly important for its early Iron Age sequence in terms of its impact in the development of the archaeology of Iran, the earlier part of this sequence remains

obscure. Likewise, perhaps more than any other period at Hasanlu, Period V has been at the center of several important theoretical debates regarding cultural developments in northwestern Iran in the later 2nd millennium BC. The achievements of the Hasanlu Project in the field were unfortunately not matched by an assiduous campaign of publication (see especially Muscarella 2006). Little of the primary data has been published before this, and the following represents a substantial revision of our understanding of the period.

Archaeological Chronology in Uşnu-Solduz

The formulation of the Hasanlu Sequence, an archaeological sequence that spans the Neolithic to the Medieval periods, perhaps represents the most enduring and influential achievement of the Hasanlu Project. This sequence contained two major points of weakness—the mid-to-late 2nd millennium BC and the Iron III–IV. The Iron III–IV periods have been the subject of much recent revision (Dyson 1999a, 1999b; Kroll 2000, 2010, In press b), and correcting the later 2nd millennium chronology has required substantial time, effort, and modifications. The reasons for these inadequacies are both methodological and conceptual.³ In brief, from 1958 forward the focus of the Hasanlu Project's excavations at Hasanlu was almost exclusively the burned Iron II citadel. Concessions were made to accommodate this research agenda, and the investigation of earlier and later periods was of secondary importance, often being rushed and inadequately recorded (see Chapters 2 and 3).

The Neolithic and Chalcolithic (Hasanlu X–VIII)

The Uşnu-Solduz region was extensively settled in the late Neolithic or Hasanlu Period X—the Hajji Firuz Phase (see Voigt 1983). The beginning of the period may date to as early as the late 7th millennium BC, and settled agricultural populations were well established in Uşnu-Solduz and in the area east of the lake in the 6th millennium (Burney 1964; Voigt 1983; Voigt and Dyson 1992:174). Various scholars have indicated this period is essentially a local variant of the Proto-Hassuna, Hassuna, and possibly Samarran periods of northern Mesopotamia, citing similarities

in ceramic assemblages and radiocarbon dates (Voigt and Dyson 1992:174). The Hasanlu Project excavated Hajji Firuz, the type-site for the period, in 1961 and 1968, and this archaeological culture has been documented at other sites by surveys (Voigt 1976, 1983; Young 1962).

The Chalcolithic is likewise well attested in Uşnu-Solduz and is divided into Hasanlu Period IX (Dalma Phase) and Hasanlu Period VIII (Pisdeli Phase). Dalma occupation was documented at the type-site of Dalma, excavated in 1961, as well as at Hajji Firuz, Pisdeli, and at Hasanlu in the Well Sounding on the High Mound (Hamlin 1975; Voigt 1983:7–8, 17–18, figs. 4, 8; Young 1962). Dalma represents a fairly widely distributed archaeological horizon in western Iran (Henrickson 1985, 1986; Kearton n.d.; Solecki and Solecki 1973), and exhibits strong affinities with and connections to the Ubaid archaeological horizon of northern Mesopotamia (Voigt and Dyson 1992:174–75). There is a smooth transition from Period IX to Period VIII. The Pisdeli Period is the local variant of the late Ubaid and early Uruk of Mesopotamia. Aside from the type-site of Pisdeli, which was sounded by the Hasanlu Project in 1961 (Dyson and Young 1960; Young 1962), Pisdeli occupations were documented at Hajji Firuz (Voigt 1983:8, 16–17, figs. 4, 8) and in the Well Sounding at Hasanlu. As noted by Voigt and Dyson (1992:175), the depths of the excavated deposits at Hasanlu and Pisdeli indicate the period was quite long.

The Early Bronze Age (Early-to-Mid 3rd Millennium BC)

The transition from Hasanlu Period VIII to Period VII, the EBA, has not been documented within the limited available dataset. Dyson divided Hasanlu Period VII into three subperiods, previously loosely referred to as phases (Dyson 1973b; Dyson and Pigott 1975). Period VIIc dates to the early 3rd millennium BC and possibly as early as the late 4th millennium BC and is known from deep soundings on the High Mound and Low Mound of Hasanlu (Danti, Voigt, and Dyson 2004). The Low Mound was first settled at this time, and the EBA community is strongly reminiscent of the Kranzhügel of northern Mesopotamia of the mid-3rd millennium. Ceramics indicate that Early Transcaucasian (ETC) influences were especially strong at Hasanlu, contrary to previous assertions (see

also Danti, Voigt, and Dyson 2004). The succeeding subperiods Hasanlu VIIb and VIIa are quite different insofar as the ceramics are concerned, with a highly distinctive Painted Orange Ware (POW) component in occupation assemblages and graves at Hasanlu and with only a few ETC sherds. Similar ceramics are known from other sites in the southern Lake Urmia Basin, and a few POW sherds have been found in the Urmia and Salmas regions. Findspots in the south, along the Zarineh Rud and Simineh Rud, provide some indication of the core area of this tradition, and Voigt and Dyson have noted connections between POW and material from Mesopotamia of the mid-3rd millennium BC (1992:175). We see here a division, or “shatter zone,” in the Lake Urmia Basin, which runs along a line from the Urmia valley to the purlieu of Tabriz, similar to that which occurred in later periods.

The Middle Bronze I (2100–1900 BC)

We are hindered by a dearth of information regarding regional settlement patterns during the late 3rd–early 2nd millennium BC, the subperiod I now designate Hasanlu VIc; previously, this timespan was lumped within Period VI. Our limited picture of the MBI is due, in part, to a lack of obvious—here meaning painted—ceramic type-fossils following the decline of the POW horizon of the 3rd millennium BC. Excavations at Dinkha Tepe and Hasanlu help to shed some light on the subperiod; Simple Ware (SW) ceramics belonging to Period VIc were found at both sites (on the meaning of this term, see Braidwood and Braidwood 1960). Painted wares are absent, and ceramics tended to be fired at high temperatures, resulting in a greenish-buff appearance indicative of well-developed pyrotechnology. Decoration in appliqué is common and includes rope designs and horizontal ribs. Punctate designs and comb incising in horizontal bands and wavy lines also occur. Typical vessel forms are carinated bowls, large barrel forms, and vats with horizontal ribs and ledge rims or overhanging rims. Overall, the assemblage exhibits close ties to EB–MB transitional and MBI assemblages in northern Mesopotamia of the late 3rd and early 2nd millennium BC. Such assemblages are seen as early manifestations of the Khabur Ware horizon characteristic of the 19th–17th centuries BC, and most of the major vessel forms continue in the MBII. This suggests an in-place devel-

opment of the succeeding Period VIb ceramic assemblage in Ušnu-Solduz and a late 3rd–early 2nd millennium BC date for the cultural stimuli that resulted in this development, almost certainly of northern Mesopotamian origin/influence.

The Middle Bronze II (1900–1600 BC)

Influences from northern Mesopotamia grew more pronounced in the MBII or Hasanlu Period VIb/Dinkha Period IV. The period is marked by the introduction of Khabur Ware—a cream-slipped buff ware found in painted, incised, and plain varieties (Frane 1996; Hamlin 1971, 1974; Oguchi 1997, 1998). The painted style is readily identifiable in survey collection lots and so we are somewhat better informed on settlement patterns during this period (Kroll 1994b). Excavations at Dinkha Tepe and Hasanlu again provide excavated exposures of this period. The material culture shares strong affinities with northern Mesopotamia. Although it is difficult to prove without written evidence, Dinkha, and perhaps Hasanlu, could have been *kārum* (trading colonies). The implications of this are discussed below (see Chapters 3 and 4).

The final part of the MBII, for now referred to as the Terminal MBII, is known only from excavations at Dinkha, where it is designated Dinkha IV Phase D, and from a few graves at Hasanlu. This subperiod dates to the 17th century BC and is characterized by the rapid decline in the production of Khabur Ware (see Chapter 4). The Terminal MBII and the MBIII constitute an important transitional period during which time the Early MBW horizon emerges. In this regard, the origins of this horizon are similar to other Grey Ware horizons in northern and western Iran of the 2nd millennium BC, as argued by Piller (2003–2004, 2004).

The Middle Bronze III (1600–1450 BC)

I have designated the new subperiod Hasanlu VIa to account for important cultural deposits from small excavated exposures at Dinkha and isolated finds at Hasanlu on the High Mound and in graves from the Low Mound. Previous researchers have nearly all interpreted this timespan in the southern Lake Urmia Basin as a hiatus in the occupational sequence or a time of punctuated, nearly absolute culture change (possibly

following the abandonment of the region). The MBIII is much better known in the Urmia and Salmas regions to the north, where it is typified by affinities to the southern Caucasus. We can say little regarding the region's cultures beyond the prevalent styles and distribution of ceramics—painted pottery in particular. This is most unfortunate since this period forms the crucial transition to the Early MBW horizon.

Early MBW (see Chapter 4) and painted wares are the primary markers of the subperiod in northern Iranian Azerbaijan, most notably polychrome painted Urmia Ware (Edwards 1981, 1983, 1986; Rubinson 2004). Many of the diagnostic vessel forms of Dyson and Young's former EWGW horizon are already present in the Early MBW assemblage and most develop from the MBII. Urmia Ware probably develops out of the MBII painted pottery traditions of the northern part of the region, best attested at Haftavan Early VIB and Geoy Tepe early D (Burton-Brown 1951; Edwards 1983). In contrast, the MBII assemblages of the southern Lake Urmia Basin contain an important Khabur Ware component (Hamlin 1971, 1974). Amounts of Painted Khabur Ware (PKW) decline rapidly in the Terminal MBII (17th century). In Phase B (MBII) of the Dinkha Control Sounding, PKW (Kramer's Ware Ie) attains a high of 24% of the assemblage. In Phase D (terminal MBII), PKW makes up a mere 8% (see Chapter 4), and unpainted wares and annular band-painted wares are typical. The MBII KW assemblage is highly localized in northwestern Iran, confined to the area of Dinkha Tepe and Hasanlu and known from surveys at sites running from east to west along the Gadar Çay (Kroll 1994b:165). The southeastern Lake Urmia Basin and the valley of the Zarineh Rud and Simineh Rud were home to a third 2nd millennium BC painted pottery tradition linked to Giyan Tepe III–II and Godin III (Edwards 1986:69; Henrickson 2011; Swiny 1975; Tala'i 1984).

Haftavan, in the Salmas region, provides our best view of the MBIII, where the period is designated Haftavan Late VIB (Burney 1970, 1972, 1973, 1975; Edwards 1981, 1983, 1986). Evidence from Haftavan and other sites in the lake region suggests disruptions occurred during the mid-2nd millennium BC. The Early VIB settlement (MBII) was burned, followed by an ephemeral occupation attested by stake holes and pits. Elsewhere, a mudbrick and timber structure terraced into the slope of the mound was found to be

resting on the burned debris of the earlier settlement. MBIII Haftavan has multiple architectural phases of flimsy construction that were repeatedly rebuilt, in addition to rectilinear mudbrick structures on stone footings and an area of large ovens suggesting intensive industrial/residential activities (Edwards 1983:73). The MBIII settlement was also destroyed by fire.

Burton-Brown's excavations at contemporary Geoy Tepe in the Urmia valley yielded one small exposure of MBIII architecture and graves, generally referred to as Geoy late D–C. The division of Geoy D into an earlier and later subperiod stems from an analysis conducted by Dyson (1968:16–17; see also Edwards 1986:58–60). The distinction is necessitated due to the mixing of the two periods, which resulted from the digging of arbitrary levels based on absolute elevations through sloping deposits in Pit [Operation] IV (cf. Burton-Brown 1951: figs. 16, 17b–c). In Pit III, a deposit containing Urmia Ware and Early MBW sealed stone-built tombs initially dated to Geoy Tepe D (MBII; Burton-Brown 1951:110). Dyson (1968:18) dates Tombs A and J to the Period late D–C (MBIII) based on their elevations, and notes Tombs B and H “could belong to the earlier state”—that is, early Period D (MB II; Dyson 1968:18)—while Edwards dates the tombs to the MBIII (Edwards 1986:60–61). Polychrome painted Urmia Ware is not found in MBIII graves, which tend to contain undecorated ceramics. The overlying MBIII deposit was in turn cut by inhumation graves with MBW of early Iron Age date (Burton-Brown 1951:123–26). Poorly preserved architectural remains were recovered in “Pit IV” immediately above structures of Period D (Burton-Brown 1951:72, figs. 17b–c, 18). The situation at Kordlar, in the same valley, is difficult to ascertain. Kordlar V was revealed in limited soundings and produced what might be an intermediate assemblage of ceramics (Heinsch 2004; Lippert 1979: figs. 6:6, 9:2, 10:1–2, 11:2). Edwards (1986:64) dates the period somewhere in the MBIII–early LBA, citing similarities to assemblages recovered at Dinkha (see below) and Kizilvank (Schaeffer 1948: fig. 270, nos. 1–5) as well as radiocarbon dates from overlying Kordlar III–IV (Felber 1979; Lippert 1979:117–18, 137).

Excavations at Dinkha, in the Uşnu valley, show the Terminal MBII settlement (Dinkha IV Phase D) was destroyed by fire. This marks the end of the KW presence in Uşnu-Solduz, with sharply diminishing amounts of annular band-painted buff ware and plain

buff ware in later assemblages—others call such material late Khabur Ware. There was no evidence for rebuilding activities during the MBIII in the small excavated area, but the deposit immediately overlying the collapse of the burned MBII structures contained Urmia Ware (Rubinson 2004) and Early MBW. In contrast to other MBIII sites, the Early MBW recovered at Dinkha also occurs in an incised and impressed variant. The MBIII level was overlain by “trash deposits” of the early LBA, and the MBIII and LBA strata were cut by graves of the LBA and Iron I (Muscarella 1974, see below). At nearby Hasanlu, in the Solduz valley, MBIII occupation is suggested by a few sherds from the Well Sounding, a deep sounding dug near the center of the High Mound by a professional well digger. Other stray sherds of Urmia Ware were found on the mound’s surface, and MBIII graves were found on the Low Mound. The MBIII is almost certainly present at Hasanlu, but sampling and site formation processes have led some scholars to insert a cultural break and/or hiatus in the Hasanlu sequence—corresponding to my Terminal MBII and MBIII—separating the MBII and early LBA. In Kurdistan, the period is known only from archaeological surveys. Giyan and Godin, in Luristan, provide grave groups and a fragmented occupational sequence for the area to the south, in the environs of Nehevand (Contenau and Ghirshman 1935; Henrickson 1983–1984; 2011:esp. table 6.2; Young 1965). The period is also attested at Sialk in Period A (Ghirshman 1939).

The Late Bronze (1450–1250 BC)

The LBA (Hasanlu V) sees Early MBW become the major ceramic ware in the southern Lake Urmia Basin and in surrounding regions. The period is best attested in graves and occupation deposits at Hasanlu and in “trash deposits” and graves at Dinkha (Muscarella 1974). Graves have also been excavated at Hajji Firuz (Voigt 1976:810–14, fig. 116, pls. LXI–LXII), Dalma (Young 1962:707–8, fig. 8), Haftavan (Burney 1970:165, fig. 8 nos. 1, 7), and Yanik (Burney 1962:136, 146–47, pl. XLIIc nos. 24–29); a tomb of the early LBA was excavated at Geoy Tepe (Burton-Brown 1951:142–45).

The earliest attested columned-hall structure at Hasanlu dates to the latter part of the period. An internal gateway is also known from the late LBA on

the southern High Mound (see Chapter 3), and the Hasanlu citadel probably began to take shape at this time. Another columned-hall building of the later LBA—early Iron I is known from Kordlar IV. This fortified manor house had corner towers, a modest columned hall with a single central column and probable side columns, narrow benches, and a central sunken hearth (Lippert 1977: fig. 22). The building’s construction can be dated to as early as the late LBA on the basis of radiocarbon samples from Kordlar IV and III (Lippert 1979). The building was destroyed by fire and contained human victims and a fairly large number of artifacts. Comparisons of the artifacts found at Kordlar with those from Hasanlu indicate Kordlar IV was likely destroyed in the early Iron I. At Kordlar we see a concern with fortifying a single structure, while at Hasanlu the later LBA buildings were located within a fortified citadel. Two superimposed residential structures were found on the western low mound of Haftavan V (1450–1000 BC). These are difficult to date precisely (Burney 1973:162–64), and they exhibit new construction techniques. Their low density suggests a decline in the settlement’s population. No architecture is known from LBA Dinkha Tepe, although the presence of “trash deposits” in the cemetery area suggests an occupation nearby according to Muscarella (1974:52). Geoy Tepe B might have been occupied and fortified at this time (Burton-Brown 1951:141), but little more is known. I would date Geoy B to the late LBA–Iron I on the basis of ceramic parallels with Hasanlu and Kordlar (see Chapter 4).

The picture we gain from the MBIII and LBA is one of marked regional variations (see Chapter 4) rather than of the homogeneity posited previously by advocates of punctuated demic diffusion theories (see Young 1965). Regional variations subside in the early Iron Age (*pace* Young 1965). The MBIII and LBA previously formed the early portion of Young’s EWGW horizon (1965) and the early part of Dyson’s Iron I (1965). The material culture of the LBA exhibits ties to northern Mesopotamia, the southern Caucasus, and the region typified by the Gheyartyeh-Group of the EWGW horizon as defined by Piller (2003–2004). The small number of chronologically discrete ceramic diagnostics for the period represents a major obstacle to mapping settlement patterns around Lake Urmia. Only a few vessel forms are diagnostic of the period, and whole vessel forms are often needed to differen-

tiate between the MBIII, LBA, and Iron I. We may assume that the dense and regular settlement pattern of the early Iron Age had its origins in the mid-to-late 2nd millennium BC, but until new archaeological surveys and excavations are conducted in the region this will remain uncertain. The reanalysis of late LBA occupation deposits at Hasanlu shows that a fortified citadel emerged at this time (see Chapter 3). Graves from Hasanlu and Dinkha indicate increasing access to precious goods, heightened status differentiation, and ascribed status. These trends continue in the Iron I (see below) and, taken together with other lines of evidence, suggest a process of secondary state formation.

Iron I (1250–1050 BC)

Hasanlu IVc was formerly lumped within Dyson's Hasanlu V/Iron I and Young's EWGW horizon. I now call this period the Iron I and distinguish its ceramic assemblage as Middle MBW. In the north, regional variations such as painted wares continue at Kordlar, Geoy Tepe, and presumably at Gijlar. While survey data are available, surveys have lacked the chronological resolution necessary to divide the MBW horizon into meaningful temporal units. Previously, the EWGW horizon encompassed roughly the period from 1600–1000 BC. The Late Western Grey Ware (LWGW) horizon, meanwhile, was more temporally discrete, spanning 1000–800 BC, although it should be noted that the 800 BC date rests on the dating of Hasanlu's destruction and not the end of the ceramic horizon in northwestern Iran. Early Western Grey Ware was loosely defined using fairly generic ceramic index fossils and thus not surprisingly has been identified over a broad swathe of northern and western Iran, giving the false impression that it arrived with a wave of migrants bearing burnished bridgeless-spouted jars, tankards, and "worm bowls." Closer inspection has shown these diagnostics and others developed over a long period of time in Uşnu-Solduz, starting in the mid-2nd millennium BC, and that "Iron Age" material culture did not arrive fully developed at a single point in time.

This reanalysis of the Iron I citadel at Hasanlu reveals it was more fully developed than previously interpreted (Dyson 1989a:113–14, fig. 6a). The largest known building of the northwestern citadel was BBIII (Fig. 1.5), a relatively modest columned-hall structure

with a niched and buttressed façade, portico room, and antechamber leading to a columned hall. If the internal features of the later Hasanlu IVb BBIII provide any indication of the use of space in the Iron I, the hall had two columns, side benches, and a "throne seat." The side rooms and rear of the building were presumably used as kitchens and storerooms. On the north side of the antechamber, a door led into a stairwell. These internal features of the Iron II period have been reconstructed on the architectural plans of Period IVc used here, with the caveat that we lack evidence of these internal features in secure Iron I contexts. To the southwest of BBIII was a poorly preserved columned-hall structure—the RS22–23 IVc Building. The open space between BBIII and this structure may have been one of the main entrances into the citadel as in the later Period IVb (see below). The RS22–23 Building formed the north end of a line of structures dividing the inner citadel from entry areas to the west. The T22 and U22 Buildings are smaller structures of unknown function (Fig. 1.5). To the south of the U22 Building was an open space, which separated it from the V22 Building. This passageway corresponds to the position of an Iron II gateway, the so-called Foot Gate (see below). Overall, flow patterns in and out of the northwestern citadel seem to have been established by the Iron I and maintained in the Iron II, with added emphasis on controlling access and creating internal fortifications (cf. Fig. 1.6). The southern citadel also took shape during this period and provided the basic blueprint for the well-known Iron II Lower Court area. The main structure was BBII, shown here with its western storerooms (Fig. 1.5) since the available evidence indicates these were original to the structure (see Chapter 3). As with BBIII, the building shown here is reconstructed with internal features attested in the Iron II. BBII was likely a columned-hall temple (Dyson and Voigt 2003). To its southwest was the CC27 Building, the precursor to BBIX and BBX of Period IVb—they seem to have been ancillary structures associated with BBII. To the northwest of BBII stood the YZ27–29 Building, almost certainly a substantial portion of an internal gateway. The building's orientation, with its tower and buttressed façade facing north, seems to indicate that the gateway had been located in Grid YZ27 in late Period V and early Period IVc. Internal modifications reveal this entry was blocked by later Period IVc (see Chapter 3). The location of a gateway in this area is in

keeping with the built environment of the Iron II—this was the area of BBIE, the Lower Court Gate, and the entrance to the Upper Court. The orientation and location of the YZ27–29 structure, however, raises the question of what might have been located in the area of Grids VWX28, which were not excavated to the level of Period IVc except in the small Well Trench of Grid W28, where no Period IVc architectural remains were recovered. At least part of the area north of BBII was a courtyard, the western side of which was defined by BBV. This columned hall seems to be aligned to BBII and the YZ27–29 Building, with its main axis running north-south and its main entry on the north side. As was argued by Dyson (1989a:113), columned-hall structure BBIVE to the north probably dates to Period IVc, but it effectively blocked the front façade of BBV, and so may well be a later Iron I addition. The addition of BBIVE had the effect of creating an east-west passageway between it and BBV which, in the Iron II, became BBIV-V: we again see an Iron II emphasis on lowering the permeability of the inner portions of the citadel through the addition of gateways and the narrowing of passageways.

Hasanlu IVc appears to end with a fire and the destruction of major buildings on the High Mound and the Low Mound (Danti 2011), although it is not currently possible to stratigraphically link all these destruction contexts and conclusively attribute them to a single event. The dating of this destruction rests on radiocarbon dates from wooden structural elements used in the rebuilding of the citadel at the start of Period IVb and charred remains from the Period IVc fire (Dyson and Muscarella 1989). The reliance on radiocarbon samples from structural timbers is hardly ideal, and more dates are needed from short-lived samples. We see a pattern of disruption at Kordlar as well. Following the destruction of Kordlar IV, the columned-hall structure was reconstructed using the stubs of the earlier walls as foundations (as at Hasanlu) and the building was provided with a new enclosure wall, with towers. Radiocarbon dates (Felber 1979; Lippert 1979:117–18, 137) and the ceramic assemblages indicate Kordlar IV–III dates to the late LBA–Iron I. The building sequence at Kordlar shows repeated destructions by fire with some human victims. The rebuilt versions of the structure are progressively more fortified, probably in response to external threats or repurposing by a new authority. Other sites such as

Geoy Tepe and Haftavan were likely occupied in the Iron I, but little more can be said with certainty at the present time.

Citadel settlements appear to grow in the Iron I period in the Lake Urmia region—our examples are Hasanlu (Fig. 1.5) and Kordlar (Lippert 1977, 1979). The Iron I citadel of Hasanlu likely took shape in the later LBA/Hasanlu V (see Chapter 3), and Kordlar seems to follow a similar, if more modest, developmental trajectory. In Solduz, fortified centers were probably located at Mirabad, Naqadeh, Hasanlu, Sakse, and Mohammadšah (Appendix I). There is evidence of growing external threats, such as destruction levels at Kordlar and Hasanlu, which help contextualize these widespread changes to the built environment. In Ušnu-Solduz, Iron I graves are known from Dinkha, Hasanlu, and probably Dalma, and attest to increasing access to elite goods, acquired status, pronounced status differences, and a higher degree of social heterarchy (see Chapter 5). Iron first appears in the southern Lake Urmia Basin and bronze artifacts are more abundant. Overall, Hasanlu, Dinkha, and Kordlar suggest the continuation of patterns established in the LBA and furnish a view of object types and styles better known for the Iron II (see Chapter 5).

Iron II (1050–800 BC)

The Iron II corresponds to Young's LWGW horizon (1965), defined locally by Hasanlu IVb, which develops from the Iron I. Aside from Hasanlu, which remains largely unpublished (Muscarella 2006), important excavations have been conducted at Dinkha Tepe II, Geoy Tepe A, Kordlar II–I, and Zendan-i Suleiman I. The latter two sites provide our best view of the late part of the period—for lack of a better term, the Iron II–III transition.

The Hasanlu IVb citadel is the best-known Iron II settlement of northwestern Iran, although relative to the size of the dataset it is one of the least published (Fig. 1.6). Moreover, “best known” is not synonymous with “most representative,” and our current view of settlement in Ušnu-Solduz is heavily biased (Hasanlu-centric)—other sites in northwestern Iran round out our view somewhat, especially Kordlar, Dinkha, and Zendan-i Suleiman, but we desperately lack excavations at smaller sites in rural hinterlands, lower towns, and even at other citadel centers. Approximately 100

Iron II graves were excavated at Hasanlu's Low Mound and another 68 are known from Dinkha II (Muscarella 1974:58ff.). At Haftavan, 25 graves date to the Iron I–II (Tala'i 2007; Tala'i and Aliyari 2009). In Tabriz, excavations at the important cemetery of Masjid-e Kabud have uncovered 108 graves of the Iron I–II (Hojabri Nobari 2004). Simple inhumations typify Haftavan and Hasanlu, and all graves were located in low mound cemeteries, at what were likely the shifting peripheries of the contemporary settlements. The Hasanlu Low Mound cemetery also contained stone-built hypogea (Danti and Cifarelli n.d.; Hakemi and

Rad 1950). Mudbrick and stone tombs and simple inhumations are all attested at Dinkha, along with 19 infant urn burials (Muscarella 1974). The graves of Masjid-e Kabud were of three types: inhumations, stone-covered inhumations, and horseshoe-shaped mudbrick tombs similar to those recorded at Dinkha (Hojabri Nobari 2004).

A detailed description of the Iron II at Hasanlu is well beyond the bounds of the current work, but one cannot interpret the earlier MBW levels of the site without reference to Period IVb. The site is divisible into a fortified citadel (the High Mound) and a Lower

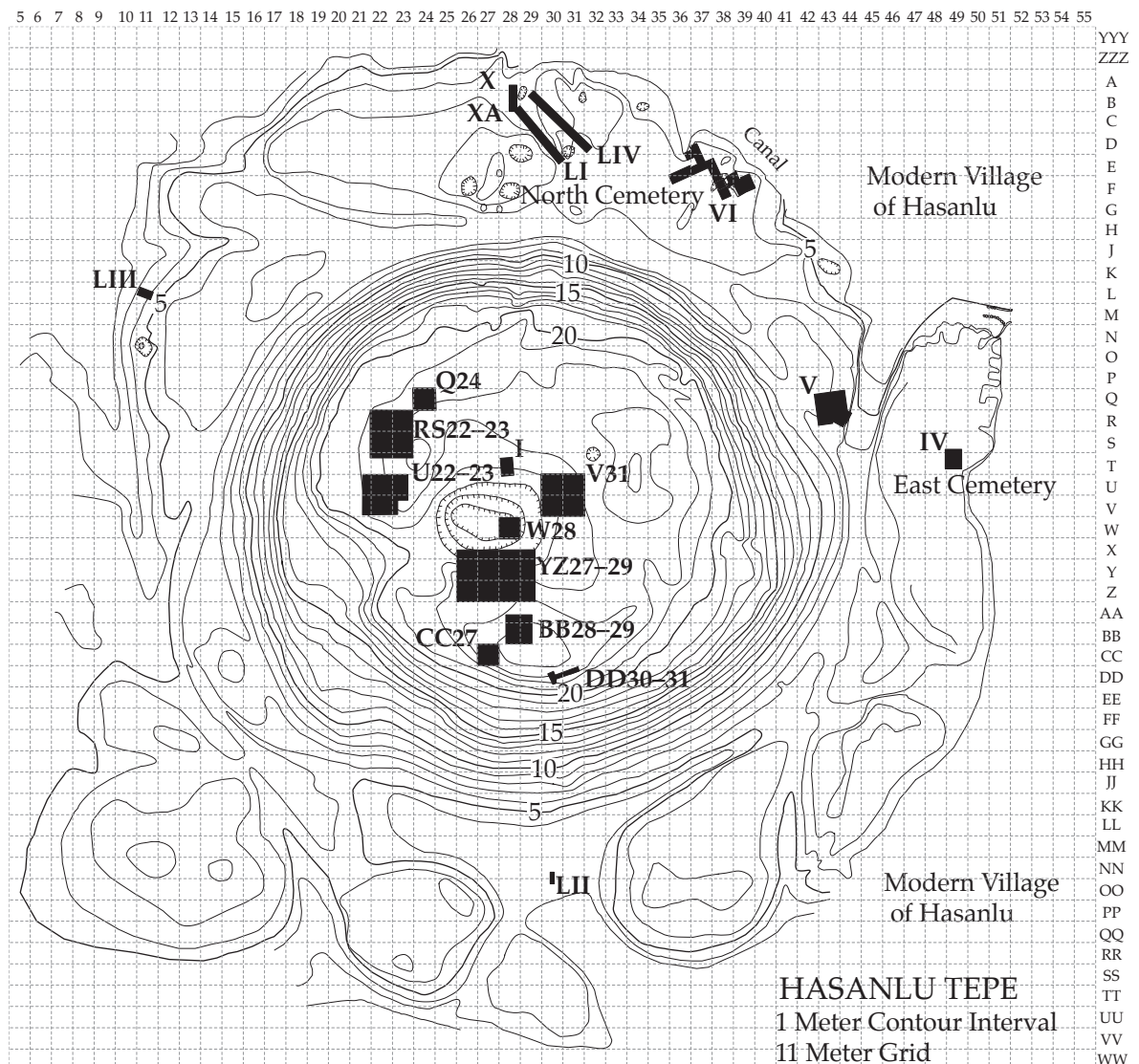


Fig. 1.4 Topographic map of Hasanlu Tepe showing excavation areas relevant to the later 2nd millennium BC.

Town (the Low Mound, Fig. 1.4). Settlement on the Low Mound is poorly understood; only a single Low Mound building, BBXIII, was thoroughly investigated (Danti 2011). Other areas were used as cemeteries, but there are some indications of Iron II architecture in these areas, as well as “burials” that might be interpreted as victims of an attack, possibly the event of ca. 800 BC. The available evidence suggests that the Lower Town was destroyed in the same events as the citadel—in Terminal Hasanlu IVc and Terminal Hasanlu IVb—with human and animal victims, burning, and relatively high numbers of *in situ* artifacts attested in the final Iron II phase of the Lower Town (Danti 2011). Only renewed excavation can resolve such issues. Estimating the size of the Lower Town is difficult. The current site boundaries are set by irrigation canals, a rural highway, and the modern villages of Hasanlu and Aminlu. There is little reason to believe that these modern barriers correspond to the topographically indistinct margins of the *tepe*. Estimates of the density of occupation are similarly problematic, as excavations on the Low Mound were spatially limited and focused mostly in the North Cemetery. Work in Operation V suggests fairly dense occupation (Danti 2011), while other areas show little evidence of Iron II occupation, although the poor quality of excavation and record-keeping prevents greater certitude. Sadly, Hasanlu provides the only moderately detailed picture of a Low Mound settlement in the region for this period.

In contrast, the Iron II citadel of Hasanlu was extensively excavated from 1958–1974 (Fig. 1.6). It provides one of our only views of a citadel, with late Iron II–Iron III Zendan-i Suleiman representing what is likely a unique type of settlement manicured to its inimitable terrain with a strong ritual component in its earliest phases (Boehmer 1961, 1967, 1986; Kleiss 1971; Naumann 1977). Kordlar Tepe IIa continued to serve as a small fortress or fortified manor house. The main entrance to the Hasanlu citadel was located on the southwestern side of the *tepe*. Dyson asserts a triple-road system occupied this area, but Kroll has challenged this interpretation following his thorough re-examination of the excavations in this poorly understood area of the site. I have chosen not to include architecture from this sector on the plans presented here (Figs. 1.4, 1.5), as it would be premature to attempt to reconstruct the gateways and passages leading up to the western citadel. The slopes

of the citadel seem to have had glacis, and evidence of a likely Iron II fortification wall was uncovered in small exposures on the High Mound (see Chapter 3). Dyson has also pointed out that the Lower Outer Wall and Upper Outer Wall of the west slope suggest the settlement was fortified (1989a:110). I would add that the Western Enclosure and BBXI formed parts of the fortified entry (see Dyson 1989a:110, fig. 4). The southern end of BBII suggests the existence of a fortification wall to its south. Multiple glacis “layers” were exposed on the slopes of the High Mound in early soundings, but these are difficult to attribute to a specific period since the High Mound was fortified in Periods I, II/IIIa, IIIb/c, IVb and likely in IVc. The presence of an Iron I–II circumvallation protecting the citadel is also indicated by internal gateways and patterns of controlled access within the citadel. In the Iron II, two fortified access points are known on the western side of the citadel. These are the so-called Double Gate (BBVIII) and the Chariot Gate (BBVIS) and adjacent Foot Gate (BBVIN; Fig. 1.6). Similar spatial patterns are reflected in the architecture of the late LBA and Iron I (see Chapter 3). The area of the Western Enclosure (cf. Dyson 1989a: fig. 6b) and BBXI likely controlled access to an open area to the north that led to the so-called Double Gate and the northwestern citadel. As in the Iron I, the northwestern citadel was dominated by BBIII. This columned-hall structure was an elite residence in the Iron I–II. In the Iron II, an enclosed courtyard with a gate structure was added to the building. To the east, BBVIII was only partially investigated. The small architectural exposure resembles BBVII to the southwest which, in light of its architectural form and contents, likely served a military function. BBVI–BBVIII defined the northwest corner of a large open space, at the south end of which were fortified gateways controlling access to the Upper Court and Lower Court. The Lower Court Gate was an imposing structure with a buttressed façade and towers flanking a stone-paved gateway, which provided access to the large, stone-paved Lower Court,⁴ the heart of the citadel. The Upper Court likely also had a gateway south of the stone steps leading to it. At this point, one could proceed to the portico entry of BBIW, which I interpret as another elite residence akin to BBIII, only larger. The exact function of this monumental columned-hall structure is difficult to ascertain since

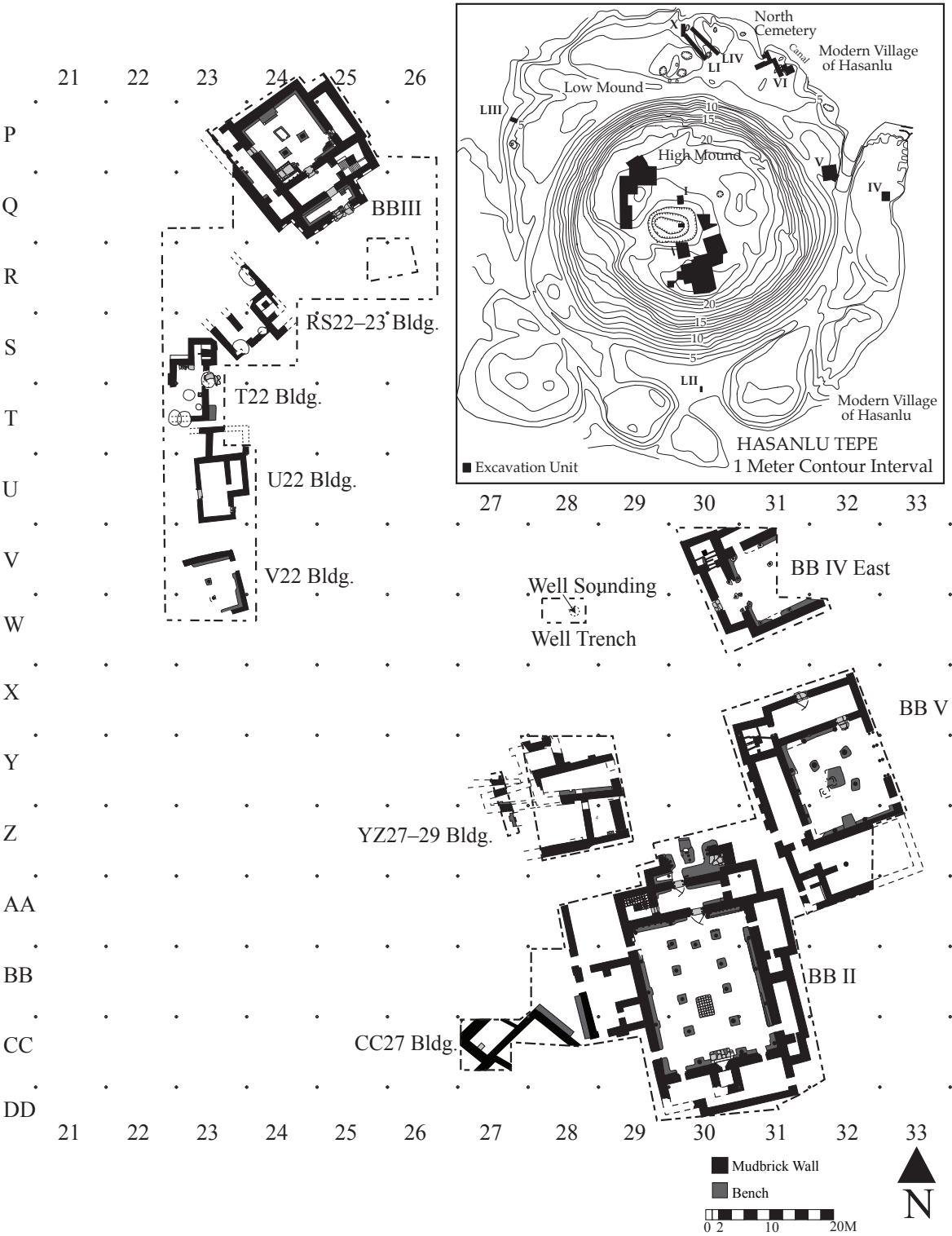


Fig. 1.5 The Iron I Citadel of Hasanlu Tepe.



Fig. 1.6 The Iron II Citadel of Hasanlu Tepe.