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THE CREATION OF THE ASSYRIAN HEARTLAND: NEW DATA FROM THE 'LAND BEHIND NINEVEH'

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INTRODUCTION

The history of Assyria involved a long process of territorial expansion, sustained by an ideology of universal conquest, that culminated between the eighth and seventh centuries BCE in the formation of what became the most extensive territorial power in the history of the ancient Near East prior to the rise of the Achaemenid Empire (Liverani 1988; Postgate 1992; Liverani ed. 1995; Fales 2001). Assyrian royal elites narrated the empire through a rich written and iconographic documentation supported by the construction of a vast array of imperial infrastructures – such as massive regional hydraulic systems¹ and road networks² – and were involved in the construction of large urban centres with magnificent public buildings and stunning court art.³ Assyrian palace bureaucracies conceived of this abundant documentation and the 'signature landscape' resulting from its territorial realisation (Wilkinson 2003: 11–14) as a means to reinforce an official narrative that aimed to enhance the successes of the empire (Liverani 1979; Oded 1992; Tadmor 1997; Pongratz-Leisten 1999).

Since its beginnings in the mid-nineteenth century, archaeological research in Assyria, misled by the strongly royal- and elite-focussed character of the documentation unearthed by excavations, has adopted a strictly top-down perspective with the aim of bringing into focus the enormous capitals and provincial centres of the empire, their monumental public architecture, archives and figurative art (Larsen 1994). Such a biased approach has led to an understanding of the empire modelled on the image that the Assyrian kings and

elites wanted to hand down to posterity, wholly obscuring the contribution given to its construction by common people and other social actors, such as deportees of Assyrian military campaigns and by nonstate, rural and peripheral contexts as opposed to urban and central environments.

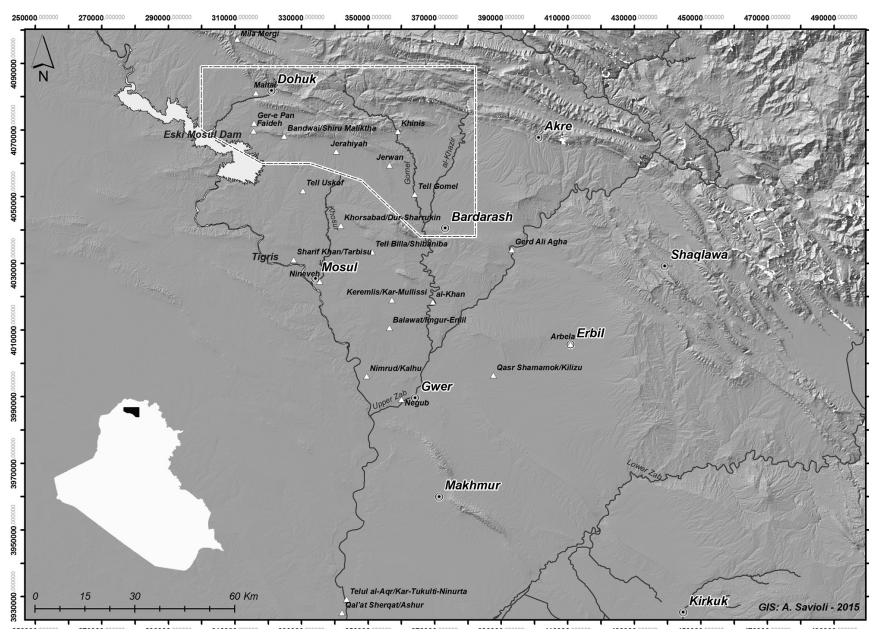
More recent studies, however, have emphasised that the evidence from rural areas and nonelite contexts has so far not been used to its full potential in the reconstruction of the Assyrian Empire and its organisation (Fales 1990; Wilkinson 1995; Morandi Bonacossi 1996; 2000; Wilkinson and Barbanes 2000; Wilkinson et al. 2005; Fales 2008; Ur et al. 2013; Ur 2017). The present chapter builds on this previous research on the landscape and rural milieu of the Assyrian Empire. Its goal is to show to what extent the rural environment of the very centre of the empire, the hinterland of the last Assyrian capital, Nineveh, was increasingly transformed and appropriated by the introduction of new policies of settlement, agricultural development and demographic changes, the building of great infrastructures and the ideological construction and commemoration of a newly created imperial landscape. At the same time, this chapter will illustrate how the deep-seated landscape transformation of the 'Land behind Nineveh' documented by the archaeological record in the late Neo-Assyrian period was in fact the result of a lengthy process of change that had already started in the Middle Assyrian period, when the set of instruments of imperial power used to shape and extensively reorganise the landscape of Assyria first took form (also Düring, this volume).

THE MAKING OF THE 'LAND OF ASHUR'

Many scholars have emphasised how from the late fourteenth century BCE onwards the rulers of the Middle Assyrian period transformed the 'Land of Ashur'⁴ from a small merchant city-state trading with Anatolia (Veenhof and Eidem 2008) into the centre of an expanding regional state (Figure 3.1; Postgate 1992; Tenu 2009; Brown 2013; Harmanşah 2013: 72–93; Mühl 2013: 172–98; Brown 2014; Mühl 2015). Intensification of settlement and agricultural production through a policy of foundation of new administrative and rural sites and settlement expansion into agriculturally marginal areas, made possible by the development of new irrigation systems, were among the strategies deployed by the Assyrian state in this early stage of its process of territorial growth (Mühl 2015: 55).

The foundation of a new administrative capital at Kar-Tukulti-Ninurta on the east bank of the Tigris, only 3 kilometres upstream from Ashur, represents

the first physical departure of the administrative apparatus of the state from Ashur, replacing it with an entirely new city endowed with palaces, temples, other public structures and residential neighbourhoods and delimited by fortifications. (Harmanşah 2013: 84)



3.1. Location of the Land of Nineveh Archaeological Project (LoNAP) survey area in the northern region of Iraqi Kurdistan and the core territory of the Assyrian Empire with major sites (produced by Alberto Savioli).

The new capital city, which covered an enormous area of 500 hectares (Dittmann 1997: 269), seven times the size of Ashur (70 hectares), and its hinterland were economically supported by the creation of a regional irrigation programme based on the construction of the *Pattu meshari*, the ‘Canal of Justice’ (Andrae and Bachmann 1914; Eickhoff 1985; Dittmann 1990; 1995; Gilibert 2008). This canal system can be linked to a large-scale irrigation network consisting of a canal running along the Tigris and crossing the upper river terraces east of the city, and a second system diverted from the Lower Zab (Andrae 1938: 122–3; Eickhoff 1985: 18, plan 1; Dittmann 1995: 89 fig. 2; Altaweel 2008: 76; Mühl 2015: 55). Although, as Mühl observes, the dating of the entire irrigation system to the Middle Assyrian period cannot be ascertained due to the reuse of the canals in later periods, more than thirty Middle Assyrian sites have been recorded between the Ashur and Kar-Tukulti-Ninurta, on the one hand, and the Lower Zab confluence, on the other. This settlement pattern strongly suggests a centrally planned colonisation of the semiarid upper Tigris terrace through canal irrigation and a deliberate foundation programme of new administrative and rural settlements (Mühl 2015: 55, fig. 3.3).⁵

During the late second and early first millennia BCE, the ‘Land of Ashur’ gradually shifted northwards. By the Neo-Assyrian period, the imperial core had moved from the Middle Tigris Valley and encompassed a roughly triangular region between Ashur and the Neo-Assyrian capital cities Kalhu, Dur-Sharrukin

and Nineveh and the great provincial centre of Arbela (Radner 2006; 2011; Harmanşah 2013: 72–3).⁶ During this period, a well-developed set of imperial control technologies, which had its roots in the Middle Assyrian period, was implemented so as to materially and ideologically form and commemorate the landscape of this new political and territorial entity. These repertoires of rule included, first, the foundation of large fortified capital and provincial cities; second, the forced migration of deportees; third, the creation of a dense network of small rural settlements; fourth, the construction of hydraulic systems of regional scale; and fifth, the symbolic appropriation of dominated landscapes.

The Foundation of Large Fortified Capital and Provincial Cities

The transfer of the political capital from Ashur to Kar-Tukulti-Ninurta in the thirteenth century BCE was followed by the creation of new capitals at Kalhu by Ashurnasirpal II (360 hectares), Dur-Sharrukin by Sargon II (320 hectares) and Nineveh by his son, Sennacherib (750 hectares).⁷ Provincial centres of large size were also founded from the Middle Assyrian period onwards (e.g. Tell Sheikh Hamad/Dur-Katlimmu, which reached a surface of 110 hectares in the Neo-Assyrian period and Erbil/Arbela with its possible size of 330 hectares; Kühne 2011; Nováček, Ali Muhammad Amin and Melčák 2013: 34).⁸ These cities became the hubs through which the territory of the empire, divided into provinces, was administered. In these urban centres, the signs of the imperial presence were concentrated: the palaces from which the governors administered their provinces, fortifications and the king's military garrisons. Through the provincial centres, the imperial power collected the wealth of subject areas on an annual basis according to precise calculations in relation to the nature of local resources. However, the majority of provincial cities did not achieve the colossal size of the political capitals, which represent episodes of dramatic and unique urban growth at least in dry-farming northern Mesopotamia (e.g. Tell Ahmar/Til-Barsip covered about 60 hectares and Qasr Shemamok/Kilizu between 50 and 80 hectares, whilst Ziyaret Tepe/Tushan reached 35 ha; Matney et al. 2011; Ur et al. 2013: 100–1; Bunnens 2014: 38). Assyrian provincial towns were centrally designed cities, which have yielded abundant evidence of elite presence and building activities (Pucci 2010; Kühne 2011: 146; Matney et al. 2011; Bunnens 2014). The political capitals were also planned (Ur 2013), with the close involvement of the king and the imperial elite in their construction (Fuchs 1994: cylinder 47–9; Parpola 1995).

The Forced Migration of Deportees

The settlement and growth of the political and regional capitals in the core of the empire were achieved not only by means of natural demographic processes,

but especially through the forced migration of deportees, which deeply changed the demographic landscape of the empire (Oded 1979; Morandi Bonacossi 1996; 2000; Ur 2017). The forced relocation of people in the Assyrian Empire took place at different levels, depending on whether members of the enemy court entourage, skilled workers or ordinary people were moved. In Assyria, the deportees, who did not constitute a separate juridical group among the indigenous inhabitants but were ‘counted as Assyrian people’,⁹ were often taken to large urban centres, employed as labourers for large construction projects, presented to the gods as oblates (persons offered to the service of a god), deployed in specific administrations of the empire and even conscripted into the army (Oded 1979). The documents also attest to crossed deportations in the periphery of the empire. The bonds of the deportees with their own area of origin were severed and they had no cultural and/or ethnic attachment to the country where they were posted, which was usually far from their homeland (Oded 1979: 51); consequently, they were loyal to the king. Forced migration and deportation were undoubtedly used by the Assyrian rulers as techniques of political control of populations considered disloyal. Deportations were also – and especially – a means of promoting economic growth in the empire (Oded 1979). From the late tenth century BCE to the reign of Ashurbanipal (668–631 BCE), the Assyrian kings boasted the deportation of more than 1,300,000 prisoners of war (Liverani 2011: fig. 139). Written records and settlement patterns document population decrease and site abandonment in Palestine following Assyrian deportations (Na’aman 1993; Na’aman and Zadok 2000). In his royal inscriptions, Sennacherib, the most prolific promoter of deportations among Neo-Assyrian rulers, recorded almost half a million deportees, whose primary destination was Nineveh and its rural hinterland (Oded 1979: 33, 366–9). Although forced migration and deportation became intensive and systematic during the Neo-Assyrian period, especially from the reign of Ashurnasirpal II (883–859 BCE) onwards, the first written records documenting this practice in fact date to the reigns of the thirteenth century BCE Middle Assyrian rulers Shalmaneser I (1273–1244 BCE) and Tukulti-Ninurta I (1243–1207 BCE; Grayson 1987; 1991).

The Creation of a Dense Network of Small Rural Settlements

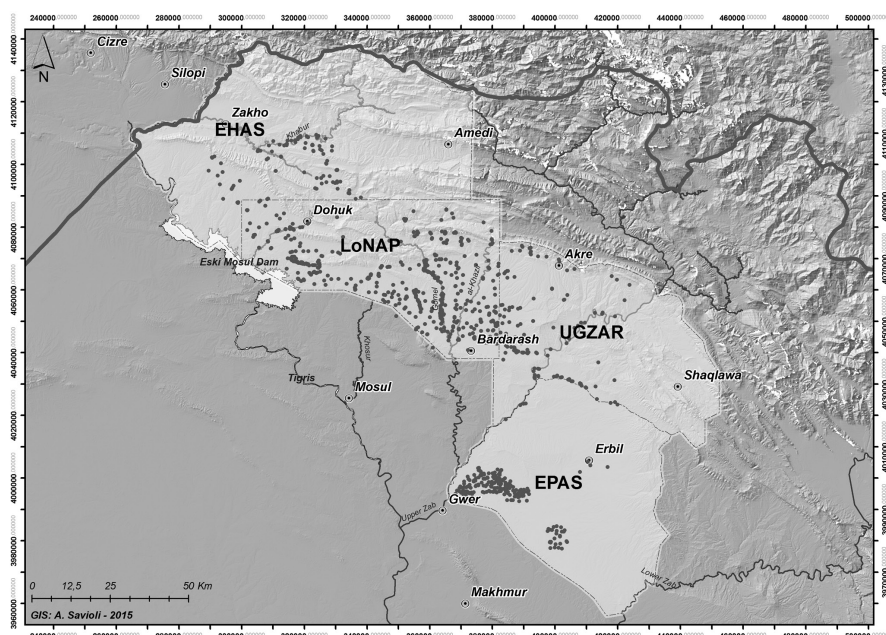
The Assyrian capital cities and provincial centres were surrounded by densely settled and highly productive countryside populated through the settlement of deportees. Survey projects throughout the Jazira and in southeastern Anatolia, at the western and northern margins of the Assyrian homeland, have delineated a diffuse Neo-Assyrian settlement pattern with numerous small sites, presumably agricultural villages and farmsteads (Wilkinson 1995; Morandi Bonacossi

1996; 2000; Wilkinson and Barbanes 2000; Parker 2001; Wilkinson et al. 2005; Anastasio 2007; Matney 2010; Ur 2010; Algaze, Hammer and Parker 2012; Ur et al. 2013; Morandi Bonacossi and Iamoni 2015; Ur 2017). The increase in the number of Neo-Assyrian sites dating mainly to the eight and seventh centuries BCE with respect to the previous Middle Assyrian period is extremely significant and in many cases massive (Morandi Bonacossi 1996: fig. 33; 2000; Wilkinson et al. 2005: 38–9, fig. 9). This scattered rural pattern suggests the top-down imposition of a planned agricultural colonisation on the landscape (Morandi Bonacossi 2000; Wilkinson and Barbanes 2000; Wilkinson et al. 2005; Ur et al. 2013; Ur 2017). Ur (2017) has emphasised how this strategy was accomplished by the Assyrian Empire in three steps, including, first, the resettlement of major Bronze Age sites, although usually on a more modest scale (Wilkinson and Tucker 1995: 61; Ur 2010: 112–14); second, the deliberate infilling of the gaps in the earlier Middle Assyrian settlement pattern that were newly colonised (Wilkinson 1995: 145–7; Wilkinson and Tucker 1995: 60–1; Morandi Bonacossi 1996: 105–19; Wilkinson et al. 2005: 40–4, fig. 12; Ur 2017; Ur and Osborne 2016); and, third, the conquest of previously unsettled regions *ina madbar*, ‘in the dry steppe land’ (Ibrahim 1986; Bernbeck 1993; Morandi Bonacossi 1996: 145–65; Einwag 2000; Morandi Bonacossi 2000; Wilkinson et al. 2005: 41; Kühne 2010; 2011; Mühl 2013: 40–2, taf. 22:2; Hole and Kouchoukos in press; Ur 2017). The first successful attempts to penetrate and colonise the dry steppe, however, had been undertaken already in the thirteenth century BCE, as the foundation of the Middle Assyrian site of Tell Umm Aqrebe in the Wadi Ajij steppe region to the east of Dur-Katlimmu indicates (Pfälzner 1993).

The pattern of rural colonisation has been reconstructed on the basis of the evidence from field surveys conducted in the peripheral regions of the Assyrian Empire, but until very recently it could not be tested in the countryside of the imperial core. Ongoing survey projects in the central and northern parts of the Kurdistan region of Iraq (Figure 3.2), however, are now starting to document this rural pattern of settlement also in the hinterland of the Neo-Assyrian capitals (see later in this chapter and Ur et al. 2013: 102; Morandi Bonacossi 2016; Morandi Bonacossi and Iamoni 2015).

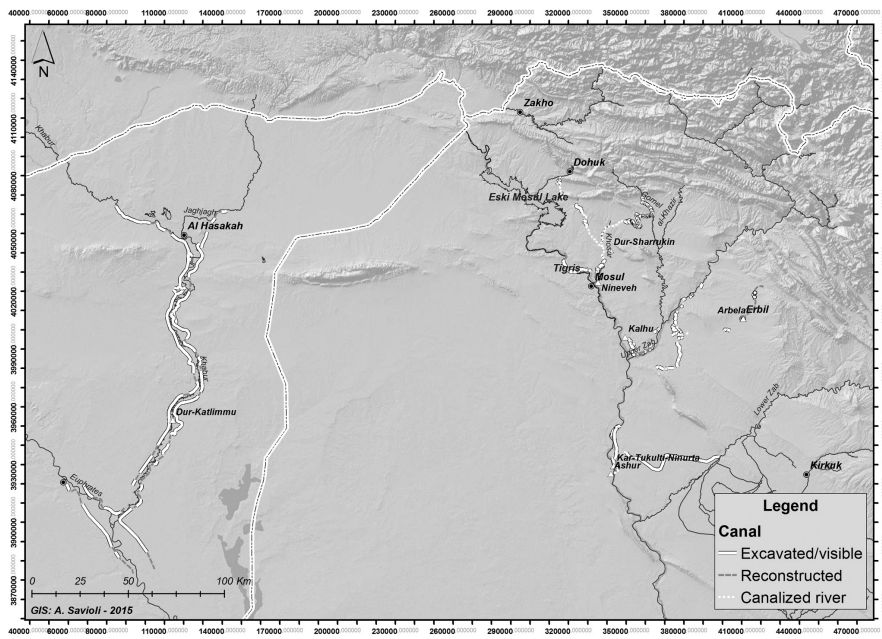
The Construction of Hydraulic Systems of Regional Scale

The widespread intensification of rural settlement in the Assyrian countryside throughout the home provinces between the Tigris and Euphrates regions and the urban and demographic development of the political and regional capitals of the empire were supported through the reorganisation of Assyria’s natural hydrology and the creation of centrally planned hydraulic systems of regional



3.2. Ongoing survey projects in the central and northern regions of Iraqi Kurdistan. (Produced by Alberto Savioli; based on data kindly made available by the EHAS, UGZAR and EPAS projects. For the acronyms used, see footnote 14.)

scale based on a high input of resources, technology and labour (for literature, see footnote 1). In the Assyrian homeland, between the Tigris and Khabur valleys, massive canal networks were excavated, which engineered and redirected the surface hydrology of rivers, wadis and the numerous karst springs into canals that fed cities and irrigated the countryside (Figure 3.3; Wilkinson and Rayne 2010). The construction of local and regional canal systems had already started in the Middle Assyrian period at Kar-Tukulti-Ninurta and in the region of the Lower Zab confluence with the Tigris (Andrae 1938: 122–3; Eickhoff 1985: 18, plan 1; Dittmann 1995: 89, fig. 2; Altaweel 2008: 76; Mühl 2015: 55) and at least in the early Neo-Assyrian period at Dur-Katlimmu in the Lower Khabur Valley of eastern Syria (Kühne 2010; Pucci 2010; Kühne 2012).¹⁰ However, it was in the Neo-Assyrian period that massive irrigation systems were built in the hinterlands of Nimrud (Jones 1855; Oates 1968: 46–7; Davey 1985), Nineveh (Oates 1968; Reade 1978; Bagg 2000a; Ur 2005; Morandi Bonacossi and Iamoni 2015; Morandi Bonacossi in press), Erbil (Safar 1946; 1947; Ur et al. 2013: 104–5) and probably Kilizu (Ur et al. 2013: 105–6). Canals were derived from the Lower Zab in the Makhmur Plain to the north and the Ta'mim Plain to the south of the river, and also from the Tigris (Nahr Abbasiya, Nahr Safir al-Fil and Hafr Mullah Abdullah canals; Mühl 2013: 59–76, to a lesser extent already mapped in Altaweel 2008) and from the Khabur (see footnote 10 for references).



3.3. Main water systems in the Assyrian homeland (produced by Alberto Savioli; based on Safar 1946; Oates 1968; Ergenzinger and Kühne 1991; Dittmann 1995; Ur et al. 2013).

In the Neo-Assyrian period, the systematic creation of extensive water-scapes in semiarid regions of the empire permitted intensified irrigation and agricultural production in large parts of the ‘Assyrian dry-farming belt’, and not only in the Assyrian core as argued by Altaweel (2008: 123). The imperial modification of the landscape achieved through the creation of huge hydraulic infrastructures released the Assyrian staple crop economy from the uncertainty associated with the irregularity of rainfall and strongly improved its agricultural productivity. This canal building activity was coupled with the construction of a branched transportation infrastructure, such as the road network known as *harran sharri*, the ‘royal road’, which is well documented by written sources and the numerous hollow ways detected from CORONA images in the Ashur and Nineveh regions (Kessler 1980; Fales 1990: 98–9; Kessler 1997; Kühne 2011: 144–5; Wilkinson et al. 2005: 32–7; Altaweel 2008; Mühl 2013: 55–7; Danzig in press).¹¹ The building of navigation infrastructure along navigable canals and river courses, such as the recently discovered Al-Khazir quay-walls (Morandi Bonacossi 2014; in press), fit into the same general scheme. The use of waterways for boat transport¹² and their equipping with shipment, loading and unloading facilities must have greatly contributed to the reduction of the frictional effect of long-distance transportation of bulk food commodities and building materials across the country.

The Symbolic Appropriation of Dominated Landscapes

Finally, the excavation of impressive irrigation systems across the country not only changed the economic foundation of the regions involved, transforming them from extensive dry-farming regions into highly productive irrigation agriculture areas, but also profoundly modified the space and settlement patterns in the core of the Assyrian Empire, along with the mental and symbolic perception the people had of this newly created cultural landscape and its collective memory. The newly engineered waterscapes were in fact associated with commemorative monuments (rock reliefs, stelae and royal inscriptions) placed at symbolically charged locations (Morandi Bonacossi 1988; Shafer 2007; Harmanşah 2007; 2012; 2013: 73), for example, where the water of a river or a spring was diverted into a canal (e.g. the Neo-Assyrian reliefs at Khinis and Maltai; Bachmann 1927; Jacobsen and Lloyd 1935; Bär 2006); at other liminal places linked to the presence of water, such as springs; sources of rivers, such as the source of the Tigris in eastern Turkey (Harmanşah 2007; 2012); or river gorge outlets, such as at the Nahr Al-Kalb in Lebanon (Weissbach 1922; Börker-Klähn 1982). These Assyrian monuments were scattered throughout the landscape as symbols of royal power and its divine legitimisation already in the late Middle Assyrian period,¹³ even though from the thirteenth to the early ninth centuries BCE stelae were set up mainly at Ashur, Nineveh and Kar-Tukulti-Ninurta and were mostly associated with the building activity of the Assyrian rulers (Morandi Bonacossi 1988: 139–40). The textual references to the erection of stelae and the carving of rock reliefs and the related archaeological finds show that these commemorative monuments were transposed from the main urban centres into the wider Assyrian landscape essentially from the reigns of Ashurnasirpal II and Shalmaneser III onwards (Morandi Bonacossi 1988: 141–55). From the early Neo-Assyrian period, these monuments were embedded in foreign or frontier landscapes, marking their incorporation into the ‘Land of Ashur’ (Morandi Bonacossi 1988; Shafer 2007; Harmanşah 2013: 93–101). The new centre of the empire was therefore built and commemorated ‘through the act of carving the living rock’ (Harmanşah 2013: 94), often in association with water and hydraulic structures. The sculpting of commemorative inscriptions and reliefs attempted ‘to claim places as previously untouched, unmarked surfaces, and to leave a mark that would then last for many generations, if not for eternity’, thus symbolically transporting these places into the ‘Land of Ashur’ (Harmanşah 2013: 93–4).

THE ASSYRIAN LANDSCAPE IN THE ‘LAND BEHIND NINEVEH’
AND ITS TRANSFORMATION

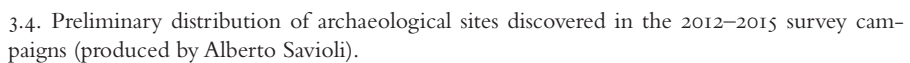
The foundation of planned cities, the rural colonisation of the landscape surrounding the political and regional capitals and of steppe land previously

considered too marginal for cultivation by means of forced migration of deportees, the development of engineered water management and the ideological signature imposed on the landscape of Assyria through its marking with commemorative monuments all suggest a highly structured, centrally planned and elite-sponsored programme. This top-down model is the result of field research on Assyrian landscapes that has taken place in neighbouring regions, mainly in the western Assyrian territories and along its northern frontier, but not in the imperial core.

The recent opening of a new phase of research in the region of Iraqi Kurdistan has seen the launching of new survey projects in the central and northern parts of the region; in the hinterlands of provincial centres such as Arbela and Kilizu; and of the two last Assyrian capitals, Dur-Sharrukin and Nineveh.¹⁴ For the first time, the renewal of field research in Iraqi Kurdistan offers the possibility to investigate thoroughly the core region of the Assyrian Empire through archaeological survey projects based on modern holistic methodological approaches and the extended use of remote-sensing and digital technologies. The Italian Archaeological Mission to Assyria of the University of Udine has designed a specific field survey project, ‘The Land of Nineveh Archaeological Project’ (LoNAP), to investigate – among other topics – the repertoires of rule that shaped the core of the Assyrian Empire through the analysis of the settlement patterns that are emerging from survey work in a region of almost 3,000 square kilometres straddling the Governorates of Dohuk and Ninawa in northern Iraqi Kurdistan (Figure 3.4; for the history of research in the region, see Morandi Bonacossi 2012–2013: 181–5; Morandi Bonacossi and Iamoni 2015). The survey aims at bringing into focus the crucial region located in the hinterlands of Dur-Sharrukin and Nineveh that has never been systematically surveyed before and is delimited by the plain of Dohuk and the Zagros foothills to the north, the lake formed by the Eski Mosul Dam to the west and the Navkur plain that extends from the Jebel Maqloub to the River Al-Khazir Valley and the Bardarash region to the east.

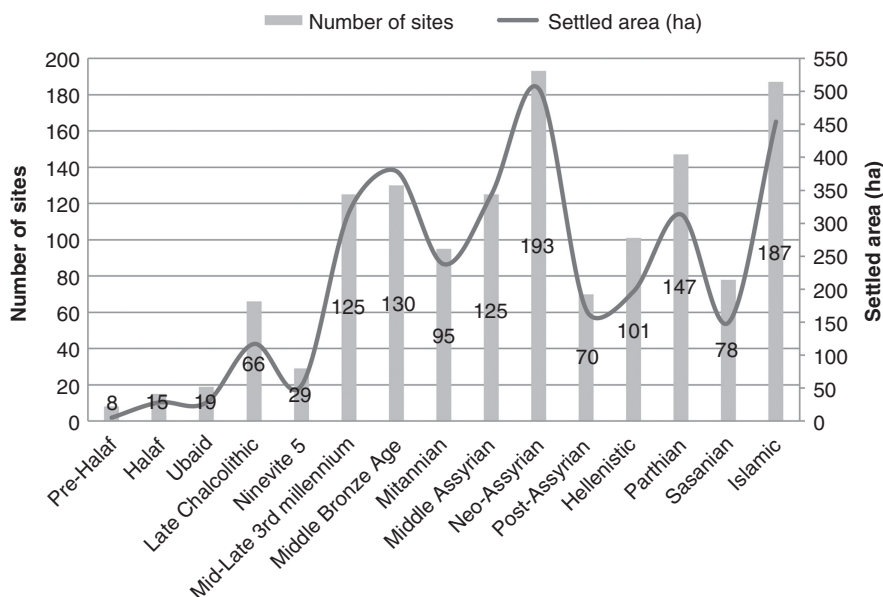
LoNAP Goals and Research Methods

LoNAP is a landscape archaeology project based on a stratified archaeological survey, combined with the archaeological excavation of the site of Tell Gomel, which has already been investigated in a preliminary manner and where an archaeological excavation is planned after the completion of the survey. The overall goal of this wide-ranging, multidisciplinary research project is to bring into focus the formation and evolution of the cultural and natural landscapes of this important region of ancient Mesopotamia, from prehistory up to the Islamic era (for more details, see Morandi Bonacossi and Iamoni 2015). Within this general framework and from the perspective of the present chapter, the



Archaeological field survey work was preceded by the systematic examination of available cartographic sources and the analysis and interpretation of satellite imagery, mainly declassified CORONA photographs (especially Missions 1039, 1102, 1104 of 1967 and 1107 of 1969), in order to identify potential archaeological sites, ancient infrastructures and other archaeological features (for more details, see Morandi Bonacossi and Iamoni 2015).

Site mapping and collection were based on the identification of settlement site boundaries by means of three parameters: first, the presence of organic anthrosols (Menze and Ur 2012); second, concentrations of archaeological



3.5. Preliminary chart of settlements and total settled area discovered in the 2012–2015 seasons. Number of sites (bars): left vertical axis; total settled hectares (line): right vertical axis.

finds; and, third, mounding. A handheld Global Positioning System (GPS) receiver and a Geographic Information System (ArcGIS 10.1) spatial database were used to record all surface ceramic collections, which were sampled through full area coverage and using collection areas determined on the basis of site topography. During the survey, only diagnostic sherds and small finds were collected. The dating of these was based upon a ceramic typology generated by Wilkinson and Tucker for the Iraqi ‘North Jazira Survey’ (Wilkinson and Tucker 1995) and later revised and integrated by Ur (2010: appendix B). This typology is continuously updated with new region-specific types by the EHAS, LoNAP, UZGAR and EPAS projects so as to develop a pottery typology that can effectively characterise regional ceramic identities and variability (Gavagnin, Iamoni and Palermo 2016).

Settlement Patterns in the Land behind Nineveh from the Middle Bronze Age to the Iron Age

After three very intensive and rewarding survey seasons,¹⁵ the preliminary results of the LoNAP survey make it possible to follow the deep transformation in the settlement patterns that occurred in the Land behind Nineveh from the Middle Bronze Age through the Neo-Assyrian period (about 2000–612 BCE; Figures 3.4 and 3.5); compare this with the pattern of dispersed rural colonisation first documented in recent surveys in the western and northern Assyrian territories; and test this model in the core region of the last two

TABLE 3.1. *Number of Sites and Site Density per Square Kilometres from the Mid–Late-Third Millennium BCE until the Iron Age/Neo-Assyrian Period*

	Mid-late 3rd mill. BCE	Middle Bronze Age	Mitannian	Middle Assyrian	Neo- Assyrian
No. of sites	125	130	95	125	193
Density/km ²	0.07	0.08	0.06	0.07	0.11

TABLE 3.2. *Aggregate Site Area in Hectares from the Mid–Late-Third Millennium BCE until the Iron Age/Neo-Assyrian Period*

	Mid-late 3rd mill. BCE	Middle Bronze Age	Mitannian	Middle Assyrian	Neo-Assyrian
Aggregate site area in ha	316	379	238	343	504

Assyrian political capitals, Dur-Sharrukin and Nineveh, of the late eighth and seventh centuries BCE.

The transition from the mid-late third millennium BCE settlement pattern to that of the following Middle Bronze Age corresponds to a substantial stability of regional occupation (Tables 3.1 and 3.2). The number of settled sites slightly increases from 125 to 130, site density remains basically unaltered, whilst the aggregate settled area rises from 316 to 379 hectares.¹⁶

The Middle Bronze Age settlements are concentrated in the Navkur Plain in the southeastern part of the survey area. This region is characterised by fertile soils and abundant water, since it is crossed by the rivers Gomel, Nardush and Al-Khazir and several wadis. Numerous karst springs and a water table which is close to the surface, especially in the southern part of Navkur, further increase water availability in the area (for details, see Morandi Bonacossi and Iamoni 2015; Morandi Bonacossi in press). Because of this favourable hydrological and geopedological situation, cereals (especially wheat, but also barley and even rice) and different kinds of fruit and vegetables can currently be cultivated using a dry-farming system, which is also locally enhanced by irrigation.

Middle Bronze Age sites are also scattered throughout the piedmont belt of the Zagros foothills between the modern towns of Sheikhan, Ba'dreh, Al-Qosh and Dohuk. Most of the settlements were small-sized rural villages in the range between less than a hectare and 4 hectares, with about fifteen slightly larger sites between 4 and 8 hectares. Only four sites, nearly all located in the more productive Navkur Plain, are larger than 8 hectares. The largest of these, Tell Gomel (ca. 20 ha), is located in the lower Gomel Valley, at the heart of Navkur, and – with its long occupation sequence, which started in the Chalcolithic

(with probable occupation already in the Pottery Neolithic) and continued into the Ottoman period – functioned as the most important central place in the whole region during most of the Bronze and Iron Ages (Figure 3.4). A small trial trench dug on the eroded western slope of the southern lower town has brought to light three – partly pillaged – vaulted baked-brick tombs, belonging to a larger burial area. These Middle Bronze Age tombs, elaborately constructed and with some grave goods, including miniature ceramic vessels, a zoomorphic terracotta figurine, bronze and bone pins and beads of vitreous material and carnelian, suggest the existence of a local elite at the site.¹⁷

During the Mitanni period, there was a reduction in the regional occupation in terms of number of settled sites (Figure 3.5 and Tables 3.1 and 3.2). Settlement patterns of the Mitanni period in Upper Mesopotamia are still poorly understood, and have not been thoroughly investigated in the past especially due to the difficulty of differentiating ceramic surface assemblages (Wilkinson and Tucker 1995: 58–60; Ur 2010: 267; Algaze et al. 2012: 31). However, the excavation of well-stratified pottery assemblages at several Mitanni and Middle Assyrian sites in the recent past and their association with absolutely dated cuneiform tablets (Pfälzner 1995; 2007: 237–57, Duistermaat 2008; Reiche 2014; Montero Fenollós 2015) shows that despite a limited degree of continuity, especially in ceramic tempers and decorations (but not in pottery types) between these two periods, as a whole Mitanni and Middle Assyrian pottery productions appear now to be distinguishable also at the level of survey assemblages (see also Koliński 2014: 180; 2015; and Morandi Bonacossi 2016: 146–7).

Although the decrease in the number of Mitanni settlements is not great with respect to the Middle Bronze Age,¹⁸ the decline in terms of aggregate site area and site density is more significant. This is related to the fact that most of the Mitanni sites are small, probably rural villages, ranging in size from 1 to 3–4 hectares. Only three sites were larger than 4 hectares, but smaller than 6 hectares, and no significant town seems to have existed in this intensely farmed rural region of Upper Mesopotamia (Tell Gomel reached an estimated surface of 4 hectares, even though the estimate of the site's surface area for the Mitanni period is made difficult by the mighty later overburden).¹⁹

Renewed growth in settlement number, site density and total settled area distinguishes the Middle Assyrian period, when site numbers and the aggregate site area are similar to those of the Middle Bronze Age. This is an indication of the overall stability of settlement and population levels in the region in the second millennium BCE after the decline and marked ruralisation of the Mitanni period. Among the Middle Assyrian sites found so far, only thirty-five were not occupied during the Middle Bronze Age (28 per cent), so 72 per cent of Middle Assyrian sites were already settled before. This suggests that the Middle Assyrian occupation of the region did not impose an entirely new settlement system on the area, but rather revitalised already existing settlement

networks of the late third and first half of the second millennium BCE that were still present. The Erbil Plain Archaeological Survey on the lower Chai Siwasor and Chai Kurdara has recently recorded a similar trend (Ur and Osborne 2016: fig. 3).

In the neighbouring Cizre-Silopi area (Algaze et al. 2012: 31–3), the North Jazira Survey (Wilkinson and Tucker 1995: 59–60, figs. 37 bottom and 41 top) and the Eastern Syrian Jazira, Middle Assyrian sites were significantly less numerous than in the LoNAP region (Bernbeck 1993; Morandi Bonacossi 1996; Donella 2002; Anastasio 2007; Tenu 2009; Ur 2010; Brown 2014; Koliński 2014; 2015). This indicates a reduced settlement density and weaker population growth dynamics in the northern and western margins of the Assyrian territories with respect to the core region of Assyria. The dense Middle Assyrian occupation pattern in the Land behind Nineveh probably reflects a new interest in the fertile northern plains of Assyria and in the control of the Tigris communication route. This route gave access to the Anatolian highlands and the Middle Assyrian Upper Tigris enclaves (Parker 2001), which started to grow from the late fourteenth century BCE onwards as a result of the northward shift of the core region of Assyria from the Middle Tigris Valley around Ashur to the Transtigradian piedmont plains.

During the Middle Assyrian period, settlement continued to be concentrated in the Navkur Plain especially, but was more scattered in the Zagros foothills. Tell Gomel, covering 20 hectares, was the most prominent site in the region, as in the Middle Bronze Age. Likewise, site-size classes remain basically unchanged in comparison with the Middle Bronze Age. Middle Assyrian settlement was essentially rural and dominated by numerous scattered village-sized sites of between less than a hectare and 4 hectares in surface area. A slight size increase is recorded only in the upper reaches of the settlement hierarchy (6 to 12 hectares), but in general the settlement pattern indicates a strong cultural continuity with the Middle Bronze Age, as has already been demonstrated for the Syrian and Iraqi Jazira by Mallowan (1947: 19–20) and Wilkinson and Tucker (1995: 59).

The Neo-Assyrian settlement pattern, which represents the zenith of human occupation in the region prior to modern times, sees the continuation of and further increase in the settlement development recorded for the Middle Assyrian period (Figure 3.5, Tables 3.1 and 3.2). With its plentiful water resources and fertile soils and its proximity to the last Assyrian capital cities of Khorsabad and Nineveh (Figure 3.4), the region became an extremely densely occupied zone of settlement and a strategic cereal-crop producing area for the new imperial capitals that had grown enormously and were enlarged through the forcible resettlement of peoples from conquered lands (Oded 1979: 366–9). The preliminary results of the LoNAP survey delineate a settlement pattern based upon a dense network of widespread rural villages and small, isolated

farmsteads scattered throughout the landscape behind Khorsabad and Nineveh. A comparison with the distribution of Middle Assyrian sites shows a 54 per cent increase in the number of settlements, from 125 to 193.²⁰ There is no certainty that all these sites were contemporaneous, although the relatively brief duration of the Neo-Assyrian period – less than four centuries – makes it likely that most sites were indeed occupied at the same time.

Among the Neo-Assyrian settlements recovered so far, seventy-nine were not settled during the previous Middle Assyrian period. This means that about 40 per cent of the Iron Age sites were newly established. In parallel, the widespread scatter of Neo-Assyrian sites across the landscape and the foundation of new settlements led to the infilling of previously unsettled areas. This increased density is particularly evident in the Dohuk, Al-Qosh and Ba'dreh plains and the interfluvial zones of the Navkur Plain, for example along the wadis flowing into the River Gomel from the west, between the Gomel and the Al-Khazir and along the wadis to the east of the latter. Thus, numerous small mounds developed on what during the late second millennium BCE would have been uncultivated lands.

This colonisation of rural areas that were hitherto too marginal for cultivation through the infilling of empty areas between the earlier Middle Assyrian settlements is similar to the settlement density increases recorded by survey projects in the North Jazira Project area (Wilkinson and Tucker 1995: 60–1, fig. 41), the western Assyrian territories (Wilkinson 1995: 145–7; Morandi Bonacossi 1996: 105–82, figs. 20, 29, pls. 4–6; Wilkinson et al. 2005: 37–44, figs. 9, 12; Ur 2010: 111–14) and recently also in another region of the Assyrian imperial core, the lower valleys of the Chai Siwasor and Chai Kurdara between Nimrud and Kilizu (Ur and Osborne 2016: fig. 3). As observed by Wilkinson et al. (2005: 41):

this spread of Neo-Assyrian settlement ... represents not simply a change in the pattern and structure of settlement, but also apparently a change in the strategy of agriculture. Emphasis shifted away from relatively intensive cultivation around nucleated tells towards a strategy of extensification in which small settlements occupied many more land niches.

Table 3.3 shows how the density of occupation of the landscape in the LoNAP area also follows these trends recorded by surveys in the western Assyrian territories and in the imperial core region between Nimrud and Kilizu.

The size of the Neo-Assyrian settlements remains basically unchanged with respect to the preceding period. As in the Middle Assyrian epoch, the large majority of the settled sites are small rural villages or farmsteads ranging from less than a hectare to 4 hectares. The number of larger sites increases somewhat and, besides Tell Gomel in the heart of Navkur,²¹ one major centre of about 15 hectares emerges in the southern part of the plain: Tell Amiyān.

TABLE 3.3. *Neo-Assyrian Settlement in Seven Intensely Surveyed Regions of Upper Mesopotamia (Data from Bernbeck 1993; Morandi Bonacossi 1996; Wilkinson, Ur and Casana 2004: table 14.2; Ur 2010: table 6.10; Ur and Osborne 2016: table 1)*

Survey	Area (km ²)	Total settled sites	NA sites	Sites/km ²	Area (ha)
North Jazira Project	475	184	78	0.16	123.00
Tell Beydar Survey	316	82	35	0.11	97.00
Tell Hamoukar Survey	125	60	22	0.18	70.59
Lower Khabur Survey	400	128	66	0.16	268
Wadi 'Ajj Survey (dry steppe)	1,150	40	33	0.03	41
EPAS Lower Siwasor Zone	160	167	53	0.34	189.60
LoNAP Survey	1730 ^a	286	193	0.11	504

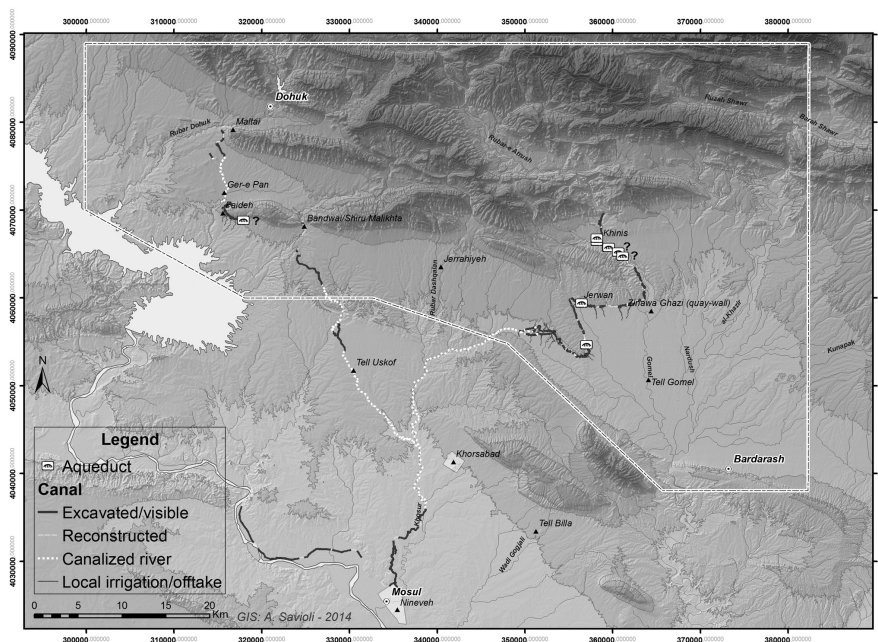
^aThe whole LoNAP area covers an area of 2,930 square kilometres. However, the survey region includes approximately 1,230 square kilometres of mountains, an area of undoubted archaeological importance, but of only limited accessibility due to its low archaeological visibility – and especially because of the presence of numerous still uncleared (and even unidentified) minefields and unexploded ordnance, left from the conflict between the Iraqi Ba'athist army and the Kurdish Peshmerga.

Notwithstanding their rich agropastoral potential, the Transtigradian plains in the hinterland of Khorsabad and Nineveh never underwent a vigorous urbanisation throughout their history. The size of archaeological sites always remained limited, probably as a consequence of the region's remoteness from the Assyrian core area and the capital cities and of the absence of major trade routes crossing the area (for further detail, see Morandi Bonacossi and Iamoni 2015).

The new preliminary survey data that are emerging on the Assyrian core region due to the ongoing survey projects in the region of Iraqi Kurdistan allow us to analyse the *longue durée* settlement patterns of the Middle Bronze Age, Middle Assyrian and Neo-Assyrian periods. The last of these was not a new chapter of imperial colonisation of the northern Assyrian plains, but rather a phase of rapid intensification and spread of settlement in an agricultural region that had already been extensively occupied in the Middle Assyrian period. At the same time, the agricultural colonisation of the Transtigradian plains of northern Iraq by Middle Assyrian rulers did not result in the top-down imposition of a novel settlement pattern. Instead, the process seems to have been a revitalisation of the earlier local occupation network of the Middle Bronze Age, which was still deeply embedded in the region's settlement tradition.

*The Neo-Assyrian Hydraulic Network in the Land behind Nineveh:
Agricultural Intensification and Landscape Commemoration in the Imperial Core*

The spread of Neo-Assyrian rural settlement in the Transtigradian plains to the north of Dur-Sharrukin and Nineveh, which took place through the establishment of new agricultural villages and the infilling of previously unsettled and



3.6. Preliminary reconstruction of the surveyed Neo-Assyrian canals in the Nineveh hinterland (produced by Alberto Savioli).

unexploited territory, was probably made possible by the forced immigration of deportees, in particular during Sennacherib's reign, but also by a change in agricultural strategy. The traditional dry-farming cultivation system of Upper Mesopotamia balanced the comparatively low productivity of agriculture due to the scarcity and irregularity of rainfall with the extensive land areas brought under cultivation. In the Neo-Assyrian period, this system appears to have been strengthened through two main strategies: the further extension of agricultural settlement through landscape infilling and the consequent occupation of new hitherto untouched land niches and the establishment of a new policy of agricultural development based on the introduction of new farming technologies.

During Sennacherib's reign, the Land behind Nineveh was involved in the construction of one of the most ambitious hydraulic engineering projects in the history of Assyria (Bagg 2000a; 2000b). The creation of this massive irrigation programme by the king, who claimed to have redirected the hydrology of the entire region upstream of Nineveh (Figure 3.6), has already been discussed by several scholars on the basis of the archaeological evidence (Bachmann 1927; Jacobsen and Lloyd 1935; Oates 1968; Reade 1978; 2000; 2002), remotely sensed data (Ur 2005) and textual sources (Bagg 2000a; 2000b). This canal network was linked to commemorative reliefs and monumental inscriptions carved on rock surfaces at Maltai, Faideh, Shiru Maliktha and Khinis and on

the Jerwan aqueduct, in locations that were in close geographic, functional and symbolic association with the hydraulic system itself. However, the comprehensive recording and study of this branched, 230-kilometre-long water system with its canals, earthworks, weirs, dams, sluices and aqueducts could not be accomplished until recently. This is due to the decades-long political instability of the region that has so far permitted only unsystematic and somewhat anecdotal gathering of data. The resurgence of archaeological activity in Iraqi Kurdistan in recent years, however, has enabled the Italian Archaeological Mission to Assyria to launch a specific project dedicated to the systematic and comprehensive study of the Assyrian irrigation system in the northern hinterland of Nineveh (Morandi Bonacossi 2012–2013; 2016; in press; Morandi Bonacossi and Iamoni 2015).

As is well known, the Assyrian hydraulic system was accomplished by Sennacherib over fifteen years – from 702 to 688 BCE – in four stages (Oates 1968; Reade 1978; Bagg 2000a; 2000b). The third and fourth stages of the system – the so-called Northern and Khinis systems – are located within the LoNAP research area and are currently under investigation.²² Previous research has focussed attention on the ideological and luxury function of this and other Assyrian irrigation programmes, which have often been considered projects for providing the Assyrian capitals with water and irrigating the kings' gardens (Oates 1968; Reade 1978; Bagg 2000a). This approach has downplayed the economic role of the Nineveh canals as a regional irrigation network, whose function was not only to water fields around Nineveh and its royal gardens, but also to irrigate the northern rural hinterland of the capital,²³ thus significantly raising its productivity and capacity to supply the imperial core with staple cereal crops.

Particularly significant with respect to the ideological signature imposed on the Assyrian landscape through the symbolic construction of the 'Land of Ashur' is the Khinis canal system, the fourth and last stage of Sennacherib's irrigation programme built around 690 BCE, with its impressive commemorative monuments (Bachmann 1927; Jacobsen and Lloyd 1935; Börker-Klähn 1982; Bär 2006; Ornan 2007; Shafer 2007). The waters of the River Gomel were diverted into a tributary of the Khosr by means of a 51-kilometre-long canal. Water was taken from the Gomel just above the village of Khinis, where the remains of the *bab nari*, the impressive intake works, have been identified.

In the so-called Bavian Inscription, which was engraved in three of the eleven rock-cut niches portraying Sennacherib in royal worship before twelve divine symbols, the king states that Mount Tas – the present Atrush mountain range, from which the water of Sennacherib's Canal was derived, lay 'on the border of Urartu' (Jacobsen and Lloyd 1935: 36). This is a very significant ideological statement by the king, who places the canal head in a frontier

landscape, in a liminal and politically contested place, and transports it to the centre of the empire by means of its marking with the Assyrian instruments of imperial power.

At Khinis, Sennacherib ordered the creation of a series of ideologically charged commemorative monuments with the aim of celebrating the imperial appropriation and transformation of the region as part of the 'Land of Ashur', not only through a programme of engineered landscape planning – part of which was centred exactly at Khinis, but also by means of its ideological commemoration (Harmanşah 2013). Beside the *narû*-monuments carved in the rock of the Khinis cliff, that is, the eleven rock stelae representing the royal *salam šarrutiya*, the 'image of my kingship' (Börker-Klähn 1982; Morandi Bonacossi 1988: 105–6; Bahrani 2003: 123; Harmanşah 2013: 94), the king commissioned the carving of other monuments. These include the 'Large Panel', representing Sennacherib receiving the symbols of royal power from Assur and Mulissu (Bachmann 1927: 7–13; Ornan 2007);²⁴ the so-called 'Rider Relief'; and a huge stone monolith that originally marked the canal head, carved with a relief again celebrating the king's royal investiture by the main gods of the Assyrian pantheon (Bachmann 1927: 14–16; Ornan 2007).

All these monuments have already been extensively discussed (Bachmann 1927; Bär 2006; Ornan 2007; Winter 2010) and will not be reviewed here. Of particular interest, however, is the long-neglected and quite puzzling Rider Relief, a sculptured panel – in poor condition due to severe weathering – which greets the visitor on the limestone cliff before the Large Panel (Bachmann 1927: 16–21, pl. 20; Börker-Klähn 1982: 206, no. 186). Two large, facing images of an Assyrian king are carved at the ends of the panel. Above these figures is a small row of deities mounted on beasts. A galloping rider with spear occupies the central part of the panel. Andrae, according to Bachmann, argued that the rider on the horse had been carved in two stages (Bachmann 1927: 19–21).²⁵ In a recent article, Reade and Anderson (2013: 96–121) have discussed this relief again and emphasised that the representation of an Assyrian rider at the centre of a wider scene featuring two kings in worship below divine symbols is not only without parallels in Assyrian iconography, but is also inexplicable in the wider context of Assyrian symbolism (Reade and Anderson 2013: 106, fig. 52). The authors propose to interpret the earlier rider as a memorial representing Alexander the Great's victory at Gaugamela in 331 BCE (Reade and Anderson 2013: 115–18, fig. 66).²⁶ Rock reliefs depicting royal or elite riders with a spear on a galloping horse are not unknown in the Hellenistic world. For instance, at Termessos in Pisidia, the death of Alcetas, brother of Perdiccas, defeated by Antigonos in 319 BCE, was probably commemorated through the carving of a rock relief representing the dead Diadochus on a horse with a spear in his right hand (Pekridou 1986).²⁷

It is suggested that later, probably in the Parthian period,²⁸ the two figures were reworked through the carving of a second memorial representing a horseman and commemorating an unknown event (Reade and Anderson 2013: fig. 68). Reade and Anderson's hypothesis of a memorial to Alexander's victory at the site of the Assyrian royal monuments commemorating the construction of the 'Canal of Sennacherib' is interesting and possible, but can hardly be demonstrated. The fact remains that memory of the Assyrian royal sculptural complex at Khinis was so embedded in the symbolic landscape of the region that it endured for a long time, attracting the carving of new memorials even centuries after the fall of the Assyrian Empire.²⁹

At Khinis, we have, therefore, a grandiose, extremely sophisticated and self-congratulatory programme, based on a series of interconnected commemorative royal reliefs and inscriptions carved into the bedrock in a frontier and liminal place. Similar sculptural programmes, aimed at reshaping the natural environment and invigorating the creation of a new engineered imperial landscape pervaded with royal and religious symbols – together with its own narrative – are also associated with other branches of Sennacherib's hydraulic system, where similar – though smaller and less complex – sculptural programmes were put at the service of Assyrian landscape commemoration. This is the case, for example, at Shiru Maliktha, on the Bandawai canal, where a niche is carved with the *salam šarrutiya* of an unknown Assyrian king, normally identified as Sennacherib (Al-Amin 1948: 186–9; Shukri 1954: 92–3, pls. 5–8; Reade 2002; Morandi Bonacossi and Iamoni 2015). At Maltai, on a cliff overlooking the Maltai canal head, which was fed by a spring, four panels were carved in the rock with the images of an Assyrian king and seven statues of Assyrian gods mounted on their symbolic animals (Thureau-Dangin 1924; Bachmann 1927: 23–7, pls. 25–32; Boehmer 1975; Börker-Klähn 1982: 210–11, nos. 207–10; Morandi Bonacossi in press). Julian Reade found three similar – though still buried – panels sculptured with reliefs (Reade 1978: 159–62; Börker-Klähn 1982: 208, nos. 200–1; Boehmer 1997) and another six have been discovered by LoNAP along the Faideh canal (Morandi Bonacossi 2016).

REASSESSING ASSYRIAN DEPORTATION PRACTICES

The general picture for the Middle Assyrian and the Neo-Assyrian periods that is emerging from LoNAP's work in the northern plains of Assyria well illustrates the gradual making of a complex, multilayered but coherent imperial landscape and its grandiloquent narration. This royal and elite-sponsored programme was imposed through a top-down process in the Assyrian countryside. However, as surveys conducted in the past thirty years in the northern and western margins of the Assyrian core region and currently ongoing at the heart of the imperial homeland suggest, many nonelite, peripheral and rural

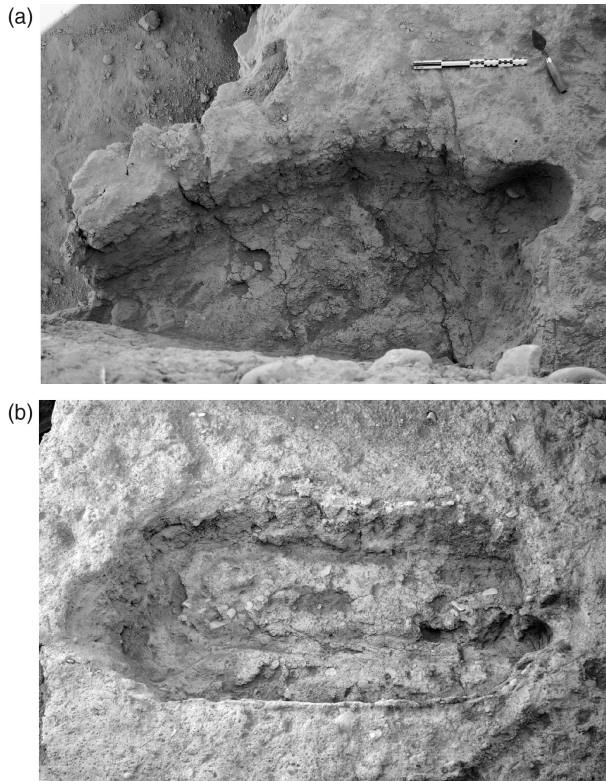
components of Assyrian society must have taken part in the colossal building process of this new imperial landscape.

For example, the Assyrian royal inscriptions indicate the forced migration and settlement of large masses of deportees as the instrument used by the Assyrian imperial elites to populate the countryside of the new capitals and provincial centres and implement their grandiose landscape engineering projects. Royal inscriptions and palace reliefs describe these forced migrations, but provide us only with ideologically biased evidence of the mass deportation of prisoners of war. Settlement patterns constitute so far the only available tangible – though indirect – archaeological evidence of the possible deliberate colonisation of the Assyrian countryside via forced settlement of conquered peoples. But are there other archaeological approaches that might yield evidence of the forcible migration and settlement of deportees in the Land behind Nineveh?

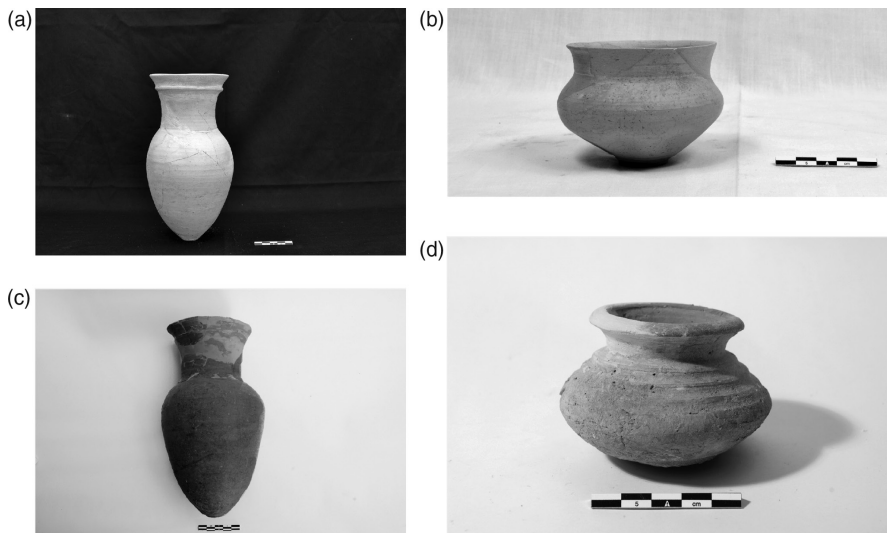
Anthony (1990; 1997) and Burmeister (2000) have rescued the archaeology of migration from the ideological shallows in which New Archaeology had run the debate aground, leading it ‘to reject migration as an explanatory concept and thus to banish it from archaeology’s field of vision’ (Burmeister 2000: 539). The attribution of changing archaeological settlement patterns to migration, as opposed to transformations produced by other forms of cultural transfer such as diffusion or trade, is indeed problematic. In such a challenging context, burial rituals, which are one of the most conservative elements of human culture, provide one of the best opportunities for identifying migrations in the archaeological record (see, e.g., Clarke 1975 for the identification of immigrants in Late Roman Britain).

Preliminary excavation started by LoNAP in a small trial trench at Tell Gomel (Figures 3.1 and 3.7) has brought to light superimposed burial areas in use during the Iron Age II, the Middle Bronze and the Early Bronze Ages located at the southern fringes of the site. In the Iron Age II level, four *in-situ* cremation burials have so far been excavated (Graves T 17–T 20) that seem to belong to a more widespread cemetery. They consist of approximately 50-centimetre-deep rectangular pits measuring about 2.3×1 metres, with two rounded openings on the short sides linked by a shallow channel for the ignition of the funeral pyre constructed above the pit; these would have permitted air circulation and thus make full cremation of the body possible (Figure 3.7). After the burning of the pyre and body had reached completion, the remains fell inside the pit (as shown by the heavily scorched bottom and sides) and were covered with earth. Sex could be determined only for bones from two graves (T 18 and T 20): both contained the burnt remains of two adult females.³⁰

The few ceramic grave goods recovered from these cremation burials (generally one or two vessels in each tomb) are mainly fine Neo-Assyrian wares that



3.7. Cremation burials T 17 (a) and T 18 (b) from Tell Gomel (photos by Marco Iamoni).



3.8. Selected ceramic grave goods from the Tell Gomel cremation burials (photos by Luigi Turri). (a) TGM 13.83.701, Tomb 18; (b) TGM 13.83.702, Tomb 18; (c) TGM 12.73.701, Tomb 17; (d) TGM 12.79.701, Tomb 20.

can be dated to the late eighth to seventh century BCE (Figure 3.8). Although the ceramic grave goods relate to an unmistakably Neo-Assyrian horizon of material culture, what cannot be considered typically Assyrian is the funerary ritual. So far, the extensive use of cremation has not been recorded from any Neo-Assyrian site (Strommenger 1971: 592; Mofidi-Nasrabadi 1999). Of the 628 Neo-Assyrian burials excavated at Ashur, 98.8 per cent were inhumations and only 1.2 per cent (i.e., a total of eight tombs) cremated remains buried in urns (Haller 1954; Mofidi-Nasrabadi 1999; Hauser 2012). No cremations directly above burial pits were discovered.

In the Middle Assyrian *dunnu* of Tell Sabi Abyad in the Balikh Valley, roughly one-fourth of the graves were cremations (nine out of forty; Akkermans and Smits 2008: 251; Düring, Visser and Akkermans 2015), with the burnt skeletal remains usually placed inside an urn and then interred in a pit. Only in one case was buried cremated material recorded in a shallow, square grave cut. The pit contained abundant grave goods and personal ornaments and the remains of the funeral pyre that, however, had been burnt elsewhere and not over the grave itself. Cremations in urns are known also from the Middle Assyrian site of Tell Mohammed Diyab in the Khabur Triangle (Sauvage 2005: 37–46), but nowhere do we have Middle Assyrian pit cremation burials where the funeral pyre was burnt above the pit itself.

To date, *in-situ* cremation burials in pits that closely resemble those found at Tell Gomel are known only from two sites: Tell Sheikh Hamad on the Lower Khabur, where fifteen *in-situ* cremation burials were identified in the Neo-Assyrian residences from levels dating to the late ninth to mid-sixth century BCE (Kreppner 2008), and Ziyaret Tepe on the Turkish Tigris, where five late eighth to seventh century BCE cremation graves of the same type were found in the main courtyard of the probable palace of the local Neo-Assyrian governor (Matney et al. 2002; Wicke 2013). Grave shape and structure and the evidence of funerary ritual from the Sheikh Hamad and Ziyaret burials are identical to those documented at Gomel. The only significant difference is that the grave goods found in the few Gomel cremation burials excavated so far appear to be more modest and do not include luxury items such as the metal and ivory objects documented in the Ziyaret Tepe graves (Matney et al. 2002: 55–6) and also present in some of the Sheikh Hamad cremations (those in Courtyard Z and outdoor area IZ: Kreppner 2008: 266).

During the Iron Age II, cremation was widespread in western Syria³¹ and Anatolia³² but, with the exception of Sheikh Hamad and Ziyaret, does not include cremation directly above the grave cut. Research at Tell Gomel is still in its early stages, and an extensive excavation of the Neo-Assyrian period burial area is needed in order to gather more evidence and understand general cremation practices. Caution is therefore necessary in attempting to

interpret these finds. The Ziyaret Tepe funerary evidence has been ascribed to the members of a local eastern Anatolian elite appointed as local governors by the Assyrians and – although they lived in a Neo-Assyrian-style palace displaying the usual paraphernalia of the Assyrian imperial power – retained their traditional burial custom of *in-situ* cremation (Wicke 2013: 245–6).

Tell Gomel, however, is a Neo-Assyrian site located in the middle of Navkur in the very core of Assyria, about 40 kilometres northwest of Nineveh and 25 kilometres from Khorsabad, and is therefore a site that in the eighth to seventh centuries BCE was at the heart of the Assyrian political, socioeconomic and cultural sphere. The use of a funerary practice completely alien to Assyrian traditions might perhaps be tentatively explained as a possible reflection in the archaeological record of the presence in the region of the mass immigration of deportees from conquered lands. The pit cremation graves excavated at Tell Gomel might be the burial places of deportees settled in the central region of Assyria by the late Assyrian kings.³³ However, the emergence of earlier Hurrian traditions from the local northern Mesopotamian cultural substratum and their survival at Tell Gomel in the Iron Age beneath an Assyrian veneer cannot be ruled out. The Middle Assyrian cremations known so far are mostly located in the northeastern region of the Assyrian Empire (Düring, Visser, and Akkermans 2015). It is impossible at the moment to propose a definitive solution to such a difficult problem. However, the future enlargement of the excavation at the site and the extension of the currently ongoing analyses of stable strontium isotopes ($^{87}\text{Sr}/^{86}\text{Sr}$) preserved in human tooth enamel from the Gomel cremation burials to investigate patterns of residential mobility within the area of investigation – and their change through time – might help to shed more light on this extremely interesting issue (Bentley 2006; Tafuri et al. 2006; di Lernia and Tafuri 2013).

CONCLUSIONS

The first results of the landscape archaeology projects at present under way in the core region of Assyria suggest that in the Middle Assyrian and Neo-Assyrian periods a planned and engineered landscape was imposed on the heart of the empire. New capital cities and provincial centres were created or previous towns expanded. The population that settled in these cities and in their surrounding areas grew artificially through forced migration and the arrival of deportees from the military campaigns conducted especially by the eighth and seventh century BCE rulers and was distributed throughout a network of scattered rural sites. Agricultural production was intensified through the infilling of the already existing settlement pattern and the colonisation of marginal, previously unsettled zones, such as the interfluvial areas between the rivers Gomel and Al-Khazir and their minor wadis.

The radical transformation of Assyria's natural drainage network was effected by the construction of massive irrigation networks in the Nineveh but also in the Nimrud (Jones 1855; Oates 1968: 46–7; Davey 1985), Erbil (Safar 1946; 1947) and Qasr Shemamok hinterlands (Ur et al. 2013, 105–6, figs. 11, 13), and brought about a deep transformation of the region's economic foundation on a considerable scale. This must have markedly influenced the Assyrian cereal staple crop economy, and the use of canals and rivers for transport (Morandi Bonacossi 2014; *in press*) had certainly great potential for moving large quantities of cereals across the Assyrian heartland and for changing the very nature of its staple economy. This newly created landscape was commemorated through monumental and symbolically charged sculptural programmes based on imposing rock monuments and celebratory inscriptions found in the Nineveh, Nimrud (Layard 1849: 80–1; Bagg 2000a: text no. 49) and Erbil heartlands (Safar 1946; 1947). As was made clear in this chapter, most of these commemorative monuments were related to hydraulic works and celebrated the remarkable transformation of the landscape that was achieved especially by the Neo-Assyrian rulers through the creation of these new waterscapes.

Much remains to be done to reconstruct the overall picture of settlement and landscape transformation in the Assyrian core during the Middle Assyrian and Neo-Assyrian periods, and future research should be first aimed at the gathering of settlement data. Field research, however, should not only concentrate on surveys, but also try to bring into focus through extensive archaeological excavation, based on strongly interdisciplinary approaches, the character and organisation of some of the hundreds of small Neo-Assyrian villages and hamlets scattered in the countryside around Nineveh, Dur-Sharrukin, Erbil and other main centres. Only an integrated approach to fieldwork will succeed in creating a new perspective not completely centred on the excavation of principal urban centres and their monumental architecture and face the challenge of understanding the contribution made to building the Assyrian Empire by nonstate agency and nonelite, rural and peripheral actors.

ACKNOWLEDGEMENTS

LoNAP owes a great debt of gratitude to the Directorate General of Antiquities and the Dohuk Directorate of Antiquities of the Kurdish Regional Government and the State Board of Antiquities and Heritage in Baghdad for granting a work permit and for the constant support given to our project. I am greatly indebted to Jason Ur (Harvard University) for critical reading and making available numerous satellite and aerial photographs and topographic maps of the region, and Tim Matney (University of Akron), Dirk Wicke (University of Mainz) and John McGinnis (University of Cambridge) for useful information

on the Ziyaret Tepe cremation burials and unpublished photographs. Many valuable comments and suggestions were provided by Tesse Stek and Bleda Düring (both of the University of Leiden), to whom I am very grateful also for having organised the stimulating Leiden symposium on the Archaeology of Empires.

NOTES

- 1 Bachmann 1927; Jacobsen and Lloyd 1935; Safar 1946; 1947; Oates 1968; Simonet 1977; Reade 1978; Davey 1985; Ergenzinger et al. 1988; Ergenzinger and Kühne 1991; Dittmann 1995; Morandi Bonacossi 1996: 95–101; Bagg 2000a; Geyer and Monchambert 2003: 199–217; Ur 2005; Mühl 2013: 66–70; Ur et al. 2013: 105–6; Morandi Bonacossi and Iamoni 2015; Morandi Bonacossi in press.
- 2 Kessler 1980; 1997; Wilkinson et al. 2005: 32–7; Altaweel 2008; Danzig in press.
- 3 See Pedde 2012 for a recent outline of Assyrian urbanism and Curtis and Reade 1995 and the essays in Aruz, Graff and Rakic 2014 for an overview of Assyrian court art and crafts.
- 4 As the Assyrian core territories of the Middle Tigris Valley around the old capital city are referred to in contemporary royal inscriptions.
- 5 Significant in this respect is the fact that Old Assyrian settlement in the region seems to have been rather weak and concentrated in the major centres of Ashur, Kar-Tukulti-Ninurta and Tell Akrah in the Makhmur Plain (Mühl 2013: 38–9, 152–4, taf. 12; 2015: 55).
- 6 CORONA image analysis suggests a parallel northward shift of the communication routes (hollow ways) in the region between the Lower and the Upper Zab, especially in the Makhmur Plain (Mühl 2013: 55–8, taf. 10).
- 7 On the establishment of the new Assyrian political capitals and their scale and impact on the local economic structure, see also Novák 1999; 2005; Wilkinson et al. 2005: 26–7; Pedde 2012; Harmanşah 2013: 81–93; Schneider and Adalı 2014; Ur 2017.
- 8 The reconstruction of the ancient surface area of Arbela in the Neo-Assyrian period is still hypothetical because the recent urban growth of modern Erbil has largely obscured the ancient city. The dating of the possible massive fortification wall with an outer ditch of the lower city detected from early maps and satellite and aerial photographs to the Neo-Assyrian period has not yet been confirmed by excavation.
- 9 Deportees could own private property (land, slaves, silver), were creditors and debtors, engaged in trade and business transactions and had the right to witness contracts and suits (Oded 1979: 87–8).
- 10 An imposing canal system longer than 200 kilometres branching out on either side of the Khabur was detected in the 1980s (Ergenzinger et al. 1988; Ergenzinger and Kühne 1991; Morandi Bonacossi 1996: 95–101, 183–90; Kühne 2012). The dating of one of these regional irrigation canals, i.e., that flowing to Dur-Katlimmu parallel to the Khabur's eastern bank, to the thirteenth century BCE postulated by Kühne is very problematic (Ergenzinger and Kühne 1991: 176–86; Kühne 2010: 116 and fig. 2; Kühne 2012). Kühne's main argument relies on the fact that in this phase of the Middle Assyrian period the entire Lower Khabur Valley was part of a hierarchically organised administrative system centred on Dur-Katlimmu. A further piece of evidence in support of the early dating of the eastern Khabur canal is provided by the discovery at Dur-Katlimmu of a town canal dated to the ninth century BCE, which went out of use in the first half of the eighth century (Pucci 2010; Kühne 2012). However, the limited number of Middle Assyrian sites known in the valley (only nine) and the fact that these were spaced out at significant distances from each other suggest that a regional irrigation system was not necessary in this period. Furthermore, the excavation and maintenance of a 150-kilometre-long canal ending at Dur-Katlimmu would have required the deployment of a massive workforce that would not have been available from the four major Middle Assyrian sites of the region and the few villages around

them (Morandi Bonacossi 1996: 100–1). On the other hand, in the following Neo-Assyrian period the two basic requirements for the construction of a massive regional canal network were fulfilled: the political and administrative unity of the region crossed by the canals and the need of an irrigation system to sustain the local population growth that in the eighth and seventh centuries BCE entered a phase of dramatic development (the aggregate site area and the number of occupied sites show a nearly 400 per cent increase in the Neo-Assyrian epoch; Morandi Bonacossi 1996: 100–1, 169–82, fig. 33). Although it is unlikely that the eastern Khabur canal down to Dur-Katlimmu dates to the Middle Assyrian period, it cannot however be excluded that canals were locally derived from the river already in this period, as a Middle Assyrian letter from Tell Sheikh Hamad (DeZ 3293) dating to the reign of Tukulti-Ninurta I and referring to a town canal or moat of Dur-Katlimmu seems to suggest (Cancik-Kirschbaum 1996: 129–39). The word used to define the canal is *palgu*, which according to Bagg (2000a: 88) refers to a small and not a regional canal. The Dur-Katlimmu ninth century BCE town canal excavated by Kühne (2012; also Pucci 2010) may be regarded as a further example of local irrigation. An additional mention of canal building in the Khabur Valley is found on the cylinder of Bel-eresh (Grayson 1991: 126–8), *shangu*-priest of Shadikanni (Tell Ajaja) during the reigns of Ashur-abi II (1013–972 BCE) and Ashru-resha-ishi II (972–967 BCE). In the text, Bel-eresh reports on the restoration of an *atappu* canal, i.e., a navigable regional canal, which had been built before his repair work. In sum, even though archaeological and textual evidence of the construction of local irrigation canals exists for the Middle and early Neo-Assyrian periods, up to now there is no conclusive proof of the excavation of a regional irrigation system along the eastern Khabur bank as early as the Middle Assyrian period. The present evidence, on the contrary, suggests that in the Middle Assyrian epoch the central state had the need and means to invest only in the improvement of the hydraulic infrastructure of its core region along the Middle Tigris. The later regional network of canals along the Khabur was a creation of the Neo-Assyrian enhancement policy of the imperial staple economy system in Assyria proper and its transportation network of commodities (Morandi Bonacossi 2014; in press).

- 11 This road system had some informal antecedents in the Middle Assyrian period, such as the itinerary connecting Ashur to Dur-Katlimmu through the Wadi 'Ajij steppe and the possible road station of Tell Umm 'Aqrebe (Kühne 2011: 145).
- 12 Assyrian boats were of various types, ranging from flat-bottomed coracles, which are known as *guffa* in modern Iraq and for which the Akkadian word *quppu* has been cited as a forerunner (Fales 1995: 211), to rafts made of a frame of poplar beams and branches of other trees, which was kept stable and afloat by multiple inflated skins of sheep or goats tied underneath. These rafts were still in use in the mid-nineteenth century under the name of *kelek* and journeyed from Mosul to Baghdad (Fales 1995: 212–13; for representations of both boat types in the Assyrian reliefs, see Fales 1993: figs. 6–7). A 12.5 metre long *nuku-bu* boat, presumably flat-bottomed, was used on the Middle Euphrates to navigate the canal built by the overlord of Suhu and Mari, Shamash-resu-usur, in the mid-eighth century BCE (Fales 2008: 182).
- 13 See the rock reliefs of Tiglath-pileser I at the source of the Tigris and at the Nahr Al-Kalb (Weissbach 1922; Harmanşah 2007).
- 14 The relevant field projects are the Eastern Habur Archaeological Survey (EHAS) conducted by P. Pfälzner (University of Tübingen); the Land of Nineveh Archaeological Project (LoNAP; University of Udine; Morandi Bonacossi 2012–2013; 2014; 2016; Morandi Bonacossi and Iamoni 2015); the Upper Greater Zab Archaeological Reconnaissance (UGZAR) directed by R. Koliński (University of Poznań, www.pasthorizonspr.com/index.php/archives/06/2014/new-archaeology-survey-maps-iraqi-kurdistan); and the Erbil Plain Archaeological Survey (EPAS) led by J. Ur (Harvard University; Ur et al. 2013; Ur and Osborne 2016). For other new survey and excavation projects in Iraqi Kurdistan, see Kopanias, Macginnis and Ur 2015.
- 15 After two field campaigns conducted in 2012 and 2013, the crisis triggered by the conquest of Mosul by the so-called Islamic State in June 2014 compromised the 2014 field season.

- A large part of the survey and study work that could not be accomplished in 2014, however, was made up during a two-month field season between January and March 2015.
- 16 A similar development has been documented in the North Jazira Survey (Wilkinson and Tucker 1995: 50–4, figs. 37–9). For an overall analysis of settlement pattern development in the Syrian Jazira during the Middle Bronze Age, see Koliński 2014; 2015.
 - 17 Similar contemporary graves with comparable elite-related inventories are known from several northern Mesopotamian sites, such as Tell Mohammed Diyab (Bachelot 1992), Tell Barri (Pecorella 1997: 32–42, 1999a: 46–54, 1999b: 19, 22, Valentini 2003) and Tell Arbid (Koliński 2011).
 - 18 However, among the ninety-five Mitanni sites recorded, at thirty-seven only one or two diagnostic sherds have been found, so their attribution to this period remains weak.
 - 19 For a recent overview of the settlement patterns during the Mitanni period recorded by archaeological surveys in the Syrian Jazira, see Koliński 2014; 2015.
 - 20 This growth in the number of occupied Neo-Assyrian sites is paralleled by the results of numerous surveys conducted in the northern and western parts of the Assyrian heartland (Cizre–Silopi, North Jazira Project, Hamoukar, Wadi Ajij, Lower Khabur, Jebel Abd el-Aziz, Tell Beydar, Wadi Amar, Balikh, Tabqa, Karkemish and Jabbul; summarised in Morandi Bonacossi 2000 and Wilkinson et al. 2005: fig. 9).
 - 21 According to Reade and Anderson (2013: 75–6) and Fales and Del Fabbro (2014), Tell Gomel was probably Assyrian Gammagara, mentioned in the Jerwan B Inscription of Sennacherib (Jacobsen and Lloyd 1935: 20–1).
 - 22 Many open questions remain, for example with respect to the third stage of the system, which appears to be to some extent an artificial creation of modern scholarship (Oates 1968; Reade 1978; Bagg 2000a) and consists of various stretches of canal, not necessarily all interconnected (Morandi Bonacossi in press), in the areas of Maltai, Faideh, Bandawai and Tell Uskof (summarised in Ur 2005). These canals have always been attributed to Sennacherib, even though an earlier date for some of them (at least the Maltai and Faideh canals and rock reliefs) to the reign of his father Sargon cannot be excluded on the basis of epigraphic and iconographic evidence, and may well be more plausible (see Morandi Bonacossi 2012–2013: 195–6 and especially Morandi Bonacossi in press).
 - 23 As is indicated by the discovery of offtake canals derived from the main irrigation system (Morandi Bonacossi and Iamoni 2015; Morandi Bonacossi in press).
 - 24 Winter interprets the female deity as a syncretistic union of Mulissu, consort of Ashur, Ninlil, consort of Enlil, and Ishtar (2010: 171).
 - 25 Andrae recognised the butt of an earlier spear at the left margin of the panel, outside the frame that surrounds the horseman. He interpreted this feature as the remnant of an earlier relief depicting a rider, which was carved in the centre of the original Assyrian relief. Andrae concluded that a second rider probably carved in the Parthian or Sasanian period had replaced an original Assyrian horseman.
 - 26 The probable identification of the Gaugamela battlefield as the area around Tell Gomel, located only about 20 kilometres to the south of Khinis, is briefly reviewed in Morandi Bonacossi and Iamoni 2015 (with previous literature). For a different hypothesis, however, see Zouboulakis 2016.
 - 27 For the use of the rider iconography for official victory memorials represented on Hellenistic coins, see Reade and Anderson 2013: 111, fig. 60.
 - 28 For a discussion of the possible candidates for the recarving of the first rider, see Reade and Anderson 2013: 110–17.
 - 29 For a similar case, see the Egyptian and Assyrian rock reliefs at the Nahr Al-Kalb (Weissbach 1922).
 - 30 Most of the individuals recovered from the contemporary and comparable *in-situ* cremation burials excavated at the Neo-Assyrian site of Tell Sheikh Hamad (discussed later in this chapter) also contain remains of female individuals and children (Kreppner 2008: 266 and

- table 1). No anthropological analysis of the bone remains from the Ziyaret Tepe cremations (discussed later in this chapter) has been published so far.
- 31 See, e.g., the cemeteries at Yunus-Tepe (Woolley 1939–1940: 11–37), Deve-Hüyük I (Moorey 1980), Tell Shiukh Fawqani (Al-Bahloul, Barro and d’Alfonso 2005: 997–1048; Le Goff 2005: 21–7; Tenu and Bachelot 2005: 11–14) and Hama (Riis 1948). For cremation in the Iron Age Levant, see also Bienkowski 1982.
- 32 For an overview, see Wicke 2013: 245.
- 33 Following the same path of ethnic explanation, an alternative hypothesis could be that cremation was used at Tell Gomel for the burial of foreign women (the Gomel and most of the Sheikh Hamad graves are of female individuals or children) who had married Assyrians and wanted to be buried according to their traditional customs (see, for example, Seeher’s analogous interpretation of the four cremation burials found together with seventy-two inhumations at the Anatolian early Middle Bronze Age site of Demircihöyük (Seeher 1993: 225).

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