

Archaeological geophysics in the Shahrizor plain (Iraqi Kurdistan)

Simone Mühl^a and Jörg W. E. Fassbinder^{a, b}

KEY-WORDS: magnetic prospection, Chalcolithic, Bronze Age, Shahrizor plain, Kurdistan

ARCHAEOLOGICAL RESEARCH BEFORE THE FIRST GULF WAR

An expedition to survey and map some test sites for an archaeological research project (DFG MU3354/1-1) in Kurdistan was undertaken by the Directorate of Antiquities in Sulaymaniyah province in cooperation with the Ludwig-Maximilians University Munich.

The Shahrizor plain is a valley (covering roughly 1300 km²) in the piedmont of the Zagros Mountains (Fig. 1) adjacent to the Iranian border. It extends between the cities of Arbat and Halabjah southeast of the metropolis Sulaymaniyah (1.5 million inhabitants). For decades the wider region was distressed by the war between Iran and Iraq, as well as by internal political strife within Iraq. Little archaeological research was carried out in the region apart from some archaeological salvage excavations during the construction of the Durband-i-Khan dam in the late 1950s and early 1960s

^a Geophysics Department of Earth and Environmental Sciences, Ludwig-Maximilians Universität München, Munich, Germany

^b Bavarian State Department for Monuments and Sites (BLfD), Ref. ZII Archaeological Prospection, Munich, Germany

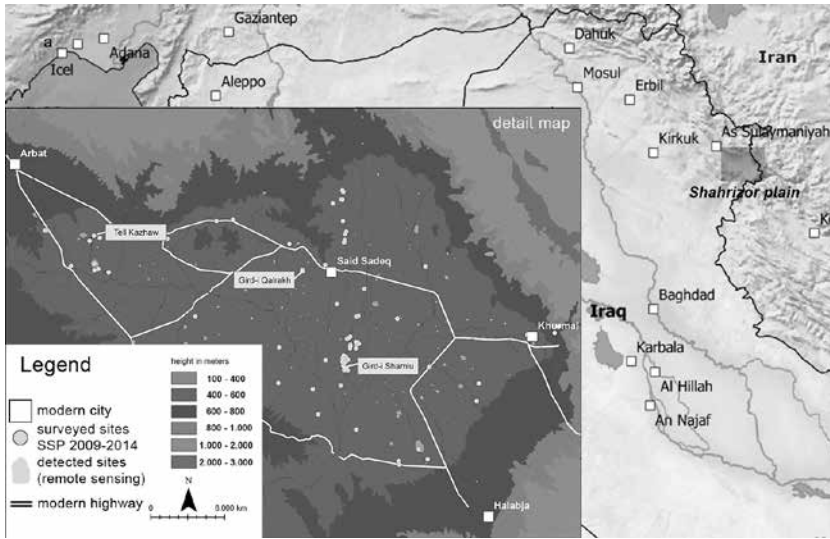


Fig. 1. Map of Iraq and the Shahrizor plain marking sites subjected to magnetic prospection

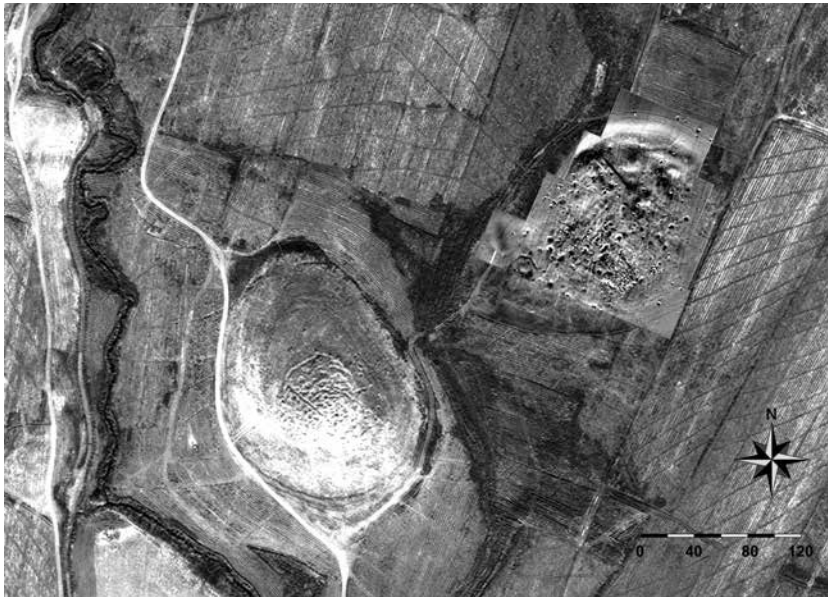


Fig. 2. Gird-i Shamlu: aerial image of the site cluster and magnetic map of the low mound of Shamlu. Caesium-magnetometer Scintrex, Smartmag SM4G-Special, dynamics ± 10 nT in 256 grey-scales, sampling rate interpolated to 25 x 25 cm, 40 m grid

(Directorate General of Antiquities Baghdad 1960; 1961). Unfortunately, most of the excavation reports from this period have been lost, resulting in limited knowledge of the region's antiquity.

The region appears for the first time in historical cuneiform sources in the 3rd millennium BC; it is referred to as the kingdom of Simurru, contested in several wars between Mesopotamian rulers. When the kingdom reached its climax around 2100 BC, it encompassed an area that extended from the Shahrizor to the Ranya plain (Potts 1994; Frayne 2011; Mühl 2013). After a gap in the historical records, it resurfaced in the middle of the 2nd millennium BC as Zabban of the Assyrian texts dated to the 12th century BC. In the Neo-Assyrian period (1st millennium BC), the Shahrizor plain and the territories adjacent to it were incorporated into the Assyrian state as a province called Mazamua/Lullumu (Radner 2008).

RECENT RESEARCH

Its rich oil fields have allowed the region to experience an economic boom since the end of the last Gulf war. Sulaymaniyah presently counts among the fastest growing cities in the world. This poses a big challenge for local authorities, as they are occupied both with the fast developing infrastructure, which threatens heritage sites, as well as continually growing amounts of information on newly discovered archaeological sites. In 2006, archaeologists were again allowed to work in the area and in 2009 a Kurdish–German cooperation was established, setting its goals on mapping and surveying archaeological sites by analyzing aerial and satellite imagery, as well as by archaeological field survey. About 300 sites were detected, of which 80 have been investigated through intensive field survey (Mühl 2010; Altaweel *et al.* 2012); soundings were made at two tell sites (Nieuwenhuys *et al.* in press) and three sites were prospected by magnetic survey.

SURVEY RESULTS

The three mapped sites were Tell Kazhaw (approx. 1.3 ha), Gird-i Shamlu (approx. 4 ha) and Gird-i Qalrakh (approx. 15 ha) (Fig. 1). Surface pottery collections have dated the first site, Tell Kazhaw, to the 4th and mid-2nd millennium BC. The second site, known as Gird-i Shamlu, is a little later, its oldest remains being dated to the beginning of the 3rd millennium BC; remains from the 2nd millennium BC are known from Iraqi excavations carried out in 1960 (Janabi 1961). The third site, called Gird-i Qalrakh, is one of the highest settlement mounds in the Shahrizor plain. It was first settled in prehistoric times and is presumably covered by sizeable deposits from the 1st millennium BC.

Objects collected from the surfaces of Gird-i Qalrakh, Gird-i Shamlu, and Tell Kazhaw show that the ancient settlements did not undergo any major changes. However, Tell Kazhaw, where late historical remains (Islamic and Ottoman period) were concentrated northeast of the tell site itself, may be an exception in this regard.

The magnetic measurements revealed formerly unknown archaeological features at Tell Kazhaw and Gird-i Shamlu. The archaeological site of Gird-i Shamlu appears to be strongly disturbed by military construction, grenade shrapnel and iron waste. However, also with respect to the complexity of such a multi-layered settlement, it was decided to concentrate the magnetic survey on the neighboring mound, which represents the ancient settlement's early 3rd and late 2nd millennium northeastern extension



Fig. 3. Tell Kazhaw. Aerial image fused with magnetic data. Caesium-magnetometer Scintrex, Smartmag SM4G-Special, dynamics ± 10 nT in 256 greyscales, sampling rate interpolated to 25 x 25 cm, 40 m grid

(Fig. 2). This part of the site rises 3–4 m above the surrounding terrain and covers an area of approx. 120 m by 100 m, but in order to gain as much information as possible, the survey area was enlarged to approx. 160 m by 160 m. The site lies on the bank of a streamlet, which has created a swampland to the west and between the two settlements. This process was supported by the nearby Darband-i Khan Dam Lake, as it has caused a dramatic rise of the ground water table. The magnetic data reveals that this mound was densely settled. Occupation seems to have been especially high in the southern part of the surveyed area, as it is dominated by small-scale linear features that could indicate small huts or wooden structures. The investigations of the northern part of the mound summit revealed ground plans of large houses that probably rested upon limestone foundations. Traces of riverbeds and streamlets were found in the neighborhood. This supports the thesis that such ancient settlements were usually established near springs and headwaters. Indications for late 3rd millennium BC irrigation in a more humid local environment were already discovered in the course of environmental investigations in the Shahrizor plain (Marsh and Altaweel in press).

The other test site inspected was Tell Kazhaw. Except for the extremely steep slopes, almost the entire area of the mound including its western extension were investigated (Fig. 3). The mound was surrounded concentrically by settlement structures and by a circular ditch, which measures about 120 m in diameter. Further settlement remains and traces of monumental architecture were discovered in an elevated area in the northern part of the tell.

The remains of the third site, Gird-i Qalrakh, are still visible south of the site. Unfortunately, no structures could be observed in the investigated area between the mound and the city wall. This area may have been used for livestock or as a refuge space for the population from the neighboring countryside during times of political instability. More investigations are needed here, covering a larger surface.

REFERENCES

- Altaweel, M.R., Marsh, A., Mühl, S., Nieuwenhuysse, O., Radner, K., Rasheed, K. and Saber, A.S. 2012. New Investigations in the Environment, History, and Archaeology of the Iraqi Hilly Flanks: Shahrizor Survey Project 2009-2011. *Iraq* 74: 1-35.
- Directorate General of Antiquities Baghdad. 1960. Excavations of the Directorate General of Antiquities in Shahrizor (Arabic). *Sumer* 16: 147-149.
- Directorate General of Antiquities Baghdad. 1961. Excavations of the Directorate General of Antiquities in Shahrizor (Arabic). *Sumer* 17: 221-222.
- Frayne, D.R. 2009-2011. Simurrum. In M.P. Streck (ed.), *Reallexikon der Assyriologie und Vorderasiatischen Archäologie* 12, 508-511.
- Janabi, K. 1961. The Excavations at Tell Shamlu in Shahrizur (in Arabic). *Sumer* 17: 174-193.
- Marsh, A. and Altaweel, M.R. 2015. The Search for Hidden Landscapes in the Shahrizor: Holocene Land Use and Climate in Northeastern Iraqi Kurdistan. In D. Lawrence, M.R. Altaweel, G. Philip (eds), *New Agendas in Remote Sensing and Landscape Archaeology in the Near East (Oriental Institute Publications)*, Chicago, In press.
- Mühl, S. 2010. Durchs wilde Kurdistan. Neue Forschungen in der Provinz Sulaimaniya, Irak. *Agora* 1: 48-53.
- Mühl, S. 2013. Siedlungsgeschichte im mittleren Osttigrisgebiet vom Neolithikum bis in die neuassyrische Zeit. *Abhandlungen der Deutschen Orient-Gesellschaft* 28. Wiesbaden.
- Nieuwenhuysse, O.P., Odaka, T., Kaneda, A., Mühl, S., Rasheed, K. and Altaweel, M.R. 2015. Revisiting Tell Begum. A prehistoric site in the Shahizor Valley, Iraqi Kurdistan. *Iraq* 76, In press.
- Potts, T.F. 1994 Mesopotamia and the East. An Archaeological and Historical Study of Foreign Relations ca. 3400-2000 B.C. *Oxford University Committee for Archaeology* 37. Cambridge.
- Radner, K. 2006-2008. Provinz. C. Assyrien. In M.P. Streck (ed.), *Reallexikon der Assyriologie und Vorderasiatischen Archäologie* 11, 42-68.