HAMOUKAR

Clemens Reichel

The heat was becoming oppressive. No one, however, paid any attention. The strange sight unfolding in the middle of the field close to the village had raised the curiosity of some two dozen villagers that now encircled our little group. It became harder and harder to keep them way from our area of interest — an empty 10 × 10 meter square in the middle of the field, which we had laid out and swept as well as we could of all remnants of modern-day civilization (fig. 1). Along two opposing sides of the square were ropes with markings indicating a set of fixed distances. "Connecting" the first marking on each of these ropes was a third rope running perpendicular across the square. A third rope with identical markings was lying perpendicular to the other two across the square. The main attention, however, had shifted to a low rise to the south of this square behind which a woman with short blond hair had just emerged. In her hands she carried a roughly L-shaped device with wires and buttons emerging from it. This was too much for one of the older villagers. "*mafee dhahab hon*" — there is no gold here — he yelled at us, betraying an astounding amount of empirical knowledge on this issue. When I explained to him that it wasn't gold but ancient mudbrick walls that we were looking for he walked away, reaffirmed in his previously uttered belief that archaeologists are definitely *majnoon* — crazy. Ann, the woman who had just emerged, was undeterred. "Don't worry — they'll all leave soon. Even the cows get bored with watching us after a while." An hour later her assessment proved to be correct — how much fun can it be to watch a woman with a strange machine, who keeps on walking zigzags along ropes in the blazing heat of the day?

Fig. 1. Collecting data with the magnetometer at Hamoukar's lower town

It was early September. We had arrived at Hamoukar a week earlier, fixed the broken water pipes in our dig house, and overcome some of the inevitable initial adversities often encountered during camp setup. This was the third season since Salam al-Kuntar, my Syrian co-director, and I took over the directorship of Hamoukar in 2005. The field seasons of 2005 and 2006 were large and very successful, but also had left us with vast amounts of materials that we hadn't managed to process. The main objective for 2007, therefore, was to undertake a study season. Instead of excavations, we decided to try our luck with on-site geophysical work.

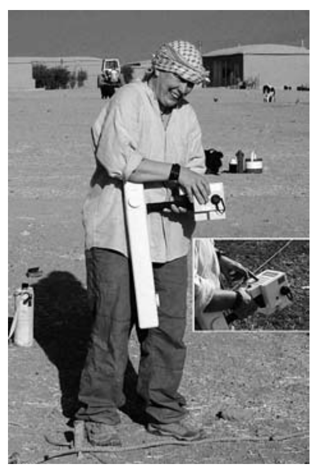

Fig. 2. Ann Donkin calibrating the magnetometer (see inset)

The principles and advantages of geophysical work have been described elsewhere in detail — in this respect readers may be referred to Scott Branting's ongoing innovative work at Kerkenes Dağ in Turkey (see *Kerkenes Dağ Project Report* in this and previous *Annual Reports*). Although excavations in the Middle East tend to be very large in comparison with projects in other areas of the world, they generally remain tiny windows into the world of an ancient settlement. The large scale of Middle Eastern sites provides a real challenge. The main mound of Hamoukar, for example, covers an area of about 100 hectares (260 acres). Mathematically speaking, if we excavated ten new 10 × 10 meter trenches every year, it would take us 500 years to excavate half the site — and this would assume impossibilities such as "finishing" a trench completely in one season and no study seasons. The main objective of such a monumental undertaking, however, merely would be the recovery of an ancient settlement's layout. Fortunately, geophysical work allows us to look below the surface without first having to remove earth by the truckloads. Among the available techniques, magnetometry is the fastest and most affordable. The only caveat with this technology is that it cannot disentangle the complexity of a multi-period site. In northern Mesopotamia it has worked best on the early Bronze Age "lower towns," which emerged during a period of vast urban expansion around the older city mound. Survey work undertaken in past decades has indicated that most of the Early Bronze Age mounds of this area indeed have a lower town. Based on the site survey undertaken in 1999 and 2000 by Jason Ur, the approximate size of Hamoukar's lower town is about 85 hectares (220 acres), hence

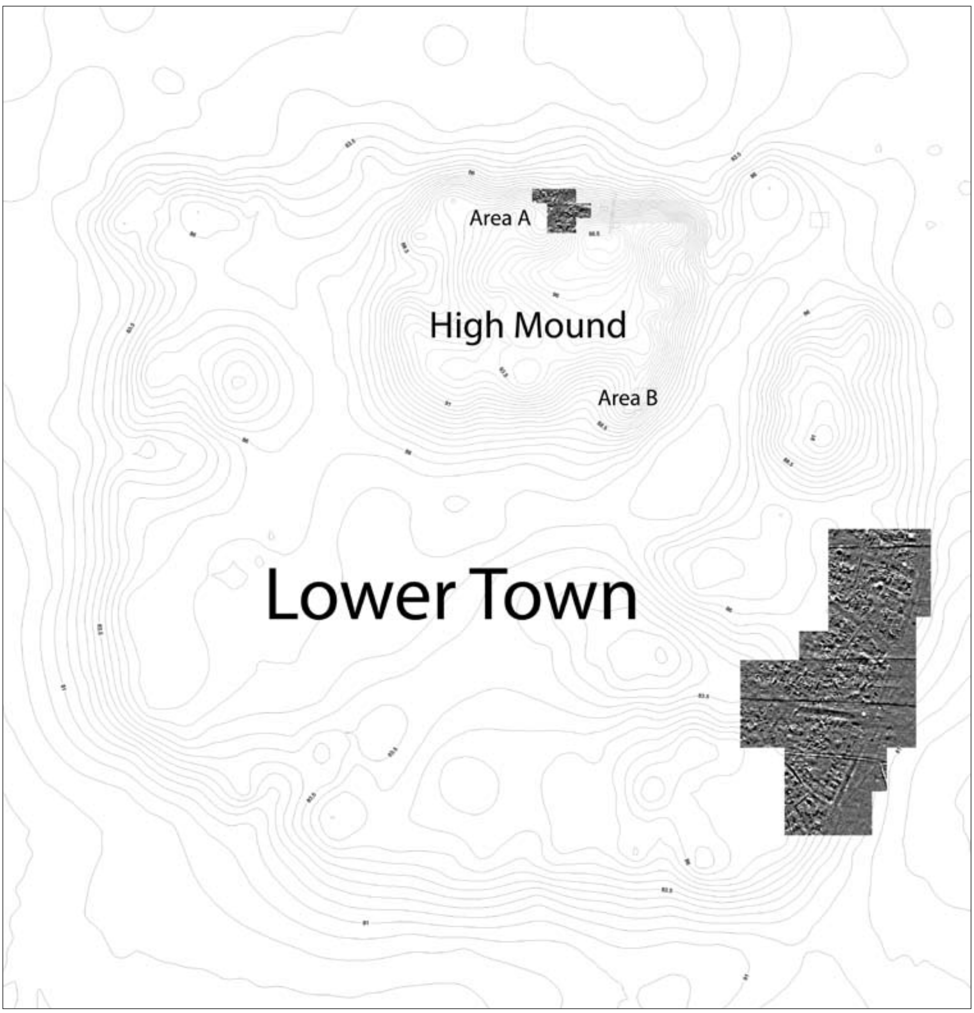

Fig. 3. Plan of main mound of Hamoukar with survey area

one of the largest of the late third-millennium B.C. cities in northern Syria. The idea of undertaking a geophysical survey on this site was immediately appealing. In March 2006 the University of Chicago's Women's Board invited me to submit a proposal for a season of geophysical work in 2007, which they generously decided to fund.

We were fortunate to be able to enlist Ann Donkin from the Department of Classical Studies, Anthropology and Archaeology at the University of Akron (Ohio) to work as our geophysical scientist (fig. 2). Having worked on sites in Turkey, Egypt, India, and the United States, Ann has an extensive background from sites in various geographical, geological, and geomorphological settings. Despite the general promise of success, we remained nervous about our prospect. Geophysical work had been undertaken on a number of sites in northern Syria and southeastern Turkey with varied amounts of success. Work at the sites of Titrish (Turkey) and Tell Chuera (Syria) produced spectacular maps, but on other sites local preconditions only allowed disappointing results. At Hamoukar we had opted for magnetometry due to its affordability and speed, though we were aware that conditions were not perfect. Magnetic disturbances could render much of our work obsolete. A major part of its lower town is covered by a modern village, hence iron is omnipresent. We therefore opted to first try our luck in the southeastern part of the lower town, which nowadays is covered with fields (fig. 3). Excavations in 2001 had revealed large, well-built houses in this area that were close to the present-day surface and that seemingly had been destroyed by force. But even here we encountered the perils of the modern-day world in the form of metal wires, soda cans, broken plowshares, and even the occasional car battery — it never ceases to amaze what people throw into their fields as fertilizers nowadays. Electric lines and telephone poles also precluded work in certain areas. For that reason I was not too optimistic when Ann, after a first day's work, downloaded the data onto her laptop and produced a first map. I squinted and looked, thought I saw something in the pattern of coarse dots, but it might just as well have been nothing. As I soon learned, however, I suffered from a close-up-view. A settlement layout cannot be understood from looking at one square. Gradually, as Ann kept coming back with more data every day, the area covered expanded and, as we kept on zooming out, a clearer picture emerged (figs. 3–4). Large building blocks, well laid out and separated by wide streets, became

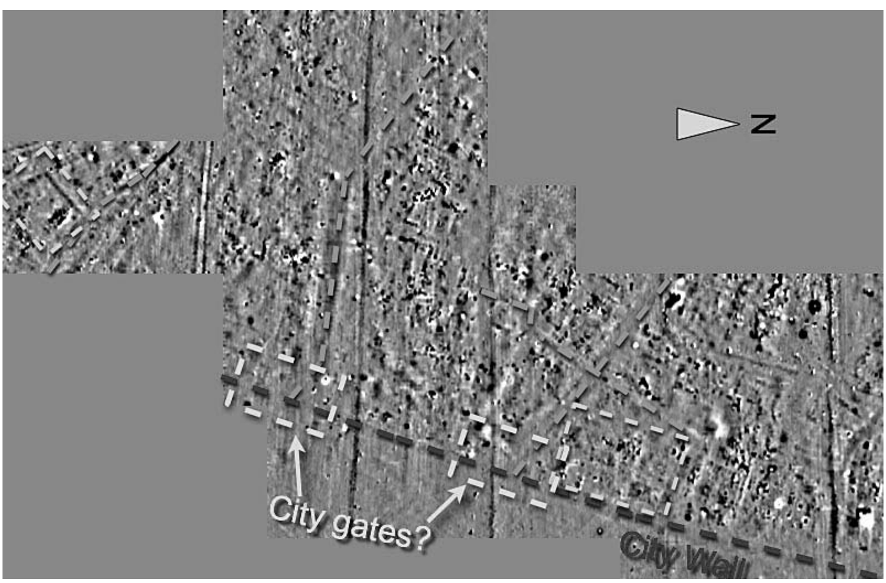

Fig. 4. Close-up of survey area map, highlighting streets, city blocks, city gates, and the city wall

discernible. A double line along the edge of the settlement indicated the presence of a city wall, possibly preceded by a rampart. The city wall itself seems to have several gates, which lined up with streets on the inside as well as hollow ways on the outside. The width of the streets themselves is noticeable — one of them appears to exceed 10 m (33 ft)! So far, our surveyors covered an area of 7 hectares of the lower town. About twice as much remains easily accessible, then the tricky part of working within the village will begin. With Syria's fast-growing population it is no surprise that this village continues to grow, but its expansion happens at a devastating cost to archaeology. Modern buildings may not destroy ancient architecture below them entirely, but they render fieldwork impossible. Those areas of the sites that currently are under agricultural cultivation are at no lesser risk, since archaeological layers are plowed out, diminishing the size of the surviving cultural deposit more and more every year. We hope that in the near future a decree by the Department of Antiquities will make it illegal to add new houses and protect the remainder of the site.

While Ann, together with her assistant Theresa Ulrich (University of Akron), continued to chase buried walls on site, the rest of us settled into the house for our study season. Pottery formed the largest backlog. Tate Paulette tackled the materials from his own work in third-millennium B.C. levels in Area C, a large public building complex investigated in 2000, 2001, and 2006. Salam, together with Khalid Abu Jayyab (Damascus University) and Ibrahim al-Alaya (Aleppo University), concentrated on the pottery from the Southern Extension, which also forms the core of her dissertation at Cambridge University. I turned my attention to the vast amounts of pottery from Area B, the burned complexes on the High Mound that had been destroyed by warfare around 3500 B.C. Lamya Khalidi (University of Nice, France) returned for her continued analysis of the obsidian tools from the Southern Extension. Kate Grossmann studied the animal bones (fig. 5). In her free time, Ann cataloged thousands of unregistered fragments of clay sealings from the 2005 and 2006 seasons. Fahd Sbahi (Aleppo University) and Theresa Ulrich, finally, took on the thankless but necessary task of describing and weighing thousands of sling bullets.

Fig. 5. Kate Grossmann's table with faunal samples

The great advantage of study seasons is that they provide time to carefully look at materials that were brought in during past seasons. You may think that you know what came in, but you only remember what you truly know. In this respect I was in for a surprise during the first few days of our season when Gil Stein, the Director of the Oriental Institute, joined us for a site visit. Having Gil out there was a great asset — his vast knowledge of Late Chalcolithic pottery, in particular the ceramic corpus from Hacınebi Tepe, his former site at the Euphrates in southeastern Turkey, greatly benefitted us. As he was opening a bag of Uruk-period potsherds he suddenly exclaimed: "Oh look — you have *tuyeres*!" *Tuyeres* are blow pipes commonly used in metal working. These pipes, as such, were perishable, having been made of reed, but their ceramic mouth pieces often survived (fig. 6). In a pile of pot sherds a *tuyere* is easily mixed up with a vessel spout. It's not only what you know — it's what you know intrinsically. Soon we noticed more and more *tuyeres* among "spouts" in our pottery. This certainly was an exciting discovery. Large obsidian manufactures in our Southern Extension, dating between 4500 and 4000 B.C., had led us to conclude that export-oriented tool production played an important factor in the formation of Hamoukar's first proto-city. The city on the main mound destroyed by warfare, however, dated to about 3500 B.C., hence significantly later. We assumed that the destruction had been caused by the expansion of the southern Mesopotamian Uruk culture in its quest to control trade routes and traded commodities in northern Syria and southern Turkey. By the mid-fourth millennium B.C., however, copper had eclipsed obsidian as a primary material for tool production. Hamoukar is on a trade route leading from southern Mesopotamia to the southern Turkish copper mines (Ergani Maden) that had been exploited early on, so by 3500 B.C. copper trade and early metallurgy could have superseded obsidian tool production at Hamoukar. With no evidence for a local metal industry, however, this explanation remains hypothetical. The discovery of *tuyeres* in our pottery assemblage provided the first tangible proof of its existence. Only days later more evidence showed up when I examined a number of items from Area B registered as "crude clay dishes," which turned out to be crucibles used for metal melting (fig. 7). Due to the proximity of the Area B architecture to the site's surface, metal objects from this area generally are poorly preserved. In a sounding into lower levels of Area B undertaken in 2005, however, we found a jar that contained three bronze disks and a piece of silver wire (fig. 8). The jar had been hidden away in a gap between two walls. Its ingredients are most likely to be explained as raw materials, hence this might have been a jeweller's kit, for which parallels are known from later contexts at sites such as Nippur and Tell Asmar. As yet, the evidence for metallurgical work at Hamoukar remains patchy and circumstantial, but we hope to address this interesting aspect of early technological development more in the near future.

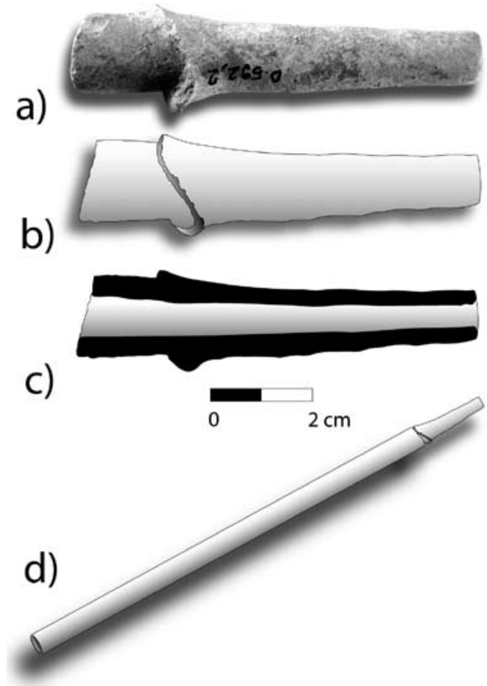

Figure 6. **Tuyere** ***(blow pipe used during metal working): a) photograph; b) drawing; c) section; d) reconstruction of a full blow pipe. Area B; date: 3500 B.C.***

Figure 7. Crucible used for metal melting. Area B; date: 3500 B.C.

More often than not a season requires scaling back on ambitious plans. In rare cases, however, results can be achieved where none had been anticipated at all. Common wisdom about magnetometry tells us that it will only work on single-period contexts. High mounds with their complex multi-layer stratigraphy do not lend themselves to this kind of work. During a site visit to Tell Chuera, a large Early Bronze Age site to the west of the Balikh, I was surprised, therefore, to see that their magnetometrist had undertaken extensive work on this site's high mound. Chuera's architecture is characterized by strong continuity in architectural layout over centuries,

Figure 8. Jeweller's kit: copper disks and silver wire. Area B; date: ca. 3800 B.C.

a phenomenon that we have not observed at Hamoukar so far. Nonetheless, the thought of "chasing" one particular large feature on Hamoukar's high mound with magnetometry started shaping up — the Late Chalcolithic city wall (fig. 9). We first noticed this wall, a 3 m wide feature, in our step trench in 1999 — one of the first pieces of evidence of urban formation processes on this site that happened independently from southern Mesopotamia and long before the conquest by the Uruk culture. If we could follow this wall all around the high mound it would give us an idea of how large the earliest city of Hamoukar really was. The distribution of fourth-millennium B.C. pottery on the site indicated a size of approximately 16 hectares, but slope wash and movements of archaeological deposits during later construction events could have distorted the picture significantly. If we could follow the city wall, however, there would be no need for approximation — not only would we know the city's exact size but it would also allow us to see if future trenches should be inside or outside of it. Ann agreed on running a few survey squares to the west of the step trench. Never has there been a better return for an afternoon's work — the line of the city wall showed up crystal clear (fig. 10). It appears to align with the northwestern edge of the high mound, suggesting that Hamoukar's mid-fourth-millennium B.C. city was nearly as large as the present-day high mound. We hope to be able to add to this plan successively over the next few years.

Figure 9. View of the Late Chalcolithic city wall on the high mound, as excavated in the 1999 step trench. Area A; date: ca. 3800 B.C.

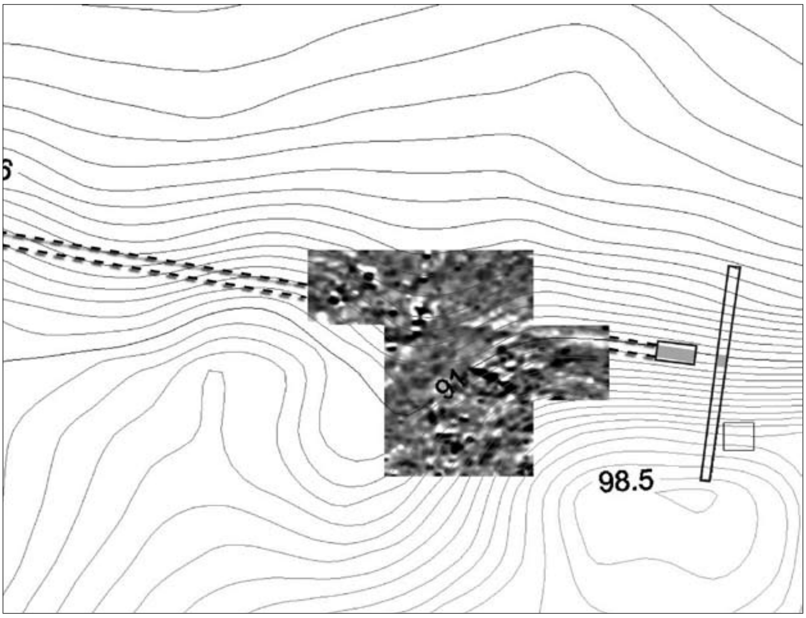

Figure 10. Magnetometric map of Late Chalcolithic city wall west of step trench on the high mound

As I am writing this we are almost ready to return to the field — how quickly a year goes by….

We are working on a bigger intermediate report, which hopefully will go to press before the end of the year. This season we will continue with magnetometrical work to follow the plan of the third-millennium B.C. city. Excavations by Kate Grossmann and Tate Paulette in these areas will provide the necessary empirical check of what the magnetometer has indicated. The main objective of this season, however, will be excavation. In the Southern Extension we plan to expose several obsidian workshops. The burnt city in Area B on the high mound will require years of detailed work to come, and we look forward to more exciting results from this area. As in previous years, none of our work would have been possible without the generous support from various institutions, first and foremost the Oriental Institute. The University of Chicago's Women's Board has a long history of supporting Oriental Institute projects at an early and critical stage, often before long-term funding through a granting agency could be sought. With our geophysical work at Hamoukar, which they so generously sponsored, I hope to have justified their faith in our project. As in previous years, numerous private donors have renewed their financial support in 2007. In this context, I would like to thank first and foremost Howard Hallengren (New York), Alan Brodie (Chicago), and Carlotta Maher (Chicago). For the 2008 season, generous donations were made by Cathy Brehm, Toni Smith, and Virginia O'Neill (all Chicago). Raising public money for fieldwork is more than difficult, so the continued support of enthusiastic individuals remains essential for our work. The Syrian Department of Antiquities, the Ministry of Culture, and the Syrian Embassy in Washington, D.C., have continued to support our work in every possible way, for which we are very grateful. Last, but by no means least, I would like to thank our wonderful Syrian colleagues who have been working with us for years so faithfully and enthusiastically. At a time when the relationship between Syria and the United States is marred on a political level by many misgivings, the Hamoukar Expedition currently can be considered one of the most successful ongoing Syrian-American joint ventures. I look forward to working together at this wonderful and unique site for many years to come.