

# THE ARCHAEOLOGICAL LANDSCAPE OF THE BALIKH VALLEY, SYRIA

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## Introduction

In previous field seasons, we first mapped landscape features and archaeological sites using aerial photographs and then we identified, described, and interpreted in the field those features that were recognizable on the photographs. This procedure resulted in a series of maps detailing the archaeological landscape comprising settlement sites, ancient “hollow way” roads, canals, miscellaneous quarries, and natural landscape features as described in earlier annual reports. Aerial photographic mapping generally proceeded ahead of the more laborious process of field checking (as illustrated on fig. 1) and in 1994 we were able to expand our database by excavating

archaeological soundings and employing exposed soil sections to provide “control” for the survey data. This added a third layer to the project methodology and enabled our earlier interpretations both to be strengthened and revised.

In 1994 the field team was increased to four with myself as team leader; Eleanor Barbanes (University of California, Berkeley), surveying, drawing, and field assistant; Fokke Gerritsen (a former student in the Department of Near Eastern Languages and Civilizations), in charge of excavating the main Sahlan-Hammam canal; and Gregory Munson (a graduate student in the Department of Near Eastern Languages and Civilizations), field assistant. As before, we received an immense amount of help from our colleagues of the Sabi Abyad field team from the Netherlands National Museum, Leiden, under the directorship of Peter M. M. G. Akkermans. Thanks must also go to the various members of the Directorate General of Antiquities and Muse-

The Western Jazira Project

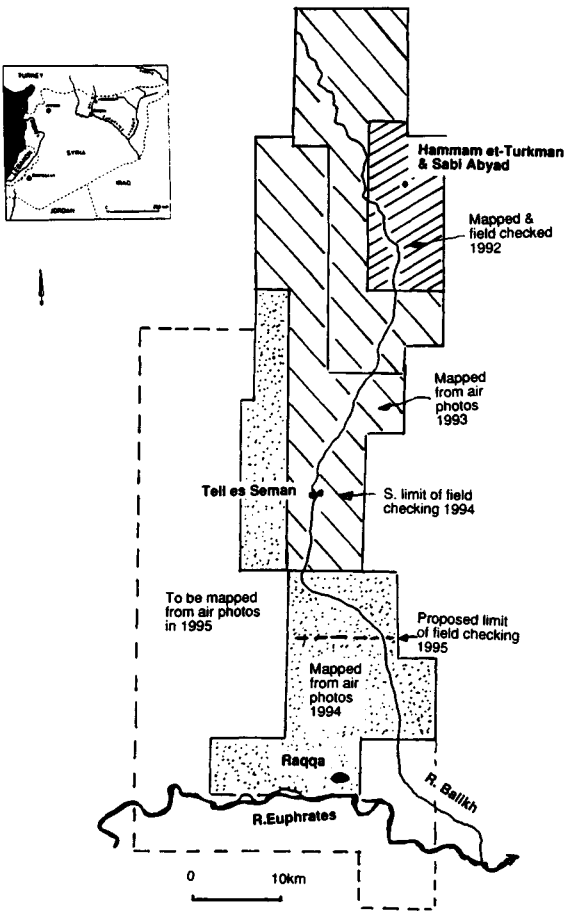


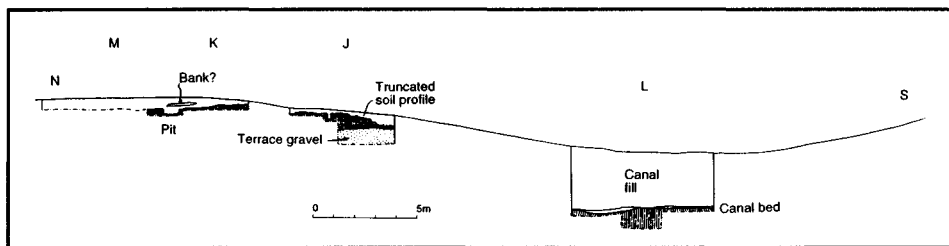
Figure 1. Map of Balikh indicating the progress of mapping

ums, Syrian Arab Republic, without whom the field season would have been impossible: Prof. Dr. Sultan Muhesen (Director General of Antiquities), Dr. Adnan Bounni (Director of Excavations), Mr. Mohammed Muslim (Aleppo Museum), Mr. Murhaf al-Khalaf (Director of the Raqqa Museum), and our representative Mr. Nauras al-Mohammed, also from the Raqqa Museum. We are again extremely grateful to the National Geographical Society for providing major funding and to the Oriental Institute for additional funding and support.

The Balikh Valley is not known for its scenic grandeur, but in earlier seasons, by getting to grips with both the subtleties and the complexity of the archaeological landscape, we are now in a position to make some general statements about how life was constrained in this essentially marginal environment astride the limits of rain-fed farming. Although small in comparison with the nearby Euphrates, the Balikh River traditionally has provided the essential lifeblood for communities dotted along its course. This lifeblood is however finite, and its modest size restricts the amount of available irrigation water that in turn limits agriculture and therefore settlement. The subject of a potential ceiling to the agricultural population therefore provided a unifying theme linking all aspects of the work undertaken in 1994.

### The Balikh River and Irrigation Potential

The Balikh River receives most of its water from the spring of 'Ain al-Arous near the Turkish border. Although possibly slightly more vigorous in the fourth millennium B.C. this was never a copious river, hence, as stated in Old Babylonian texts from Mari, its waters were often subjected to rather acrimonious dispute. Therefore our discovery in 1993 of a major canal of considerable antiquity raised hopes that we may have discovered the very channel that deprived the citizens of Tuttul (Tell Bi'a), located at the confluence of the Balikh with the Euphrates River, of essential irrigation water. However, the hopes we placed in this canal (dubbed here the Sahlan-Hammam canal) were dashed as a result of excavations at BS 214, which showed quite clearly that this dated to Hellenistic/Roman and early Byzantine times. Fokke Gerritsen's excavations (figs. 2, 3) demonstrated that the upcast bank was post-Iron Age and the channel was in use between about the third century B.C. and the sixth century A.D. The six meters wide channel, which was floored with rolled



**Figure 2. Cross-section of Sahlan-Hammam canal at BS 214 excavations**

sherds and numerous freshwater mollusks, must have conducted a vigorous flow of water. During the Islamic period following its abandonment, the canal then filled in with slope wash and archaeological debris, a point supported by the presence of Islamic occupation debris within the canal trace at two other points along its course. By comparing the flow of the Sahlan-Hammam canal with that of the twentieth century Balikh, as well as the discharge of 'Ain al-Arous and a relict Balikh channel

recorded at Tell as-Seman downstream, it could be shown that the canal must have effectively conducted most of the available water in the river.

Although such a late date did not conform with our initial expectations, it does help explain the considerable increase in settlement that took place in the middle Balikh Valley during the Hellenistic period. This settlement growth was recorded by our survey of smaller sites that formed an integral part of the landscape survey. In general it appears that the original survey by Peter Akkermans provided an accurate picture of the Bronze Age settlement pattern, therefore we found virtually no new sites of this date. However, for the Neolithic and Chalcolithic periods, as well as for the Iron Age and later, the frequently smaller sites were often difficult to recognize and were therefore underrepresented in the original survey record. Among such new discoveries were six Halaf sites as well as a pre-pottery Neolithic site (BS 397). The latter, located upon low bluffs of Pleistocene period sediments within the Balikh flood plain north of Tell es-Seman, includes very early pre-pottery Neolithic (PPNB) flint tools that could place the site among the earlier Neolithic sites found thus far in the Balikh Valley.

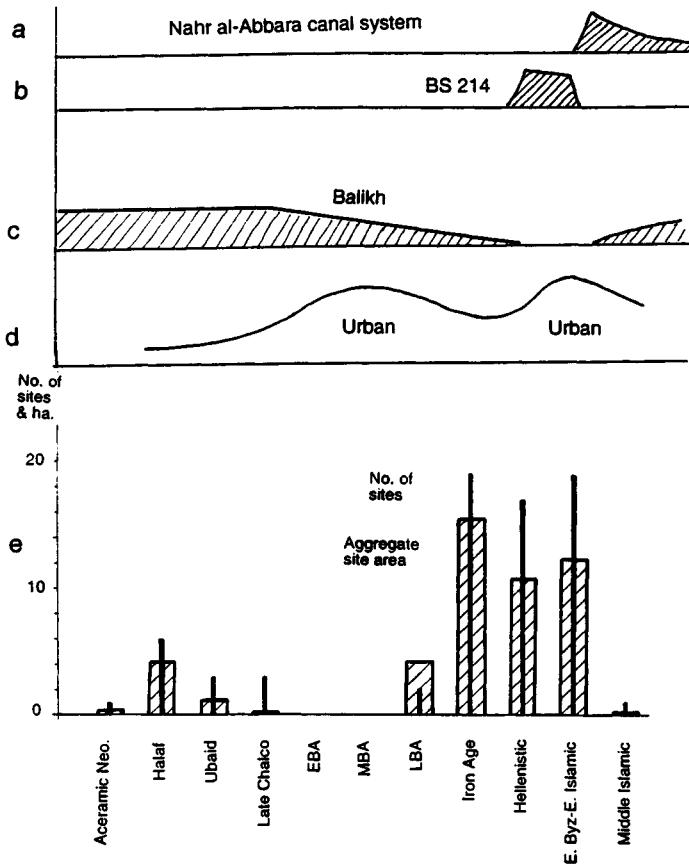
The significant number of newly discovered Iron Age and Hellenistic sites reflects both the low “visibility” of such sites as well as a general lack of knowledge of the pottery of these periods. However, by building upon our knowledge of later ceramics derived from the northern Jazira Survey in Iraq, the Kurban Höyük Project, and work at Tell es-Sweyhat, our “survey enhancement” has managed to refine the pottery sequence for the later periods thus improving site recognition. From figure 4 it is therefore evident that the pattern of newly discovered sites complements that of the “urban” Bronze Age settlement. This suggests that following the decline of Bronze Age nuclear centers in the region, there was a gradual dispersal of population into small rural settlements. Interestingly, although the Iron Age sites either grew up on the fringe—dry-farmed steppe or alongside the river—the Hellenistic villages and farmsteads developed away from the river on land that required irrigation to be productive, but which had not hitherto received irrigation water. Such land, situated within the central Balikh Valley to the south of the zone of feasible rain-fed cultivation, may therefore have received its irrigation water from the Sahlan-Hammam canal. That this canal was capable of supporting such a large area is supported by the potential cultivable area calculated from the discharge of this canal,

which was between two thousand and seven thousand hectares. Such an area would have formed a strip of land at minimum between one kilometer wide and twenty kilometers in length alongside the Balikh River.

Because similar limits can be calculated from the flow of the ‘Ain al-Arous spring, it seems that there was an effective ceiling to the area that could be irrigated either by the Balikh



**Figure 3. The canal excavations**



**Figure 4. Rural settlement in the Balikh Valley in relation to water supply**

River or by any canal that received water from it. Because, in turn, this land could only sustain a certain number of people, there would therefore have also been a ceiling to ancient population of the valley. Preliminary calculations suggest that in the irrigated zone at least, this would have been between two thousand and seven thousand people. Although pre-Hellenistic canal traces are elusive, the discovery of Bronze Age irrigation canals near Tell es-Seman demonstrates that irrigation was also practiced at this time. However, these were very small features and in the absence of a large canal of this date I would infer that the populace was probably supported by local short canals each of which led water from the river to the fields of the individual settlement. By contrast, by the Hellenistic period, a significant length of the valley may have received its water from a single long trunk canal. Such was the capacity of this canal in fact that it appears to have been capable of capturing most of the Balikh flow so that it isolated the former Balikh channel which now remains as a relict channel along the west side of the valley.

The above preliminary sketch now provides a firm basis for our 1995 field season during which we will attempt to flesh out the settlement pattern as well as to test the veracity of the framework of the water supply system outlined above.