

## AMUQ VALLEY REGIONAL PROJECT

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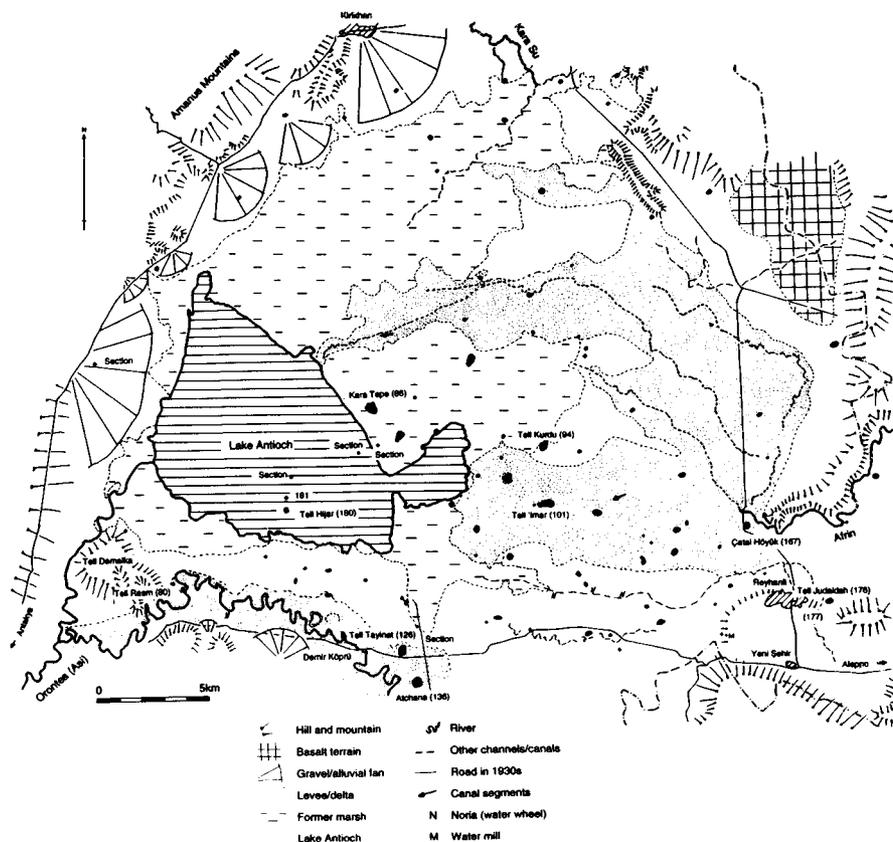
### Investigations at Tell Kurdu

Our 1996 investigations in the Amuq Valley continued the path-breaking work the Oriental Institute began in the 1930s, when the province of Hatay was part of the French mandate of Syria, established after the breakup of the Ottoman Empire during World War I. Between 1932 and 1938 the Oriental Institute of the University of Chicago sent expeditions to the Amuq Valley to find Ḫattina, a site with monumental architecture of the late Hittite kingdom, dating to the first millennium BC, as well as to provide a thorough reconnaissance of settlement in the valley.<sup>1</sup> The Amuq survey by Robert J. Braidwood, Calvin W. McEwan, and the Chicago team found 178 mounds and of these several mounds were sounded: Chatal Höyük, Tell al-Judaidah, Tell Ta‘yinat, Tulail al-Sharqi, Tell Ta‘yinat al-Saghir, Tell Kurcoğlu, Tell Dhahab, and Tell Kurdu as well as a cave in the Reyhanlı vicinity at Vadi-el Hamam.

Part of our attention this year was focused on Tell Kurdu (site number 94), which had been briefly sounded in 1938.<sup>2</sup> Located in the central part of the Amuq Valley, it measures 450 × 380 × 9 m (17 ha) with a higher southern mound and lower peak in the north. One of the more singular features of the site is that it is profoundly associated with fifth-millennium BC Ubaid-related Chalcolithic period assemblages, indicating relationships to Mesopotamia and the Tigris-Euphrates basin sites, to the east in Syria. This period represents the foreshadowing of the development of complex state societies and urbanization in southwestern Asia. The presence of painted Mesopotamia-related Ubaid-like wares bring up questions of “colonial” enclaves, recently a topic of much debate especially for the subsequent Uruk period. We would like to document the transformation of relationships from a prevailing pattern of strong local cultural expressions at Kurdu (and perhaps the rest of the Amuq Valley) to one when a western arm of the Ubaid came into contact with it. The nature of these Mesopotamia- or Syria-related cultures will be the focus of our future investigations because these periods have been found in relatively narrow soundings in other areas.

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1. See *Mounds in the Plain of Antioch: An Archaeological Survey*, by Robert J. Braidwood (OIP 48; Chicago: University of Chicago Press, 1937); *The Oriental Institute*, by James H. Breasted (University of Chicago Survey 12; Chicago: University of Chicago Press, 1933).
  2. See *Excavations in the Plain of Antioch, Volume 1: The Earlier Assemblages, Phases A–J*, by Robert J. Braidwood and Linda S. Braidwood (OIP 61; Chicago: University of Chicago Press, 1960).

## ARCHAEOLOGY



**Figure 1.** Map of Amuq Plain showing the location of sites within the lake

Another aim of the Tell Kurdu project will be to enhance the chronology of the Chalcolithic period. Over fifty sites had been documented in 1937 dating to the Chalcolithic period (Phases C–F) and more are anticipated in the intensive surveys projected for the dried lake bed. Although small numbers of Islamic and Roman wares were found on the surface of Kurdu, the preponderant assemblage was Chalcolithic painted wares. All were classified as “provincial” or “true” Halaf wares since Ubaid-related materials were not yet recognized in 1938. Excavations at Chatal Höyük, Tell al-Judaidah, and Tell Ta‘yinat ultimately distinguished Chalcolithic Phases C to E. Four trenches — I, II, and III on the higher mound and IV on the lower northeast crest — had been dug at Tell Kurdu. Trench IV yielded Phases D and E in mixed levels on top, with Phase C below. Trench I yielded Phases C, D, and E and Trenches II and III yielded Phase E. Our findings suggest that Phase E was confined to the higher summit, measuring roughly 150 × 200 m (3 ha).

The ceramics found at the 1938 excavations included Ubaid-like monochrome painted ware, while Ubaid-like bichrome painted ware, dark-faced burnished ware, old and new cooking pot ware and simple ware constituted the bulk of the sherds. The excavators noted that evidence of a transition from Phase E to Phase F did not exist there and that the site had been abandoned at the beginning of Phase F. The

Braidwoods (OIP 61, pp. 203–04) suggested that it also may not contain the entire sequence of Ubaid-related materials since painted sherds on the surface of Karaca Khirbet ‘Ali (site no. 168) did not fit Amuq D, E, or F and that strata representing this period may lie elsewhere. Part of the answer may lie in the publication of the excavations at Tell esh-Sheik (site no. 135), part of the British project at Alalakh (site no. 136) excavated by Sir Leonard Woolley, which revealed Ubaid-like ceramics in the upper levels. Nearby, at Tabara al-Akrad (site no. 137), the earliest levels (VII) also yielded Ubaid-related painted wares along with local flint-scraped Coba bowls. The related large site Imar al-Jadid al-Sharqi (site no. 101), located 2 km to the south of Tell Kurdu, should ultimately provide these key Chalcolithic levels when excavated.

Because of the short two-week time limit, the soundings in 1938 had been excavated in arbitrary strata of 50 cm. Architecture consisted of mudbrick and daub walls with stone foundations, although house plans could not be reconstructed because of the small exposures. Very little is known of the architecture relating to this formative period of state societies. However, our renewed investigations at Tell Kurdu have a number of advantageous aspects that promise to answer these questions. As the third most extensive mound in the Amuq Valley (after Atchana and Ta‘yinat), Tell Kurdu promises to allow broad horizontal exposures to reveal entire architectural plans for the Ubaid period since there are no later overlaying strata.

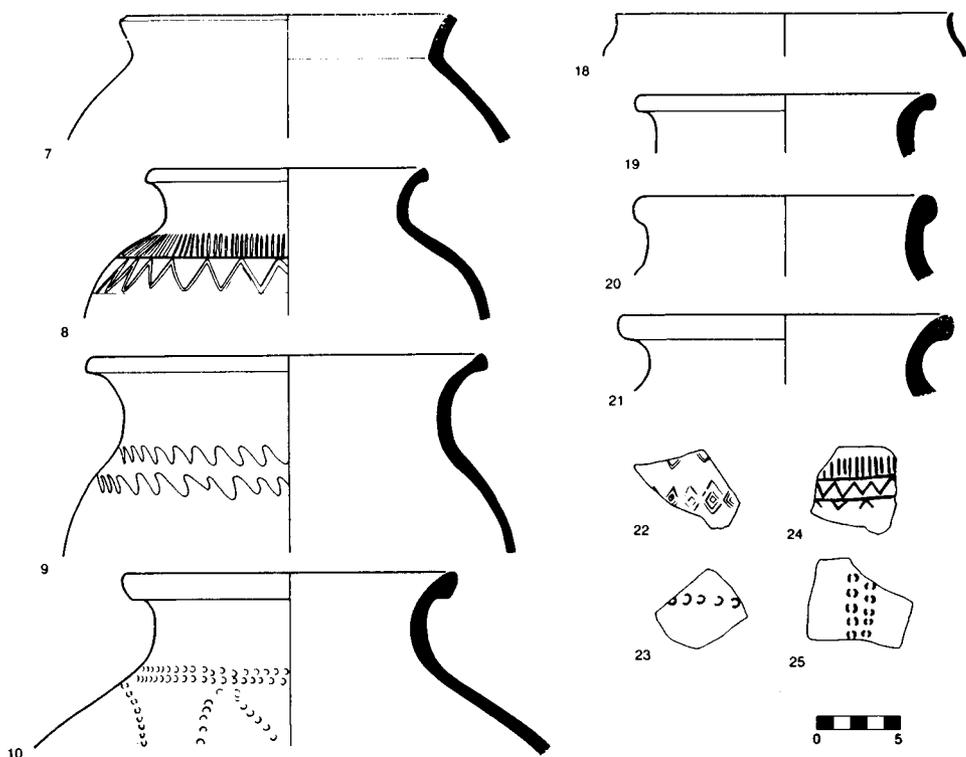
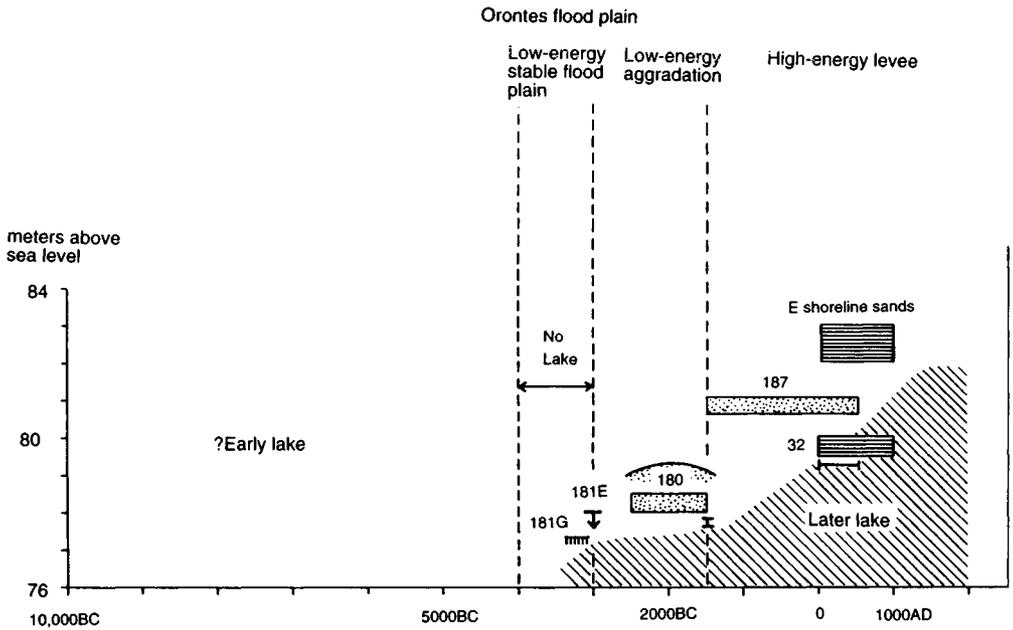


Figure 2. Amuq G ceramics of around 3000 BC, or slightly later, from site AS 181

## ARCHAEOLOGY



**Figure 3. Reconstructed rise in level of the Lake of Antioch (indicated by the oblique hatching)**

Our 1996 exploratory work at Tell Kurdu began with a site grid that was constructed over the site and work was begun within two of the  $10 \times 10$  m squares, led by Scott Branting. Unfortunately damage by modern earth-moving equipment to widen cotton fields had obliterated the earlier Trenches I–III. In addition, the summit of the mound had been leveled down by a bulldozer and the deposits were spread out over a wide horizontal area, increasing the scatter of ceramics beyond the original mound. The placement of the initial  $5 \times 5$  m trench in grid square 1009/1017 was selected in order to make best use of the existing bulldozer cut on the southeast slope. The 1 m deep and 5 m long section of this cut in grid 1004/1017 was cleaned, drawn, and photographed. The section provided a useful guide to anticipate horizons as the adjacent trench was taken down to a depth of ca. 1 m.

No coherent stratigraphy emerged from the topsoil and subsequent mixed layer, but a destruction event was found in the next layer with collapsed architectural elements and carbonized grains spread over nearly the entire extent of the exposure. Fragments of mudbrick collapse and part of a wattle and daub wall of a structure, perhaps a storage unit, was found with remains of several scatters of large pottery fragments in situ. In the adjacent trench by the cut section, a bread oven was reconstructed. Work was stopped until a full excavation team and backup staff come out for large scale excavations in 1998. The excavated material was registered, stored, and taken to the Hatay Museum for future study.

In 1997 our pre-excavation work will entail continuing the survey work. In addition, work is progressing towards the construction of a dig house that will be our headquarters in the seasons to come.

## Regional Project

In 1996 the Regional Project fell into two distinct programs. The first comprised a continuation of the geoarchaeological project that had started in 1995 with the specific intent of charting the history of the development of the Lake of Antioch. This work was continued in 1996 with the aim of providing a much broader range of environmental data for the region (see *News & Notes* 154 [Summer 1997]). The second part of the project was the continuation of the archaeological survey, which itself is building on the original survey conducted by Robert Braidwood and published sixty years ago this year. This survey is being led by Jan Verstraete, University of Cincinnati, who is specifically attempting to link the cultural patterns of the Amuq in the late second millennium BC with those of the Aegean. This work is crucial, because not only is the period of Jan's interest fundamental to the development of the Amuq sequence, but also, being Near Eastern specialists, we tend to come to many problems with an eastern or Anatolian perspective. By shifting the perspective

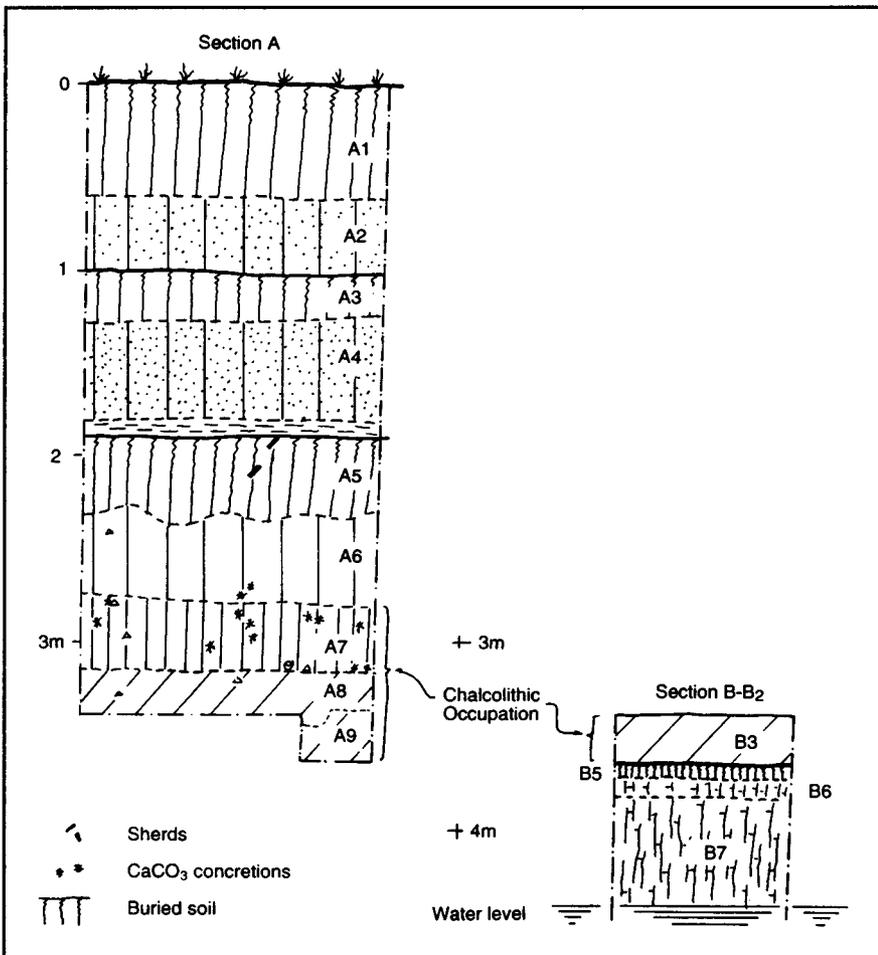


Figure 4. Drawing of main levels in the Atchana drain showing the banded alluvium (A1-A4 and A5-A6) over the buried Chalcolithic site

## ARCHAEOLOGY

towards the Aegean, we are gaining a more comprehensive view of cultural developments in the region.

### Lake of Antioch

Following two brief field seasons in 1995 and 1996, sufficient data have now been amassed to provide a general statement concerning the history of the Lake of Antioch in relation to changes in the alluvial regime of the main river, the Orontes (or Nahr al-Asi). The palaeoenvironment, as reconstructed, is relevant both to the interpretation of the archaeological data recovered by Robert Braidwood in his original survey, as well to an understanding of some gross features of the settlement pattern.

It has long been suspected that this lake was of fairly recent date. During the first field season in 1995, the age of the lake was demonstrated by the discovery of one site, Tell Hijar (AS 180) within the body of the lake, and a second (AS 181), even further within the lake and apparently sealed below the lake sediments (fig. 1). During the 1996 field season, more detailed investigations at these two sites demonstrated that a large part of the lake must have formed after ca. 3000 BC.

Clay beds sealed below site AS 181 appear to belong to an earlier lake. Within this sequence, organic material contained within sandy clays at almost 5 m below plain level have been dated by radiocarbon to around 7,500 years ago, but it is not yet clear whether these were deposited in a lake or not. Here, rather than describe the evidence for earlier lakes, we provide the latest information on the development of the Lake of Antioch itself, which is presented using evidence drawn from archaeological sites that developed prior to or during the rising stages of the lake. Parallel developments of the Orontes River are given using sections recently exposed along a north-south drain near Tell Atchana.

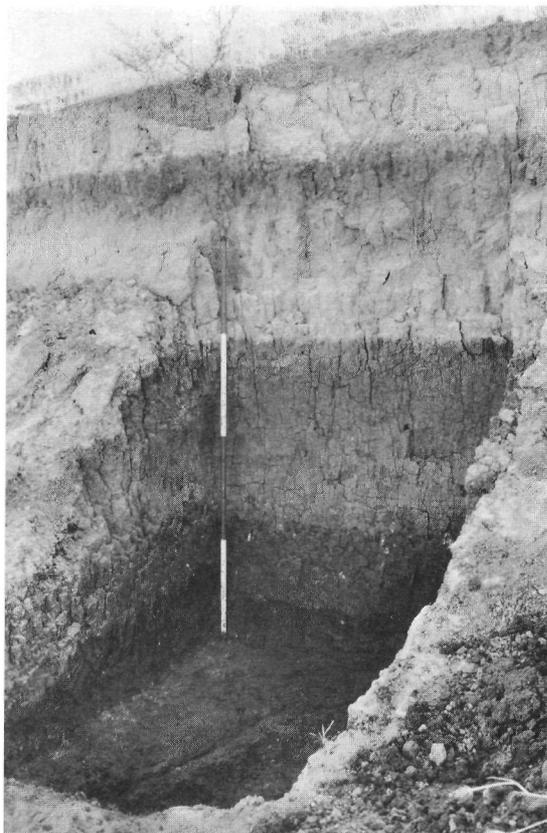
### Archaeological Sequence in the Floor of the Lake of Antioch

Both Tell al-Hijar (AS 180) and site AS 181 were discovered in 1995. The latter site was recognized by numerous sherds upcast along shallow ditches dug for the irrigation of cotton. In 1996 these ditches were cleaned to obtain a relationship between the two sites (AS 180 and 181), the overlying sediments and an underlying old ground surface. Seven sections were cleaned, three of which were within the approximate bounds of AS 181 (D, E, and F), with an additional section (G) being some 200 m to the north of AS 181.

As described in the *1995/96 Annual Report*, Tell Hijar appears as a small rock-strewn mound of some 3 ha (ca. 7 acres) within the bed of the former lake. Tell Hijar is now cut by a north-south drain and where cleaned (in locus A) the lower occupation levels of the site, dating to between Amuq H/I and L (i.e., mid-third to mid-second millennium BC) were shown to be sealed below 40–50 cm of brown shelly clay loam deposited by the former lake. Because there were pits excavated into the pre-lake old land surface, we conclude that there was no lake present at the site when the pits were dug. The presence of Amuq H, I, and L pottery within the pit fills suggests that this area was dry until at least the early second millennium BC.

Site AS 181, although recognized in 1995, was not well defined. Therefore in 1996, by the judicious cleaning of sections of irrigation canals that cut through the

site, we were able to demonstrate that the site covered about 1 ha (2.5 acres), all of which was sealed below sediments of the former lake. Within the site, section cleaning showed that lake sediments overlay horizontal floors containing large quantities of Amuq G ceramics, and these floors in turn rested upon a buried soil containing large fragments of wood charcoal (fig. 2). Near the northwest extremity of the site, section cleaning revealed a single mudbrick wall, 1.35 m wide associated with Amuq G pottery and sealed below some 50 cm of lake deposits. The size of this wall suggests that it may have been a small wall that enclosed the entire site. Because the area between sites AS 180 and 181 appears to have been open, unoccupied land, we can see that AS 181 was distinct and different from Tell al-Hijar. Interestingly, it is roughly contemporaneous with the Amuq G levels investigated at the base of Tell Judaidah by the Amuq Project in



*Figure 5. Photograph of banded alluvial sequences deposited by the Orontes River*

1995. The distinctive ceramics date to the very beginning of the third millennium BC, and must postdate by only a short time the well-known Uruk period, when this part of the fertile crescent was integrated into what has been described as the "Uruk World System."

Pottery from the cleaned sections within AS 181 form a consistent assemblage of Amuq G materials in which cooking pot wares were predominant. However, sherds of fine ware bowls and cups were more common in area D (fig. 3). From such variations between areas, it is therefore possible to infer that different parts of the site contained activities or areas of varying status. Apart from a single Amuq F sherd in locus F2, the only suggestions of pre-Amuq G occupation were one or two sherds of possible dark-faced burnished ware ceramics of Amuq Phases A, B, or C.

### **Preliminary Reconstruction of Lake**

In order to provide estimates of former lake levels, soil sections were cleaned along the east-west Afrin drain and in association with a number of archaeological sites around the former lake. These points should be regarded only as potential maximum lake levels inasmuch as they simply represent occupation levels that must have been above water level when the sites were occupied.

## ARCHAEOLOGY



*Figure 6. Large site at the north end of the plain cut by earth-moving activities*

In the Afrin drain, white silty lake marl containing fragments of freshwater mollusks and bivalve shells were present above a dark-colored old land surface, again containing fragments of small shells. This dark humic horizon beneath the lake marl appears to be a buried marsh horizon and is probably equivalent to a similar buried soil recorded in AS 181G to the south.

In addition to the presence of sites AS 180 and 181, other data points employed for estimating former elevations of the Lake of Antioch (fig. 4) included:

1. Still-water deposits on a buried land surface at Tell Sultan (AS 32) at the north end of the lake basin. These deposits show that water levels were at ca. 80.5 m above sea level during the Roman occupation of the site.
2. Roman and early Byzantine pottery on AS 180 indicate that the site was occupied during this time range. Because written sources suggest the presence of a lake by Hellenistic/Roman times, the site might have formed an island within the lake, which must therefore have been at approximately this level or lower.
3. The presence of site AS 187 (ca. 80.6–81.1 m above sea level) within the northern marsh shows that this area must also have been drier during its main periods of occupation. During the Middle Bronze Age this northern marsh area probably remained above lake or marsh level, but in Roman times the site had probably become partly inundated by water, so that this site might also have formed an island within the lake.
4. Along the eastern edge of the lake, beach and dune ridges of shelly sand contain occasional sherds of red late Roman to early Islamic brittle ware. These shoreline features suggest that water level rose to a maximum of

**AMUQ VALLEY REGIONAL PROJECT**

82–83 m above sea level during the first millennium AD, which would conform to medieval Islamic records (ca. AD 1300) that suggest the site had attained its early twentieth century size, if not more, during this time period. Between AD 1000 and the present day, depending upon the balance of inflow and outflow, lake level probably then fluctuated between 82 and 83 m above sea level.

**Orontes Valley Sedimentation**

The formation of the Lake of Antioch was ascribed by Leonard Woolley to an earthquake that caused the Orontes River to be blocked by a rock bar, or, by Robert Braidwood, to be the result of excessive siltation from the Orontes. The 1996 campaign provided evidence for the accumulation of a series of alluvial deposits that may relate to the development of the lake during the first millennium BC.

In a north-south drain to the east of Tell Atchana, two sections were cleaned in 1996 to expose a total of nine layers that formed an aggrading sequence of sediments within the ancient Orontes floodplain (figs. 5–6). At the base of the sequence at a depth of some 3 m was an old clay floodplain of the Orontes, deposited when the river flow was more sluggish than in recent centuries. Above this, three layers (A7, A8, and A9) indicate that a small site had been present on this earlier Orontes floodplain. The numerous large potsherds, some bone, flints, and obsidian demonstrate that this represents sedentary in situ occupation, of mid-late Chalcolithic date (Amuq E). This occupation occurred between about 5,000 and 4,000 years ago. Layers 5 and 6 deposited over this site were also clays deposited in a floodplain environment, but the contained sherds, which were smaller and more abraded than those below, can be tentatively dated to no later than the second millennium BC. Above this, sandy clays were deposited by higher energy floods as layers A4 to A1. Flood loams, Layers A4–A1, were devoid of pottery, but occasional small freshwater mollusks from layer 4 confirm that these deposits accumulated in a riverine environment.

When we look at the Orontes River sediments in combination with estimated lake levels, we see that the periods during which there was no lake or there were low lake levels correspond to the early phases of the Atchana drain (A9–A5) when flood energy levels were low. The rise in lake levels, which appears to have taken place during either the later second millennium or first millennium BC, therefore corresponds approximately to the period of increased flood energy of the Orontes (i.e., layers A1–A4), or to a possible channel shift. Although further dating evidence is required from both the lake and riverine environments, it seems that the lake developed during the second or first millennium BC, possibly as a result of increased flooding over the banks of the Orontes. Such flooding would have resulted in the accumulation of large bodies of water in the low-lying land within the basin center. If such flooding occurred frequently, there would have been insufficient time during the summer for evaporation to remove the accumulated water, thereby resulting in a gradual increase in lake level. Such inputs could have been reinforced by the arrival of additions of surplus irrigation water from irrigation canals, as was suggested in our first interim report. It must be emphasized, however, that further survey may provide more evidence on the history of the lake. Although to date we have not been

## ARCHAEOLOGY



*Figure 7. Site of Gölbaşı Höyük within Lake Gölbaşı at the north end of the Amuq Plain*

able to find any evidence of an artificial barrage, it remains possible that a dam across the lower Afrin above its junction with the Kara su could account for the formation of the lake. Alternatively, tectonic or earthquake activity, or even climatic change, could have contributed to the development of the lake.

### Archaeological Survey

Despite increasing evidence for the loss of sites below a sedimentary veneer, the Amuq still offers a vast array of archaeological sites. Archaeological survey is taking place concurrently with environmental investigations and excavations at Tell Kurdu in order to complement and update the earlier surveys of Robert Braidwood and U. Bahadır Alkım. Particularly crucial is the recording of sites that for various reasons are suffering damage as a result of the extension of irrigated agriculture particularly cotton fields. Altogether, 93 sites have been recorded at some level of detail during 1995 and 1996. This compares with a total number of 178 sites that were surveyed, within both modern Syria and Turkey, during the original Braidwood survey. Furthermore, a number of sites in the northern part of the plain have been re-surveyed, either because they were omitted during the Braidwood survey or because they occurred where the Braidwood and Alkım surveys overlapped, and it was therefore necessary to provide more details on individual sites. Particular emphasis was placed on the Gölbaşı area (immediately north of the mapped area illustrated), in order to provide a record of settlement and cultural change to complement the prospective results of pollen coring within that lake and adjacent wetlands.

To conclude, the second field season has shown a dynamic landscape. Not only has the lake expanded to encroach upon what must originally have been cultivated land or pasture, but also riverine flood levels appear to have increased significantly

in more recent times. Although it is still too early to state which environment coincided with which period, it is clear that the environment is not just a passive factor in the development of the local economies.

## Acknowledgments

The 1996 Amuq season was conducted under the auspices of the Turkish Ministry of Culture, Directorate General of Monuments and Museums, and the Antakya Museum. The team was directed by K. Aslıhan Yener. Tony J. Wilkinson directed the regional geoarchaeological and archaeological surveys. Scott Branting, graduate student in the Department of Near Eastern Languages and Civilizations (NELC), and Hatice Pamir, archaeologist at the Mustafa Kemal University in Antakya, undertook the investigation at Tell Kurdu. Jan Verstraete, graduate student at the University of Cincinnati, Neslihan Hazırlar from the University of Diyarbakır, and Murat Süslü, archaeologist at the Mustafa Kemal University, investigated the settlements with Tony J. Wilkinson. Tülin Arslanoğlu, archaeologist at the Mustafa Kemal University, and Eleanor Barbanes, graduate student at University of California at Berkeley, handled topographical mapping, section drawing, and illustrating the ceramics. Elizabeth Friedman, graduate student in the Department of Near Eastern Languages and Civilizations, and Charles Johnson, Susan Mini, and Ercan Alp of the Advanced Photon Source are in the process of analyzing soil samples and metal finds from the Amuq at Argonne National Laboratory.

We are particularly grateful to both the Oriental Institute and its members — especially Mr. and Mrs. Albert F. (Bud) Haas, Mr. and Mrs. Maurice D. Schwartz, and Ms. Melanie Ann Weill — who contributed financially to the success of the project. Special thanks go to Mrs. Theodore D. Tieken and Malcolm H. Wiener and the Institute of Aegean Prehistory for their continuing support of the project. Volunteers Betsy Kremers and Bud Haas as well as research assistant Simrit Dhesi greatly added to our ability to process finds from the site in Chicago and we thank them sincerely. We are grateful for the help and support given by the members of the Antakya Archaeological Museum. In Ankara we have been greatly assisted by the General Directorate of Monuments and Museums. In Antakya we are grateful for the help given by the Hatay Museum Director and staff members Hüseyin Dinçer, Faruk Kılınç, Lale Saraç, and also to the newly established Mustafa Kemal University and its rector, Professor Haluk Ipek. Thanks also go to members of the Hatay and Reyhanlı administrations, Utku Acun (Vali), Erdoğan Üzdemir (Assistant Vali), Ayhan Çiftaslan (Assistant Vali), Hasan Eliaçık (Culture), İbrahim Oflazoğlu (Tourism), Mehmet Hazırlar (Library), and Ümer Doğanay (Kaymakam).

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