

AMUQ VALLEY PROJECTS

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Introduction

Following a hiatus of fifty-seven years, a team from the Oriental Institute renewed archaeological investigations in the Amuq Valley. Although at the time the Amuq was located within Syria, boundary changes during World War II now place the plain within Turkish Hatay. During the five weeks of fieldwork in September/October 1995, our efforts were devoted to carrying out a regional survey and a salvage operation at the multi-period mound of Tell al-Judaidah, at which we examined the nature of strata exposed by modern earth-moving operations. A number of days were also spent investigating the gold mining works at Kisecek in the Amanus Mountains (fig. 1), conducting a surface survey at Tell Kurdu, and drawing profiles at Tell Dhahab.

Between 1932 and 1938 the Oriental Institute of the University of Chicago went to the Amuq Valley to find a site with monumental architecture of the late Hittite kingdom, Hattina, dated to the first millennium B.C. An additional aim—to provide a thorough reconnaissance of settlement in the valley—was undertaken by Robert J. Braidwood, Calvin W. McEwan, and the Chicago team. Of the 178 mounds discovered, 6 were sounded: Chatal Höyük, Tell al-Judaidah, Tell Ta'yinat, Tulail al-Sharqi, Tell Ta'yinat al-Saghir, Tell Kurcoğlu, as well as a cave near Reyhanlı at Vadi-el Hamam. During the last year (1938), they sounded Tells Dhahab and Kurdu in order to complete a sequence to A.D. 600. Ten prehistoric phases were established, based on inter-mound stratigraphy and artifact typology, from the earliest (Phase A) to about 2000 B.C (Phase J). Each phase included a range of strata and floors from which particular assemblages were characteristic. The later Phases K–V, which are in the process of being assessed, make a total of 22 phases in all.

This first year of the new Oriental Institute Amuq Project was the time to get an overview of the region and the archaeological sites within it. Fortunately the original survey undertaken by Braidwood in the spring of 1936 provided an excellent yardstick against which to assess the region some sixty years later.

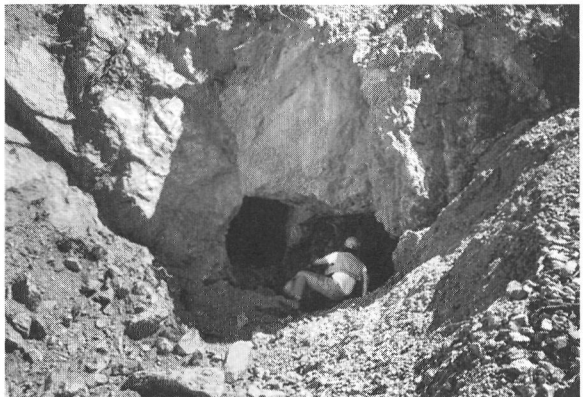


Figure 1. Gold mine at Kisecek, Amanus Mountains, Antakya

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Situated east of the Amanus range, the Amuq Valley (Amik Ovası), or the plain of Antioch, extends to the foothills of the Saman Mountains and Akra Mountains in the south and Kurt Mountain in the east. Four cultural zones—Anatolian (Hittite and Hurrian), the eastern Mediterranean (Aegean and Cypriot), the Levant and Palestine (Egyptian and Canaanite), and northern Syro-Mesopotamia (Hurrian/Mittani and Assyrian/Babylonian)—converge in this mountain-bounded valley.

The attractiveness of the Amuq Valley for archaeological investigation is based on four factors: agriculture, water, strategic location, and control of precious material sources. The plain, which is separated from the Mediterranean by the Amanus Mountains, gained access to the sea via the Orontes River (Asi Nehir) and its estuary. Routes through the valley are still used by transhumant pastoral nomads. The Amanus Mountains have a strong vertical zonation, passing from Alpine forests to hot, humid coastal regions. The oft-visited rich pasture lands of the Amanus highlands are thus systemically bound together with the location of vital raw materials sought by the ever hungry urban sites in lowland Syria, Anatolia, and Mesopotamia. Preliminary survey and excavation has shown that the Amuq Valley contains an unusual concentration of culturally related habitation sites ranging in date from the end of the sixth millennium B.C. to the Turkish Republican period.

The Metallurgical Paradigm

The Amuq Valley has also held great interest for early metals researchers ever since the discovery of the Amuq G polymetallic figurines and a crucible with tin-rich copper encrustation from Tell al-Judaïdah. Altogether, ten artifacts or fragments of copper from Phase G contain appreciable tin contents, and these are the oldest tin bronzes in the Near East (ca. 3000 B.C.) that have thus far been discovered. Indications that copper was utilized even come from the earliest period of incipient agriculture, the Neolithic (Amuq Phase A). Important hints as to the presence of an innovative metal technology also exist from the subsequent Chalcolithic period when copper was alloyed, first with arsenic (in Phase F) levels, and then nickel-rich alloys and tin (in Phase G). Metal artifacts from these levels resonate with polymetallic effects created by their being outfitted with accoutrements such as weapons, helmets, and hair ribbons made of silver/electrum.

Ongoing lead isotope analysis programs indicated a source of metal for several bronze and silver artifacts excavated previously from sites in the Amuq Valley. Several samples of copper and silver ore from mines in its northern border, the Taurus Range, matched Chalcolithic, Early Bronze, and Late Bronze Age metal artifacts, suggesting that they were made from these ores. The discovery of an Early Bronze Age tin mine at Kestel in the central Taurus Mountains made the early Amuq alloys all the more important technologically. Finding and determining the organizational strategies behind the metal workshops in the lowland Amuq

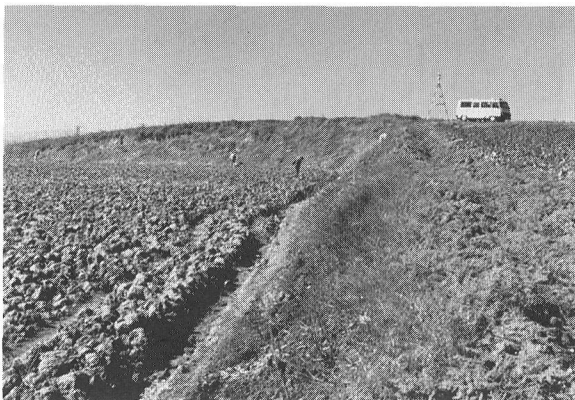


Figure 2. Cut site of Tell Kurdu

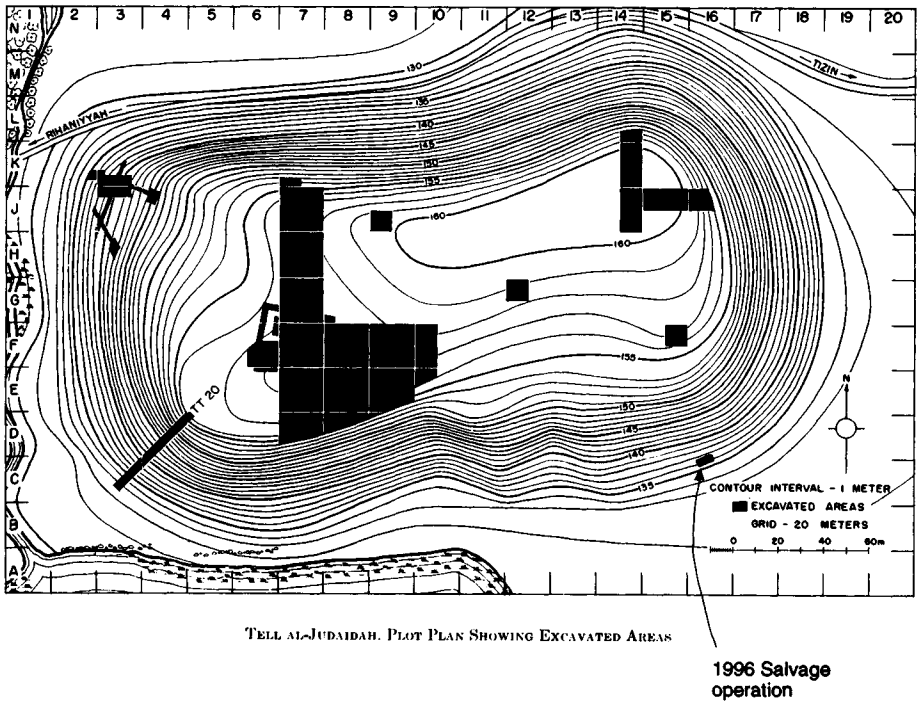


Figure 3. Tell al-Judaidah with location of 1995 salvage operation (after OIP 95, pl. 53)

Valley sites, where the actual crafting was done, lent immediacy and relevance to this project.

What sets the Amuq apart from other agriculturally endowed regions is its close location to mining zones such as the Kestel tin mine and the mines at Bolkardağ. Mountains containing silver, gold, copper, and iron mines encircle the valley in all four directions. Thus the Amuq offers the possibility of researching one of its as yet unrecognized advantages, namely the proximity of metal-bearing mountains. While metal technology and its characteristic site-specific industries are typical of most mounded sites all over metalliferous Anatolia, it is worth reiterating that not only does trade form the link between mining production (in the metal-rich highlands) and consumption of metal commodities (in lowland urban centers), but also such trade retains significance as a social force.

In addition to Tell al-Judaidah, two sites, Tells Dhahab and Kurdu, were also briefly investigated. Tell Dhahab is a small mound, measuring 60 m in diameter and 10 m high, located 200 m to the west of the pond at the base of Tell al-Judaidah. Situated on a natural rise, the site is probably functionally connected to Judaidah. We found the site severely damaged because of earth removal in 1996 and the construction of an asphalt plant adjacent to the slope; we drew detailed profiles and took charcoal samples for radiocarbon dating.

The badly damaged site of Tell Kurdu, which we expect to investigate during the 1996 season, is one of the large, low mounds lying in the central part of the plain. Recent bulldozer activities seeking to enlarge cotton fields had cut a triangular slice out of the mound (fig. 2), thereby exposing long sections of the site. Tell Kurdu covers an area of 450 × 380 m and is 9.5 m high. This makes it close to 12.0 hectares in area,

ARCHAEOLOGY

which is larger than Judaïdah during the Chalcolithic periods. In 1938 four soundings revealed architecture of *tauf* (*pisé*) and mudbrick walls with stone foundations. Ceramics of Phases C through F were found with recognizable Halaf and Ubaid related wares. The Ubaid-like Monochrome Painted Wares constitute 72–77% of the assemblage with 1–5% being the Ubaid-like Bichrome Painted Ware. Tell Kurdu was abandoned at some point before the beginning of Phase F and the inception of Uruk related materials.

Excavations at Tell al-Judaïdah

When substantial mudbrick architecture on the northern and northeastern edges at Tell al-Judaïdah was exposed by a bulldozer, a rescue operation was initiated to examine the nature of strata (fig. 3). A fragment of a multifaceted mold for casting was also found close to the cut. Ceramics in the section and sherds collected from the debris indicated that these walls dated to roughly Phase F (earlier fourth millennium B.C.) and Phase G (later fourth millennium and early third millennium B.C.). This gave us the opportunity to enhance the stratigraphy of these phases that had been previously excavated in the 1930s. Of the three architectural levels apparent, the earliest mudbrick walls had been

burnt and were therefore well preserved. A modified step trench was laid out 5 m wide and 2 m deep on top of the bulldozer cut (fig. 4). The resulting stratigraphic column enabled a ceramic sequence to be established (fig. 5), which was then fixed chronologically by radiocarbon dates derived from the lowest strata (3033–2625 B.C. and 3115–2900 B.C. calibrated, 2 sigma).

Massive mudbrick walls of a structure built with stone foundations were preserved to a height of 1.8 m and 1.5 m in width, in

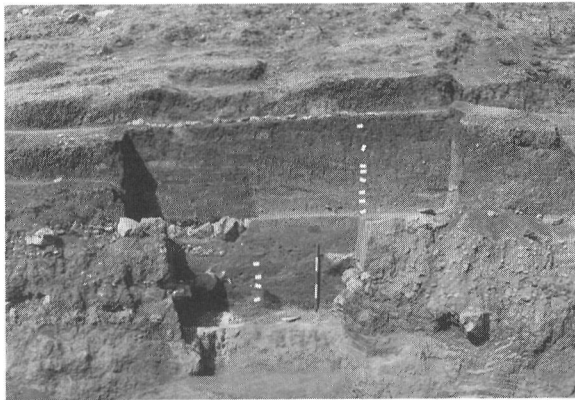


Figure 4. Modified step trench at Tell al-Judaïdah

the upper architectural level. The several occupation surfaces that emerged were associated with predominantly wheel-made Plain Simple Ware pottery, thereby dating this later structure to Amuq G. Three substantial walls, 1.6 m wide and 1.5 m high, bordered a room, which might have been used as a magazine or storage room, and was perhaps part of an administrative unit in Phase G in the lowest level. Large quantities of crushed pottery were recovered on the floor of the storage room. New types of storage jars and Cooking Pot Wares distinguished it from the phases above. Hitherto unknown Plain Simple Ware storage jars with a cream-buff paste were decorated with a red wash on the rim interior and with red paint drizzling down its outer surface (fig. 5j). Qa'lat er-Rûs, located on the northern coast of Syria 20 km south of Latakia, provided similar examples of this ware where they have been referred to as "Red Rim Pithoi." This gives a glimpse into some of the intriguing connections with the relatively less-known prehistoric periods of coastal Syria. A lead/copper pendant was also found in this room, assuring the presence of diverse metals in this early period.

The Regional Project

The immediate aims of the new regional project are to update Braidwood's survey by providing more details on site size and periods of occupation, as well as to record any sites that might have been overlooked originally or which have suffered recent damage. Because such cuts provide windows into the superimposed occupation levels, the exposed sections provide an opportunity to record more detailed occupation sequences than is possible from surface pottery alone.

Ultimately the aims of the regional project are to assess long-term changes in the region's population, changes in the river system and the Lake of Antioch, interactions between the human population and the environment, and more generally, to place the Amuq in a broad regional context. Changes in the local environment, particularly marshes and the lake, would not only have altered available land resources for the local communities but would also have inhibited settlements from developing in certain areas. In addition, because the Amuq represents a crucial link between the Mediterranean to the west and upper Mesopotamia to the east, the changing physical geography might have influenced the path of such routes. As a result of these constraints, in a survey of this type it is crucial to analyze not only the geomorphological configuration of the region today but also to examine patterns of change over the last ten thousand years.

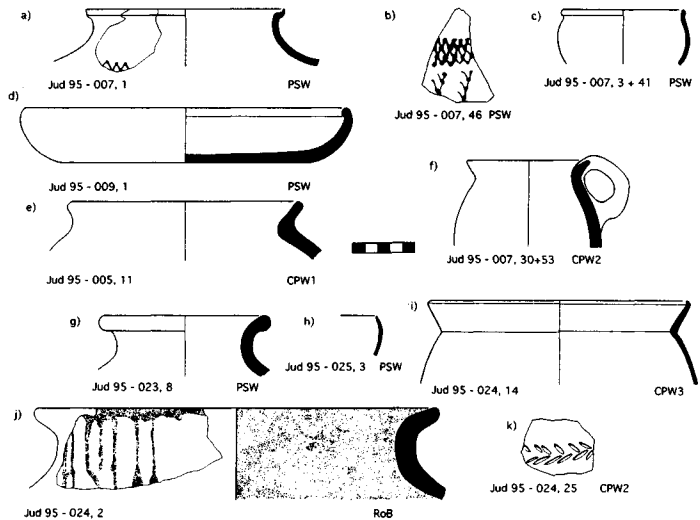


Figure 5. (a–d, g, h) Plain Simple Ware, (e) Cooking Pot Ware, (f, k) Cooking Pot Ware 2, (i) Cooking Pot Ware 3, and (j) Red-on-Buff Ware

Geomorphology

Sites were located with remarkable accuracy by means of a Global Positioning System and were then plotted on to French Levant series maps originally made in 1936. Together the maps provided sufficient coverage and detail for the recognition of alluvial fans, river levees, recent alluvial terrain, intervening flood basins, as well as the lake itself (fig. 6).

The large alluvial plain of the Amuq receives water from three main rivers, the Kara Su, the Nahr al-Afrin, and the Orontes. Rainfall, at around 600–700 mm per annum, is sufficient for rain-fed cultivation, but irrigation is necessary to increase crop yields. The Lake of Antioch, which until the 1950s formed the most conspicuous feature of the Amuq, has now been drained, with the result that the only traces of its former extent are

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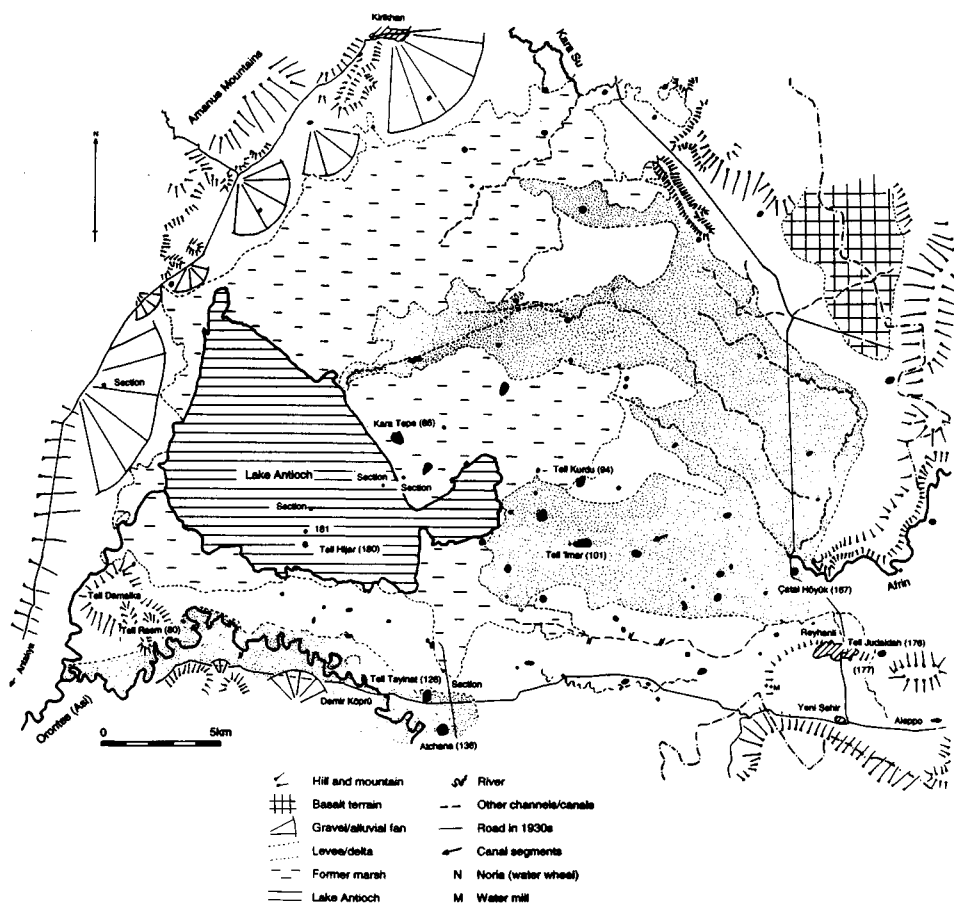


Figure 6. Preliminary geomorphological map of the Amuq based on French series 1:50,000 maps and limited field control

shelly lake clays, former beaches, and associated dunes that developed alongside the lake shore.

In the 1930s the presence of marsh and interspersed pools around the lake margin rendered many sites virtually inaccessible, so that Braidwood often had to wade through swamp and shallow water to reach them. As a result of the drainage operations, however, it is now possible to record some sites in greater detail than was hitherto possible. In places, the former marsh soils are framed by slightly raised silt/clay terrain (see stippling in fig. 6) that variously has been deposited by the Orontes, the Nahr al-Afrin, or by canals that apparently issued from them.

Sedimentary deposition has been pervasive along the western side of the plain where during the past ten thousand years incoming wadis have deposited at least 2–3 m of silt, sand, and gravel in the form of alluvial fans. On the other hand, the southern margins of the plain have built up as levees resulting from the overbank sedimentation of the Orontes River. This is best illustrated from a long cut exposed in a drain located immediately to the east of Tell Atchana (ancient Alalakh, AS 136), where alluvial silts (fig. 7) have buried pottery horizons dated to the fifth or fourth millennium B.C. some 3.5 to 4 m below the present ground surface. Although it is unclear whether this pottery

represents earlier phases of Atchana, or simply belongs to an outlying scatter of occupation, their presence indicates that at least 3.5 m of sedimentation has occurred over the past five to seven thousand years.

Farther north these riverine sediments merge laterally into complex deposits, some of which might have accumulated within the former lake. The accumulation of such levee deposits along the Orontes (see stippling in fig. 6) would have obscured smaller settlements, as well as any outer town of Alalakh or Tell Ta'yinat that might once have existed. This is especially important because recent visitors to Alalakh have noted the presence of a lower town; unfortunately this town was not visible because of the presence of cotton fields during the 1995 season.

Archaeological Survey

Our survey strategy during 1995 was selective and emphasis was placed upon recording sites of the second millennium B.C., sites with potential for yielding evidence of early metalworking activities, and of course any that had been severely damaged by bulldozing. A noteworthy example of a damaged site was Tell Kurdu, where systematic surface collections were undertaken by Scott Branting with a view to future excavation. In addition, sites of the second millennium B.C. were examined by Jerry Lyon to determine which were contemporary with excavated levels IV and VII at Alalakh (Amuq Phase M). This work should enable the geography of settlement to be reconstructed and related to the record of cuneiform tablets from Tell Atchana that, according to the work of Donald Wiseman and Bonnie Magness-Gardiner, provide clues to the administration of settlement in the region.

Because the Lake of Antioch was drained during the 1950s, we were keen to determine whether any archaeological sites existed under the former lake, as Leonard Woolley had suggested. Initial reconnaissance showed that two sites (AS 180 and 181) were located within the lake bed, 1 km and 1.5 km respectively north-northeast of the former lake edge (fig. 6) and in an area that had originally been covered by 1.3–1.8 m of water. The main site, Khirbet (or Tell) al-Hijar, remains as a scatter of limestone blocks and sherds rising to some 1 m above the former lake floor and occupying a total area of approximately 3 hectares. The abundant pottery suggests a range of occupations from mid-late third millennium B.C. to Late Roman-early Islamic, with occupation being most significant in the third and early second millennium B.C.

Less conspicuous was site AS 181, some 0.5 km north of Khirbet al-Hajar, that appears to have been occupied during the late fourth and third millennium B.C., as well as perhaps Neolithic. The presence of these two sites implies that the lake levels which prevailed earlier this century were 1.3 to 2 m above the levels during the third and early second millennium B.C.



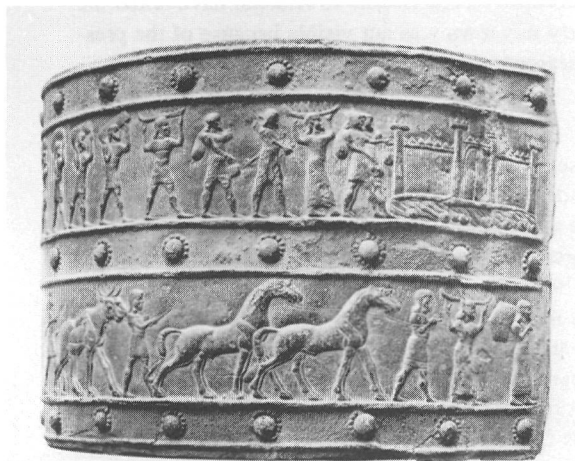
Figure 7. Alluvial silts of the Orontes blanketing terrain near Atchana/Alalakh

ARCHAEOLOGY

Early References to the Lake of Antioch

For historical periods the development of the lake can be inferred from textual sources and reliefs, a number of which relate to the land of Unki. Although no lake is referred to in pre-Seleucid sources, from the bronze gates at Balawat in present-day Iraq Olmstead has suggested that during the reign of Shalmaneser III (mid-ninth century B.C.) the inhabitants of Unki lived on island settlements within the swamp or lake. The evidence cited by Olmstead comprised illustrations of fortified settlements, apparently within areas of lake or marsh in the land of Unki and entitled "Tribute of the Unkians."

When scrutinized, however, we see that the settlements depicted, rather than being surrounded by a lake, appear to be within limited bodies of water, the wave pattern of which diminishes in scale as it turns away from the eye (fig. 8). This contrasts with other illustrations of extensive bodies of water from the same gates (for example the waves of the Mediterranean Sea at Tyre), which show no such foreshortening. The reliefs therefore suggest the presence of a moat around the Unkian settlements rather than a lake. Such a moated



Band V.3. Campaign in Northern Syria, 825 B.C. (continued).
Upper Register: Unkians bearing tribute; a city of the Unkians.
Lower Register: Tribute of a Syrian prince.

Figure 8. Panel from the Balawat gates showing depictions of Unkians bearing tribute (from L. W. King 1915, plate XXVII)

settlement is represented by the site of Yerköy (AS 99), which although dry today must once have contained water. We can conclude that by Shalmaneser III's campaign, the area of Unki probably had a water table that was at least sufficiently high to nourish moats, and which might in the lower areas have resulted in swampy or open water conditions.

By the time of Antioch's heyday in the Hellenistic-Roman period, the Amuq (Hellenistic Amykes or Amyke) was clearly occupied by an extensive lake that supplied the city with fish and shellfish. Medieval Islamic sources provide even more specific details. Thus Yakut (died A.D. 1229) and Abu-l Fida (born 1273, died 1331) both describe the lake as being of sweet water, measuring about 20 miles in length and 7 miles in width.

Other Features

Among a number of off-site features noted during the season, probably the most intriguing were a series of wheel ruts worn into the limestone immediately adjacent to the modern Antakya-Yenişehir road (fig. 9). These multiple troughs appear to have been abraded over an extended period of time by the passage of wheeled chariots or wagons. The location of the ruts along the alignment of the Roman road from Beroia (Aleppo) to Antioch (Antakya) suggests the ruts are most likely Roman in date, but an earlier date is also possible given the large quantity of chariots in use at Alalakh during the second millennium B.C. and their persistent use in Neo-Assyrian times.

Discussion

The initial season suggests that the Lake of Antioch was probably of modest size or even nonexistent in the third millennium B.C. References to a lake in classical sources do not support Woolley's suggestion that it was formed as a result of the damming of the Orontes by the sixth century A.D. Antioch earthquake, but rather that an earlier marshy flood basin became gradually transformed into a full lake sometime between the third and first millennium B.C.

The development of both marshes and a lake might have resulted from the blockage of drainage as a result of the growth of Orontes levees. Such growth might have progressively restricted the outlet of the plain, thereby decreasing the flow of the Orontes towards the sea. Furthermore, during major wet periods,

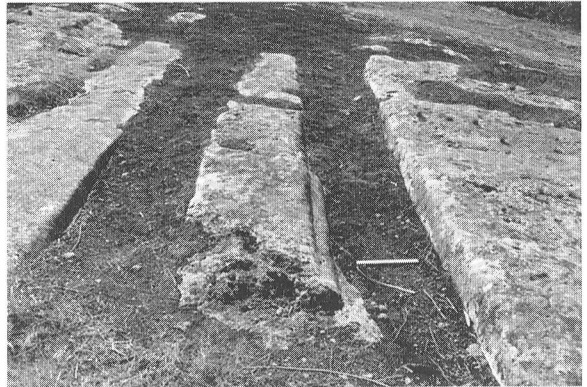


Figure 9. Ancient wheel ruts in limestone to the west of Yenişehir. Scale measures 30 cm

floods, perhaps exacerbated by increased runoff resulting from deforestation, must have periodically spilled over the banks of the Orontes to accumulate in the low-lying flood basin. In addition, canals leading from the Nahr Afrin would have discharged surplus water and eventually formed marshes at their termination points. Particularly problematic is the process whereby a river on a levee breaches its bank, thereby initiating a new flood course, usually through the adjacent lower flood basin. In the Amuq the location of the Orontes upon such a levee represents a potential instability, but whether or not the river ever shifted into the area subsequently occupied by the lake is not known.

Preliminary analysis therefore suggests that sites adjacent to the lake might originally have included greater areas of dry land than during later millennia, which is illustrated by agricultural production areas calculated for sites adjacent to the Lake of Antioch (fig. 10). These areas indicate that during the third millennium B.C. all known sites were sufficiently far from the lake to comprise mainly dry land territories. On the other hand, during the earlier first millennium B.C. groundwater levels were probably higher, and at least some sites were surrounded by moats. Certainly by Hellenistic times a lake was present, a situation which continued until the mid-twentieth century A.D.

The renewed Amuq efforts of the Oriental Institute began in 1995 and are intended to be the first of a multi-phase regional investigation. In future years the archaeological heritage of the area will be examined within the context of important technological, subsistence, and cultural changes taking place in the ancient Near East. This will provide the basis for an understanding of the cultural history in this unique environment bounded by resource-rich mountain highlands.

Acknowledgments

The 1995 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 led by Aslihan Yener, the director. Bekir Altan was the representative from the Ministry of Culture, Directorate of Monuments and Museums. Tony J.

ARCHAEOLOGY

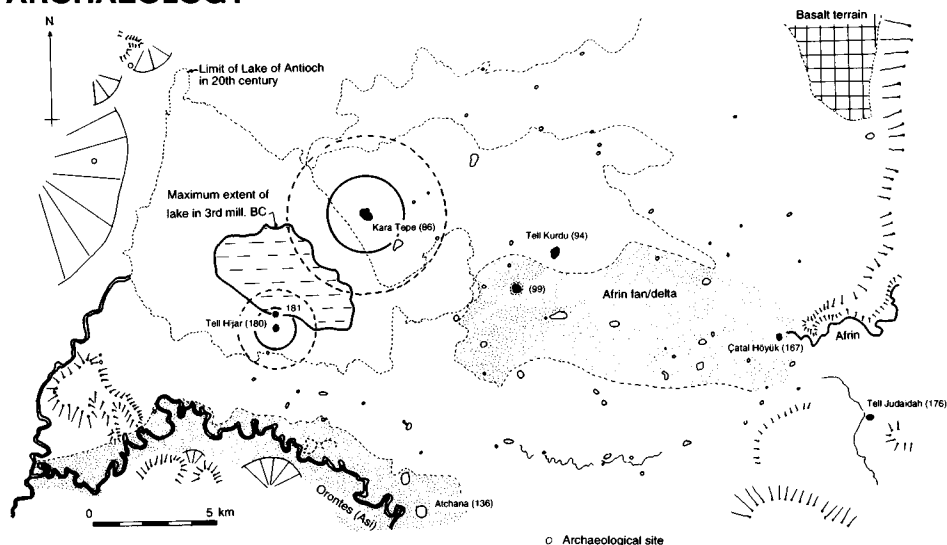


Figure 10. Reconstruction of maximum level of the Lake of Antioch assuming a level no high than that of site AS 181. Concentric circles indicate approximate sustaining areas calculated from the maximum size of key sites AS 86 and 180

Wilkinson conducted the regional studies. Clemens Reichel and Elizabeth Friedman, graduate students in the Department of Near Eastern Languages and Civilizations, undertook the salvage sounding at Tell al-Judaidah. Fine tuning the ceramics was tackled by Elizabeth Friedman. Scott Branting and Jerry Lyon, also graduate students in the Department of Near Eastern Languages and Civilizations, investigated the settlements with Tony J. Wilkinson. Clemens Reichel, Scott Branting, Jerry Lyon, Eleanor Barbanes, and Işıl Ören helped with topographical mapping, section drawing, and illustrating the ceramic typology. A brief archaeometallurgical survey was undertaken with Bryan Earl of Cornwall and Hadi Özbal of Boğaziçi University. Analyses of the Tell al-Judaidah crucible slag were further advanced by Mieke Adriaens of Antwerp University, Belgium.

In Ankara we were greatly assisted by the General Directorate of Monuments and Museums, Dr. Engin Özgen and Kenan Yurttagül, as well as Ergun Kaptan at the Turkish Geological Survey and Research Directorate (MTA). In Antakya we were grateful for the help given by the present and former Antakya Museum staff members, Hüseyin Dinçer, Mehmet Erdem, Faruk Kılıç, Lale Saraç, and also to the newly established Mustafa Kemal University and rector, Professor Faruk Ipek. Thanks also go to members of the Hatay and Reyhanlı administration, Utku Acun (Vali), Erdoğan Özdemir (Assistant Vali), Ayhan Çiftaslan (Assistant Vali), Hasan Eliaçık (Culture), İbrahim Oflazoğlu (Tourism), Mehmet Hazırlar (Library), Ömer Doğanay (Kaymakam), Mahmut Ekmen (Mayor), Zekeriya Herdem (TIGEM). In Adana we were again helped by Şinasi Apaydın, director of the MTA in the ancient mining at the Amanus sources.

Instrumental to the reopening of the Amuq Valley Project were Malcolm H. Wiener and the Institute of Aegean Prehistory. The authors wish to express their gratitude to both the Oriental Institute and its members—especially Mr. and Mrs. Albert F. Haas, Mr. and Mrs. Maurice D. Schwartz, Mrs. Elizabeth B. Tieken, and Melanie Ann Weill—who contributed financially to the success of the project. We are grateful for the help and support given to the project by Professor Robert Braidwood, Linda Braidwood, and Professor William Sumner. Thanks also go to Karen Bradley, Dr.

AMUQ VALLEY PROJECTS

Rudolph Dornemann, Professor Hans Güterbock, Dr. Alfred Hoerth, Dr. Raymond Tindel, and members of the original excavations and researchers preparing the earlier Amuq excavation materials for publication.
