

Archaeology in Turkey: The Stone, Bronze, and Iron Ages, 1997–1999

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The four years since this newsletter last appeared have been momentous ones in the history of Turkey and also in the archaeology of that country. In the terrible earthquakes of 1999 that took so many lives, some ancient monuments were damaged and work on some projects was cut short. Also in 1999, the visit of former U.S. president Bill Clinton to Ephesos raised public awareness of Turkish archaeology worldwide at a time when tourist numbers were threatening to flounder following a period of unrest and natural disasters. The completion of several large dam projects, which flooded large areas of Turkey, also brought about many new excavations and surveys aimed at recording and recovering as much archaeology as possible before the final inundation and, in some cases, also making news headlines worldwide.

Since 1998, these dam construction projects on the Euphrates and Tigris rivers have triggered a new round of international rescue work in the Karkamish and Ilisu Dam areas, which is, for the first time, accompanied by intense public debate. The impending flooding of the exceptional Roman site of Zeugma-Apamea was watched critically by both the Turkish and foreign press. It is thanks to this publicity that generous funding and a large international emergency team was set up to rescue the threatened mosaics. The situation at Zeugma is, of course, extraordinary and does not apply to most of the rescue excavations.

Archaeological research in Turkey greatly profited from earlier dam construction projects, exemplified by the Keban Dam Project on the Upper Euphrates (see figs. 1–3). Prior to its construction in 1968, eastern Anatolia had been an almost com-

plete blank on the archaeological map. A survey of the Keban Dam lake zone recorded 67 archaeological sites, 19 of which were investigated further. Of these 19 mounds, seven were excavated on a larger scale, and the remaining ones were tested by soundings. The information collected during seven years of rescue excavation still forms the core of what we understand of the cultural history of the Upper Euphrates. At the same time, these numbers illustrate well the problem that archaeology encounters when faced with such an ambitious project. In the Keban Dam area, a minimum of 48 sites have been submerged without any possibility of further investigation. These sites were recorded during the survey and therefore represent only the visible sites in the affected area. A certain number of sites must have remained undetected, about which we know nothing. The true extent of the loss in terms of human history can only be imagined. A site such as Nevalı Çori, which today symbolizes the importance of Turkey's southeast as one of the main stages of the "Neolithic Revolution" and which was flooded in 1992 by the Atatürk Dam, had not even been detected by the preliminary survey.

As with earlier projects, the new salvage projects are being coordinated and evaluated by the Middle East Technical University (METU) Centre for Research and Assessment of the Historic Environment (TAÇDAM). A total of 250 sites have so far been recorded in the Karkamish and Ilisu Dam zones, and excavations by Turkish and international teams have begun. Hasankeyf is the most famous site of those currently under threat, but there are others of equal historical importance. The initial results are exciting and promise to fill blanks in

*The authors are enormously indebted to the previous author, Marie-Henriette Gates, without whose sage advice this undertaking would not have been possible. The majority of this article is based on notes taken at the 22nd International Symposium of Excavations, Surveys and Archaeometry in Izmir (22–26 May 2000) and from published works. Where the primary excavators have been so kind to provide us with reports or illustrations themselves, we have gratefully included these, albeit sometimes in an abridged or translated form. Patient assistance has also been provided by the staff of the British Insti-

tute of Archaeology at Ankara, J. Robert Travis of Liverpool University, and most of all by Süheyla Gedik of Hacettepe University. To all of the above the authors extend their very deepest gratitude.

It is the very nature of any article of this kind that there will inevitably be mistakes and oversights in the material presented, especially given the extended duration since M.-H. Gates's last installment. We trust that our readers will be kind to our mistakes and hope that the revival of this series will encourage more excavators to submit reports for inclusion next year.

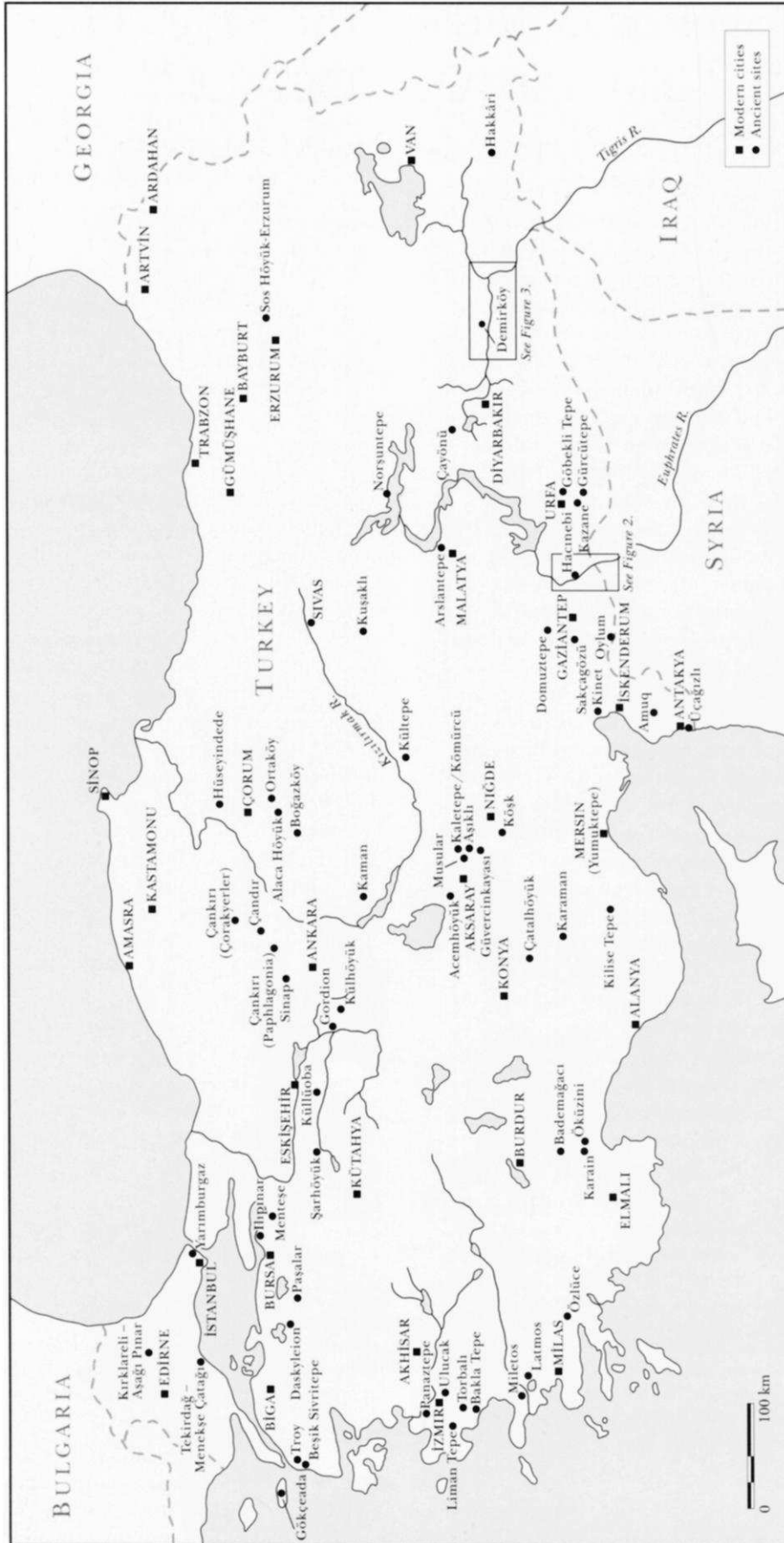


Fig. 1. Map of Turkey showing sites mentioned in this article (Map: Archeographics)

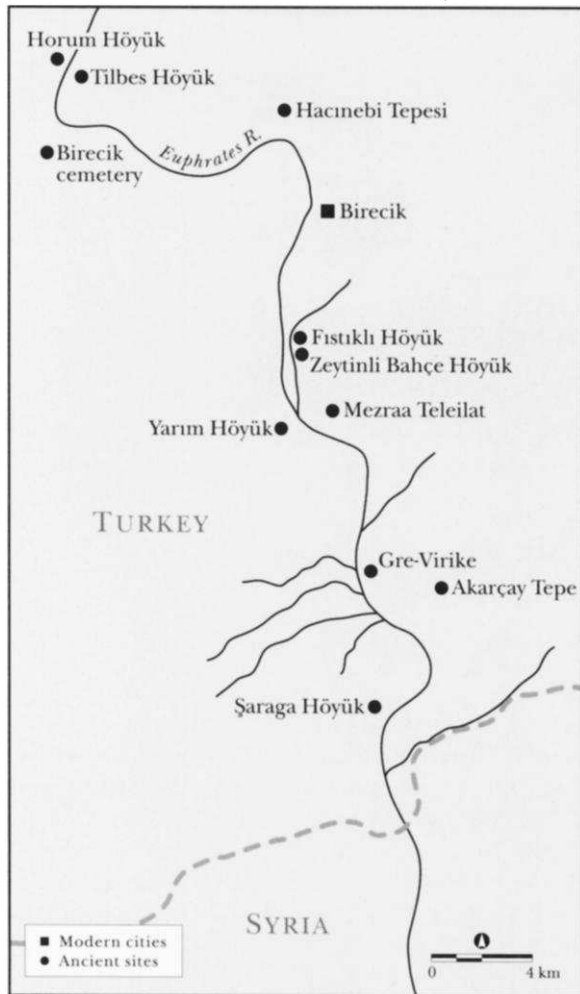


Fig. 2. The Karkemish Dam area (Map: Archeographics)

our understanding of Turkey's archaeological heritage, but even this cannot disguise the impending loss of two more historical landscapes. It can only be hoped that the feverish salvage activities taking place over the coming two years in the Karkemish reservoir and the next seven years in the Ilisu Dam lake zone will allow for the documentation of as much archaeological information as possible.

In the last four years, research in other areas has also created a flood of new data on all periods of Anatolian archaeology. Our understanding of the transition from hunter-gatherer to sedentary lifestyles has undergone rapid changes as a result of the impact of two new excavations in the Urfa area, at Göbekli Tepe and Gürcütepe. Here, complex hunter-gatherer communities appear to have been responsible for the erection of megalithic monuments and for the creation of a fascinating rock art style long before farming began to seriously transform human lifestyles. Göbekli Tepe pushes back the chronological starting point of art in south-east Anatolia and must add further doubts to the

Levantine primacy model of Neolithization. On the other hand, relations between central Anatolia, Syria, and the Levant show up more clearly now thanks to excavations at the obsidian quarry and workshop site of Kömürcü/Kaletepe. Stylistic differences between the lithic assemblages of the workshop and those of the local settlements hint at a level of organization behind the obsidian exploitation that was even more complex than was previously thought.

Central Anatolian Neolithic chronology can now be set on its own feet: data from the new Musular excavations bridge the chronological gap between late Aşıklı and earliest Çatalhöyük, and radiocarbon dates are now available for all these sites. Other missing links reportedly have been found on the Euphrates: rescue excavations in the Karkemish Dam area at the two new sites of Akarçay and Mezraa Teleilat revealed cultural sequences that cross the poorly understood transition from aceramic to ceramic Neolithic.

The Chalcolithic period has, as usual, also been a focus of academic attention in recent years. Late Chalcolithic-Uruk interaction has been a favorite research topic, reflected both in excavations and in conferences, making the results from the new Cappadocian site Güvercinkeyası all the more welcome. A seal and some pottery hint at relations with the north Syrian Ubaid culture and push the border of Ubaid contacts even further toward the northwest.

A real highlight has been the discovery of an Early Bronze Age (EB I) "princely tomb" in a kurgan-like structure at Arslantepe. Together with the prince, new questions about Caucasian-Euphrates relations have been unearthed. The metal assemblage from this tomb held several unusual alloys previously virtually unknown at such an early time.

New dots can be added to the map of third millennium B.C. urban centers. The urbanization boom at the end of EB II, well illustrated at Titris Höyük, is now also visible at Kazane Höyük and Tilbeshar.

For the Hittite Middle and Late Bronze Age, excavations continued at major central Anatolian sites such as Kültepe, Achemhöyük, Kuşaklı, and Boğazköy, but research on the periphery of Hittite Anatolia has also brought to light many new discoveries. Archaeological surveys of Çankırı/Paphlagonia and Şanlıurfa have also shed new light on these Hittite border regions, and at Kinet Höyük excavations have revealed an important Hittite presence in the Hatay region. In western Anatolia, at Troy, the excavation of a spring cavern is related to the deity ⁴KASKAL.KUR, mentioned in a Hittite treaty with Wilusa, which appears to strengthen the identification of (W)Ilios (i.e., Troy) with Wilusa. The publication of a new reading of the Karabel inscrip-

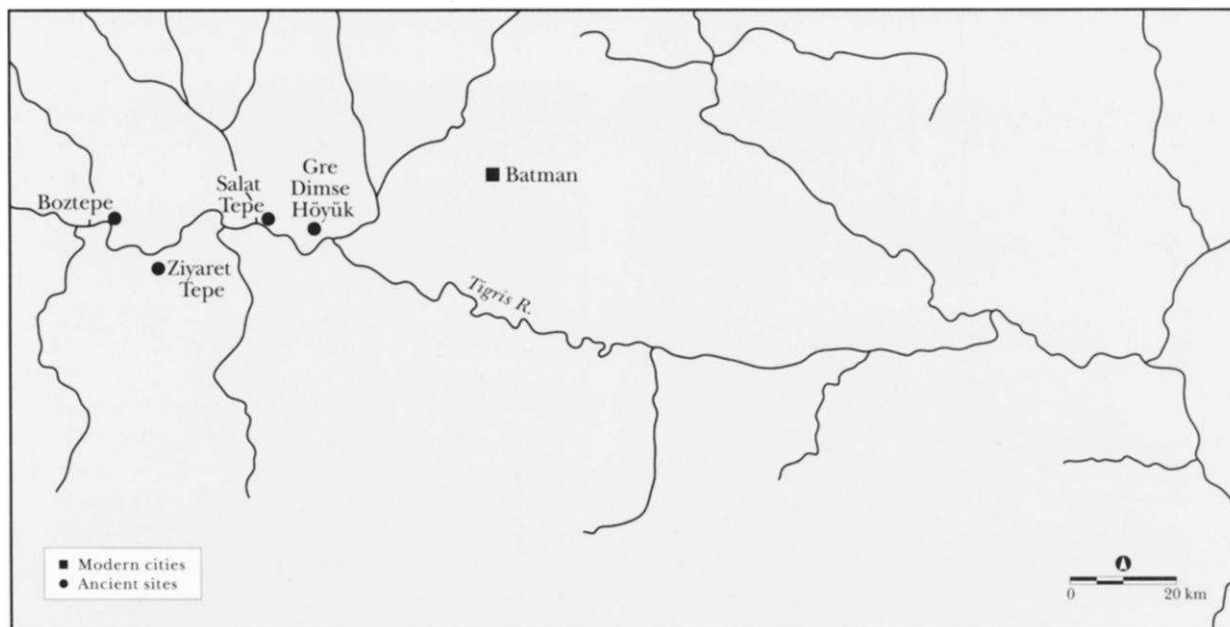


Fig. 3. The Ilisu Dam area (Map: Archeographics)

tion by David Hawkins¹ has advanced our understanding of the historical geography of western Anatolia in the Late Bronze Age. In light of this new research and new archaeological discoveries, Recip Meriç has identified the site of Torbalı-Bademgediği Höyüğü with Puranda, the castle of the king of Arzawa, Tapalazunawalis.

The continuing excavations at Miletos, now identified by an increasing number of scholars with the site of Millawanda, destroyed by Mursili II, uncovered more evidence for Mycenaean occupation at the site, especially in the 1999 season. Mycenaean pottery has also been found at Gökçeada, Torbalı, and Kilise Tepe, and two important new articles on the subject have recently appeared.² In September 1999, a conference held at Güzelçamlı to celebrate 100 years of excavations at Miletos included a day of papers on Ionia in the Bronze Age, and the publication of these is expected to further our understanding of this period and region. All these sites and regions are discussed in more detail below.

A brief outline of recent developments at major Iron Age sites in Turkey is included here, although this is by no means exhaustive, and a summary of the archaeology of Iron Age and Classical Anatolia is in preparation. In the meantime, for recent developments in classical archaeology in Turkey, Stephen Mitchell has compiled a survey article

with a particularly useful table³ that gives concordance, from 1988 to 1996, between the major report formats for new archaeological information in Turkey: *KST*, *AraşST*, *MKK*, and this *AJA* newsletter. In addition, wherever possible we have included Internet addresses for the sites listed in this article. In combination with those resources, this article is a forum in which the results of work by smaller excavation and survey teams based in Turkey can be put alongside the household names of world prehistory, such as Troy and Çatalhöyük (figs. 1–3).

BIBLIOGRAPHIC REVIEW

Conferences. Progress reports on all archaeological projects in Turkey are presented each year at the annual International Symposium of Excavations, Surveys and Archaeometry, which traditionally has been held in the last week of May in Ankara. In 1997 (26–30 May) it was hosted by Ankara University; in 1998 (25–30 May) it was held in the Tarsus Cultural Centre; in 1999 (24–28 May) it was at the National Library in Ankara; and in 2000 it convened in Izmir at the Büyük Efes Centre.⁴

The third INQUA meeting was held under the title of “Third Symposium on the Late Quaternary of the Eastern Mediterranean” at M.T.A. in Ankara on 1–4 April 1997. The contributions, mostly

¹ Hawkins 1998.

²I.e., Penelope Mountjoy’s (1998) study of the east Aegean-west Anatolian interface, and Christopher Mee’s (1998) update of his 1978 article on Anatolia and the Aegean.

³Mitchell 1998–1999, table, 125.

⁴For proceedings of the 1997 symposium, see *KST*19; *AraşST* 15; *ArhST* 13 (all published in Ankara in 1998); for 1998, see *KST*20; *AraşST* 16; *ArhST*14 (Ankara 1999); and for 1999, see *KST*21; *AraşST*17; *ArhST*15 (Ankara 2000). Publication of the proceedings of the 2000 symposium is planned for 2001.

about Holocene Anatolia, appeared in *Quaternary Science Review* 18 (1999).

Preliminary results from ongoing research at the Late Chalcolithic site Hacinebi Tepesi were presented at the SAA meeting at Seattle in March 1998. The urgent necessity of rethinking current approaches to the so-called Uruk expansion was reflected in all the papers, which are now published, with additional comments, in *Paléorient* 25 (2000).

For the prehistory of western Anatolia, two important conferences were "The Aegean in the Neolithic, Chalcolithic and Early Bronze Age," held in Urla/Izmir on 13–19 October 1997 and "Early Ionia: the state of research," held in Güzelçamlı from 27 September to 1 October 1999. Both of these conferences await publication.

At the "Uluslararası Kilikia Arkeolojisi Sempozyumu," held in Mersin on 1–4 June 1998, various aspects of Cilician archaeology from the Bronze Age to the Medieval period were presented and were published as volume two of the new journal *OLBA*. In May 1999, there was also a roundtable discussion hosted by the French Institute in Istanbul, "La Cilicie: Espace et pouvoirs locaux (2^{ème} millénaire av.J.-C.–4^{ème} siècle ap.J.-C.)," which awaits publication.

The chronology of the fourth and third millennia from the Caucasus to northern Syria was discussed at a roundtable symposium in Istanbul in December 1998.⁵ A symposium was held in Ankara in May and June 1999 to celebrate 50 years of excavations at Kültepe-Kaniş, and has once again focused attention on this important site.

Although only marginally related to Turkey, the publication of the Karanovo conference includes several contributions important for Neolithic research in western Turkey.⁶ Also, a conference on the Tishreen rescue project on the Syrian Euphrates, held at Barcelona in 1998, has yielded results equally important for current research in the area immediately to its north. The results have been published as a supplement volume of the *Aula Orientalis* series.

Museums. The reorganized exhibitions of the Museum of Anatolian Civilizations in Ankara received the "European Museum of the Year" award in 1997. The museum has a Web site at www.turey.org/tourism/ankara/ak_civil.htm. Other museums that have opened important new exhibi-

tions include the museum at Gordion and the ceramics collection of Izmir Museum.

Festschrifts and memorials. After a pre-Festschrift published by her colleagues and students in 1995 as "Readings in Prehistory: Studies presented to Halet Çambel," Halet Çambel also received a serious Festschrift with a rich variety of articles by friends, colleagues, and students.⁷ The untimely death of Sándor Bökönyi was commemorated with a memorial volume including articles on many of his favorite topics, written by the scholars with whom he had worked.⁸ The 50th anniversary of the British Institute of Archaeology at Ankara was celebrated with the edition of a volume summarizing all the excavation projects for which the Institute has been responsible during the last half century.⁹

The 100th anniversary of the German Archaeological Institute in 1999 was honored with an exhibition and a bilingual catalogue reviewing the Institute's engagement in Turkey.¹⁰

Journals and selected publications. *Anatolian Studies* (*AnatSt*), the journal of the British Institute of Archaeology at Ankara, has received a makeover. It still appears annually and publishes articles, largely in English, on the archaeology and related subjects of Turkey and the surrounding areas. These continue to be of a high standard but the journal itself now has a new format and cover. The first issue in this new format, volume 48 (1998), contains a number of important articles as well as shorter notes, whereas volume 49 (1999) is given over to the publication of the proceedings of the Anatolian Iron Ages Four colloquium, held in Mersin, 19–23 May 1997.

Another rebaptized journal is *Ancient Near Eastern Studies* (*ANES*), published by the University of Melbourne, which continues the series formerly known as *Abr-Nahrain*. The journal has received a complete update in format and style but will keep to its existing focus on the Near East and bordering areas. In his new role as editor, A. Sagona reports that the supplement series for the publication of substantial monographic studies will also continue.

Two new journal series have been introduced since 1997, the University of Mersin's Cilicia Archaeological Research Centre has published *Mersin Üniversitesi Kilikia Arkeolojisini Araştırma Merkezi Yayınları* (*OLBA*), which is dedicated to archaeological and epigraphic research in Cilicia and adja-

⁵ Published as Marro and Hauptmann 2000.

⁶ The proceedings are published in Hiller and Nikolov 2000.

⁷ Arsebük et al. 1999.

⁸ Anreiter et al. 1998.

⁹ Matthews 1998.

¹⁰ *Kayıp Zamanların Peşinde. Alman Arkeoloji Enstitüsü Anadolu Kazıları—Auf der Suche nach verschwundenen Zeiten. Die Ausgrabungen des Deutschen Archäologischen Instituts in der Türkei*, 1999.

cent areas. The Turkish Academy of Science (Tübitak) began its new annual journal series *Türkiye Bilimler Akademisi Arkeoloji Dergisi (TÜBA-AR)* in 1998.

Dam construction projects along the Euphrates and the Tigris/Ilisu have triggered a new wave of international rescue work coordinated by Middle East Technical University's TAÇDAM project (<http://www.metu.edu.tr/wwwmuze/html>). As with previous rescue projects, annual reports starting with the 1998 season are being published in a new bilingual series.¹¹

The inventory of archaeological sites in Turkey, *Türkiye Arkeolojik Yerleşmeleri (TAY)*, edited by S. Harmankaya, O. Tanındı, and M. Özbaşaran, now includes the Neolithic and the Chalcolithic period and is available online both in Turkish and English (<http://www.tayproject.org>). This enormous effort was honored with first place in the national Turkish competition for the Henry Ford European Conservation Award 1996–1997, given to volume 2.

The ambitious *Tübinger Atlas des Vorderen Orients (TAVO)* has recently been completed after more than two decades of study of the ancient Near East. A total of 296 maps, 130 supplement volumes, and 3 register volumes has been prepared, with 23 map sheets on geography and cultural anthropology, and 28 historical maps devoted wholly or partly to Asia Minor.

A useful collection of geographically arranged chapters by various scholars and excavators on the status of research on the Neolithic in Turkey has been assembled by editors M. Özdoğan and N. Başgelen.¹² An overview on Anatolia-Balkan relations has also been recently published by S. Steadman.¹³

In addition to these overviews, several topical studies also have appeared recently. Based on the painted pottery from Early Bronze Age sites on the Upper Euphrates, C. Marro was able to propose a detailed typological and chronological study of the Early Bronze Age in this region.¹⁴ The burial customs of second-millennium B.C. Anatolia were the topic of İ. Metin Akyurt's Ph.D. thesis, which, sadly, he could not complete himself. A final version of his thesis, revised by his teachers, has now been published posthumously.¹⁵ The ethnoarchaeology and recent history of Anatolia has been used by J.

Yakar to develop models on the socioeconomic organization for the Bronze and Iron Age tribal societies of Anatolia.¹⁶ The proceedings of the Anatolian Metal I conference, hosted by the Deutsches Bergbau Museum in Bochum, have been published.¹⁷ For the Bronze Age, important new general works include new studies by V. Soucek and J. Siegelova and P. Wattenmaker.¹⁸ Several important new site reports also were recently published.¹⁹

Electronic publications. A number of sites now have their own Web sites, including Liman Tepe, Panaztepe, Bakla Tepe, Boğazköy, Troy, Çatalhöyük, Sos Höyük, Kerkenes Dağ, and a number of other sites. The Internet addresses are included in the listings for these sites, given below.

The foreign research schools also now have Web sites, including the British Institute of Archaeology at Ankara (www.britac.ac.uk/institutes/ankara), the German Institute of Archaeology in Istanbul (www.dainst.de/de/abt/istanbul.html), and the American Research Institute in Turkey (<http://mec.sas.upenn.edu/ARIT>). These can provide foreign scholars with useful contacts and information about research, study, and travel in Turkey.

Other Web sites of interest to readers of this article include the award-winning Türkiye Arkeolojik Yerleşmeleri Projesi (TAY), which is now available online at <http://tayproject.eies.itu.edu.tr/>, the TAÇDAM–Ilisu Dam Web site: www.metu.edu.tr/home/wwwmuze/html_e/ilisu_yer/, and the Ministry of Culture's Web site at www.kultur.gov.tr.

MIOCENE

Paşalar. Between 1996 and 1999 Berna Alpagut, in association with British and American colleagues, continued excavations at the important middle Miocene fossil deposit of Paşalar southwest of Bursa. At 15 million years old, it is one of the oldest miocene deposits discovered in Turkey. The site revealed evidence for a mixed tropical and steppe environment providing for a variety of animals, including primates, classified as Sivanthropus. In the last few years, excavations have extended both north and east from those areas excavated previously and where the greatest thickness of fossil layers was reached, before fading out towards the northeast, causing a sharp decrease in the number of fossils.

¹¹ Tuna and Öztürk 1999.

¹² Özdoğan and Başgelen 1999.

¹³ *BASOR* 299/300 (1995) 13–32.

¹⁴ Marro 1997.

¹⁵ İ. Metin Akyurt, *M.Ö. Binde Anadolu' da ölü gömme adetleri* (TTKY VI. 49, Ankara 1998).

¹⁶ Yakar 2000.

¹⁷ Ü. Yalçın, ed. *Anatolian Metal I: Der Anschnitt* (Bochum 2000).

¹⁸ Soucek and Siegelova 1996; Wattenmaker 1998.

¹⁹ E.g., Seeher 2000; Umurtak 1996; Kaschau 1999; Waelkens and Loots 2000.

Among the species recorded, ruminants are the most abundant, followed by suids and carnivores. Hominoids were represented mainly by teeth and fragments of the postcranial skeleton. Anchitheria, small mammals, rhinoceros, hippopotamus, and remains of two different elephant species are represented in smaller numbers. Since 1996, a selection of representative faunal specimens have been placed on display in the Bursa museum.²⁰

Çankırı/Çorakyerler. From 1997 to 1999 the Çankırı Museum, supported by a team from Ankara University led by Ayla Sevim, carried out rescue excavations at the upper Miocene site Çorakyerler. The fossil-bearing sediments cut during the construction of the Çankırı-Yapraklı road had earlier been observed and reported by the Çandır excavation team. Excavations revealed remains of a rich late Miocene fauna dating to 10 mya, one of the less well known periods in Turkey. The species represented include giraffes, bovids, suids, cervids, two types of rhinoceros, equids, and elephants.²¹

Çandır. Excavations at the rich middle Miocene fossil beds of Çandır continued under the direction of E. Güleç. During 1996 and 1997, research focused on two slope sites, sites one and three, from the 1950s investigations by MTA. Both sites had originally been located in a different ecological niche, which was also reflected in the faunal assemblages. Site three, located on a steep slope, originally lay in a wooded environment close to a lake. Here, the majority of animal bones belonged to lacustrine species, especially artiodactyls. In contrast, site one had fewer artiodactyls but more carnivores and cervidae.

Much attention was paid to the complete discovery of fossils from the earlier MTA excavation dump from site three, and the use of continuous water-screening helped to add many smaller fossil remains to the collection.²²

Sinap Formation. Salvage excavations in the Sinap Formation continued in 1996–1997, sponsored by the Museum of Anatolian Civilisations in Ankara and under the guidance of Berna Alpagut, working with an international group of specialists. More than 100 fossil localities, identified in the past seven years by a systematic survey of northern Ankara province, now provide a unique biochronostratigraphy ranging from 15 to 1 million years ago. Re-

cent investigations concentrated on site 12, where a second primate skull, identified as *Ankara pithecus* and uncovered in 1995, has now been dated to 9.8 mya. Continuous fieldwork recovered more Miocene faunal remains comparable with the less well-preserved Paşalar material, but there were no further primate remains. The erection of official signposts around this large area will be very important for the future of this rich site by discouraging unauthorized digging. Conservation and restoration of the *Ankara pithecus* skull was completed in 1996, prior to being displayed in the Museum of Anatolian Civilisations. The researchers noted that its teeth had different characteristics to those of the original *Ankara pithecus*, the Sinap primate skull found in the 1950s.

A second focus for research was the Kavakdere area northwest of Yassiören. Here Neogene strata on top of the cliffs showed an increase in equidae, especially when compared to the slightly older site 12.²³

Özlüce (Muğla). The Miocene fossil deposit Özlüce was once again investigated by B. Alpagut during 1995–1996. The excellent preservation of the faunal remains below a thick layer of mud makes this site an outstanding archaeological feature of the Aegean region. After clearing a slope of its forest cover, a deep sounding was sunk to reveal the geostratigraphy of the site. Among the finds, an intact mammoth skull, complete with tusk, is particularly noteworthy. The immediate area around the fossil beds has already been declared a national park (Turolian Park), and a traveling exhibition will be sent to tour neighboring regions.

PALEOLITHIC

Sakçagözü (Gaziantep) Regional Project. The regional survey of Paleolithic and Neolithic sites conducted by A. Garrad and his team in this crucial northern border of the Great Rift Valley continued. As was already evident following the first season's work, this region was extensively used during the Lower and Middle Paleolithic but seems to have been much less densely occupied during the Upper Paleolithic. Another peak of site numbers occurred during the later aceramic Neolithic period, when the environmental conditions in this high rainfall area favored the process of sedentism.²⁴

²⁰ Reports by B. Alpagut have appeared in *KST* 19 (1998) 1–15; *KST* 21 (2000) 1–10.

²¹ A first report has appeared in *KST* 21 (2000) 51–4.

²² Annual reports appeared in *KST* 19 (1998) 73–85 (season 1996); *KST* 20 (1999) 55–62; *KST* 21 (2000) 11–13.

²³ For a brief summary of the results, see <http://www.dla.utexas.edu/depts/anthro/kappelman/sinapmain.html>.

www.dla.utexas.edu/depts/anthro/kappelman/sinapmain.html.

²⁴ For a report on the 1995 season, see *AraşST* 14 (1997) 313–23 and *AnatSt* 46 (1996) 53–81; a summary on the 1995 and 1996 seasons can be found in Matthews 1998, 7–16.

Karkamish Palaeolithic Survey. This survey, which focused on the Paleolithic occupation in the Karkamish Dam rescue area and its immediate vicinity, was carried out over two seasons, in 1998 and 1999, on the eastern bank of the Euphrates.²⁵ H. Taşkıran and his team were able to document 35 findspots. Most of them were flat sites—workshops, stations, shelters—located on the higher old Euphrates terraces, on the slopes of the eastern hills, or on hill-tops overlooking the valley. No Paleolithic sites were found on the lower river terraces. Only three sites were mound or slope sites. The majority of the finds date to the Lower and Middle Paleolithic, with a workshop area producing Levallois cores identified at Almuşo Tepe. Upper Paleolithic sites could not be identified positively. Four sites might belong to the very end of the Upper Paleolithic or the Epipaleolithic period.

Birecik Palaeolithic Survey. A similar situation to that described above was encountered further upstream on the western side of the Euphrates. Here, three Paleolithic sites were located on the upper terraces between Horum Höyük and Belkis, which have been described in detail by L. Bourguignon and C. Kuzucuoğlu.²⁶

Üçağızlı Mağarası. Excavations in the important Upper Paleolithic cave site of Üçağızlı Mağarası on the southern slope of the Samandağı were resumed in 1998 as part of a larger Samandağı research project, under the codirection of E. Güleç and S.L. Kuhn and in cooperation with Hatay Museum. The new investigations began in the northern part of the cave, where the partly collapsed roof left only limited space for excavation. Here, previous research had focused on the southern area. Three cultural layers could be distinguished. On top, only remaining along the sides of the cave, badly preserved Epipaleolithic remains were found. The inventory of this layer included evidence for early Epipaleolithic industry with micro Gravette points and shell ornaments. Fish and shellfish, in addition to landliving mammals, were found. The second cultural layer contained a stone wall surrounding an ashy area, which might have been a grass-covered resting place. The early Upper Paleolithic material (35000–31000 B.P. cal.) shows an eastern Gravette component and is dominated by blades and bidirectional cores, with endscrapers and points comparable to Ksar Akil 17–16 and to the so-

called Aurignacian from Yabrud 4–5. More than 500 shell beads were recovered from this deposit, and grinding and pounding stones bear traces of ochre and reflect an interest in decorative materials. The lowermost layer reached belonged to the beginning of the Upper Paleolithic (41000–39000 B.P. cal.) and was characterized by a flake industry with endscrapers on flakes, large points, and unidirectional blade cores based on Levallois technology. This is comparable to the early Aurignacian from Ksar Akil 21–20. Only few shell ornaments were found. A human premolar from the same level was also recorded.

Karain and Öküzini. Excavations in Karain cave continued into their second decade under the directorship of I. Yalcinkaya, who plays host to an international team of prehistorians and archaeometry specialists. Investigations continued in the unexcavated parts of the main chamber E (“Kökten Hall”) and, since 1997, in chamber B.

Archaeometric analysis of stalagmites from the Middle Paleolithic geological layer II indicated that a humid and warm climate had existed, and this layer could be dated to 120,000–110,000 B.C. The underlying geological layer III revealed a sequence of superimposed living floors and hearths. Several Neanderthal bone fragments, a lower jaw, a broken femur and finger bones, and parts of a mammoth skeleton were retrieved from this layer. Faunal remains of hippopotamus were sampled for electron spin resonance (ESR) analysis, and these gave a date for layer III of 200,000 B.C. The lithic industry shows the well-known characteristics of the Karain Mousterian, with emphasis on Levallois technology and denticulated pieces.

Excavations in chamber B revealed two distinct Epipaleolithic and one Middle Paleolithic layer, under a thin cover of Holocene disturbance. Particularly noteworthy from the epipaleolithic level is an accumulation of debitage and a concentration of butchering debris with cutmarks on the bones. The lithics include a variety of endscrapers, points, and prismatic cores. Besides bone awls, beads made from shell and dentalium were abundant. Radiocarbon dates for these Epipaleolithic layers fall into the 17th to 19th millennium B.P. (uncal.) range.²⁷

The same team continued excavations at Öküzini where Epipaleolithic stratigraphy fills the chro-

²⁵ For a preliminary report on the 1998 season, see H. Taşkıran and M. Kartal in Tuna and Öztürk 1999, 74–80. A 1999 season report will appear in vol. 2 of this series.

²⁶ In *Anatolia Antiqua* 7 (1999) 265–83.

²⁷ For recent summaries, see *KST* 18 (1997) 1–10; *KST* 19 (1998) 17–45; *KST* 20 (1999) 23–37; *KST* 21 (2000) 15–28.

nological gap between the Epipaleolithic layers at Karain and the beginning of the Holocene. The lithics here revealed examples of monopolar prismatic cores and nongeometric microliths of distinctive types, which may be related to the Zagros Epipaleolithic. Intrusive graves from the Chalcolithic and Roman periods are concentrated next to the cave's entrance and disturb its upper layers.²⁸

Yarımburgaz Mağarası. G. Arsebük gives a summary on the 1988–1990 excavations of the Paleolithic layers at Yarımburgaz Mağarası.²⁹

EARLY NEOLITHIC

Southeastern Anatolia and Cilicia

Demirköy (Batman). In 1997, Michael Rosenberg embarked on a new research project on the aceramic site of Demirköy in the lower Batman drainage. Preliminary results from the four soundings conducted so far confirmed the hypothesis that Demirköy would fill the chronological gap between the upper layers at Hallan Cemi and the basal occupation at Çayönü. Two trenches revealed clusters of material but no features. It seems that this lowland site can be understood to be the relocation of the original Hallan Cemi population since these two sites are the only aceramic ones to be recorded in the Batman drainage. Similarities in the material culture of the two sites might indicate continuity, but there are also strong dissimilarities between the two. The most striking difference is a sharp drop in the use of obsidian, which shows that Demirköy was apparently cut off from the obsidian distribution network that supplied Hallan Cemi. A major innovation was the use of sickle blades and of plastic material, both clay and bitumen, for the production of small objects and probably for vessels and figurines. Intramural burials were another new feature, and these included one adult, one child, and one dog.³⁰

Çayönü. Several contributions on Çayönü appeared in *Light on Top of the Black Hill*.³¹ E. Bıcakcı uses the Çayönü data for an update on the Taurus PPN chronology (137–50); V. Broman Morales contributes a piece on house models (195–8); I. Caneva, C. Lemorini, and D. Zampetti present data on lithic analysis (199–206); M.K. Davis discusses set-

tlement structure (257–66); T. Efe presents bone tools (289–304); M. Özdoğan and A. Özdoğan discuss the cult buildings (581–602); and A.R. Wood revises blood residues (763–4). More detailed data on the lithics are presented by M.R. Iovino and C. Lemorini.³²

Göbekli Tepe and Gürcütepe. After preliminary soundings in 1995, Harald Hauptmann of the German Archaeological Institute in Istanbul and his field director Klaus Schmidt, in association with Şanlıurfa Archaeological Museum, began systematic excavations at the stunning early Neolithic site Göbekli Tepe and the complementary site of Gürcütepe.

The ca. 15 m high tell of Göbekli Tepe marks one of the highest points of the Germeş Dağları, on the northern border of the Harran plain. A topographic survey of the surrounding limestone plateau revealed many traces of Neolithic quarrying and unfinished or broken pieces, such as column bases, found in situ within 1 km of the site. Most remarkable is a 7 m long T-pillar with a 3 m wide head, which had been left in the quarry.

Excavations concentrated on two areas of the tell. In the southern depression, the uppermost layer consisted of a building with six rectangular rooms, each room containing a pair of T-shaped pillars. This so-called *Doppelpfeilergebäude* (Double Pillar building) lay over an older building complex with curved dry stone walls. This had two building phases and relief pillars. This complex is called the *Schlangenpfeilergebäude* (Snake Pillar building), after the relief on pillar one. A second pillar bears a relief of superimposed animals and another one of a jumping fox. Radiocarbon dates of 9200 b.p. for the *Schlangenpfeilergebäude* confirm that it is dated to the early aceramic Neolithic, therefore predating Nevalı Çori.

Parts of a later building adjacent to the *Schlangenpfeilergebäude* were uncovered in 1999. One wall was formed by a semicircular row of relief pillars arranged around two central pillars, one of which has a pair of foxes in relief. The other pillars show a group of partridges, in front of which is probably a net and a boar. A terrazzo floor partly covers the fox reliefs, demonstrating that

²⁸ For recent reports, see *KST* 18 (1997) 11–16; *KST* 19 (1998) 47–71; *KST* 20 (1999) 39–54; *KST* 21 (2000) 29–36. A comprehensive summary with a special focus on art has been published by Otte et al. (1995). A brief survey on the Antalya and Alanya caves has been published by E. Güleç in *AraşST* 15 (1998) 247–54.

²⁹ See *TÜBA-AR* 1 (1998) 9–25.

³⁰ A summary on the 1997 season appeared in *KST* 20 (1999) 249–57 and in *Anatolica* 24 (1998) 195–201.

³¹ Arsebük et al. 1999.

³² See *TÜBA-AR* 2 (1999) 139–53. Annual reports on the progress of these studies can be found at <http://www.oj-uchicago.edu/OI/PROJ/PRE/Prehistoric.html>.

the relief pillar must belong to an earlier phase of the building, which will be excavated in the next season.

Another building excavated on the southeastern summit is younger and represents the latest building layer on the site. It consists of a rectangular room with dry stone walls, in parts preserved up to the roof, and two pairs of T-head pillars arranged symmetrically inside. Within the walls, numerous earlier pillar fragments had been reused. Two of the central pillars bear reliefs of a jumping lion, and therefore the building is dubbed the *Löwenpfeilergebäude* (Lion Pillar building). Its floor was made from a terrazzo plaster. A picture of a woman—the only female representation found so far—incised on the sill between two pillars is thought to be secondary. Lithics are characterized by PPNA (Kham, Helwan, and Aswad points) and early PPNB (Nemrik, Byblos, and Nevalı Çori points) forms. Ground stone tools include incised stone vessels and pestles, double-hole spacer beads, and buttons with a diagonally pierced handle. Faunal remains derive entirely from wild animals such as aurochs, gazelles, wild pigs, foxes, and onagers. So far, no botanical remains could be retrieved.

An important step toward the protection of these important Neolithic remains in situ was taken in 1999 when the moveable roofs were constructed. These now cover a total area of 300 m².

On the Harran plain, Gürcütepe I–IV is a cluster of four shallow mounds lined up along a perennial watercourse. All four mounds were tested with soundings, revealing evidence for an extensive late PPNB settlement on all four mounds with no indications of earlier or later occupation, except for intrusive late Roman tombs on mound II. Investigations focused on the highest of these mounds, mound II, which stands 6 m above the level of the plain. Two layers of rectangular buildings with internal subdivisions built from pisé walls, some of which have stone foundations, were unearthed. One massive building stood out from the others because of the use of orthostats. Soundings on mound III also revealed traces of rectangular buildings. On mound I, a clay platform with central hearth and roasting pits was uncovered.

The lithic inventory comprises Çayönü tools and sickle blades as well as Byblos and Palmyra points, therefore suggesting a date later than Göbekli Tepe,

somewhere in the late aceramic Neolithic period. The spectrum of faunal remains is much more restricted than that of Göbekli Tepe, and domesticated sheep and goat occur. Therefore, the two sites illustrate two different stages in the evolution of agriculture: Göbekli Tepe is an early Neolithic site used by a complex hunter-gatherer society with a strong religious belief system. Gürcütepe, in contrast, seems to have belonged to a fully sedentary Neolithic community that was familiar with all aspects of early agriculture and animal husbandry.³³

Akarçay. Akarçay Tepe is a shallow Neolithic settlement mound on an alluvial terrace on the eastern side of the Euphrates within the Karkamish Dam rescue area. Salvage excavations by a Turkish-Spanish-Japanese team began in 1998 under the scientific coordination of Istanbul University, together with the Universities of Barcelona and Tsukuba, and revealed a long Neolithic cultural sequence.

Today, Akarçay Tepe appears as a single elongated mound rising 6 m above the level of the alluvial terrace. Apparently, the site consists of two mounds, with an older aceramic occupation in the east, from where the settlement later expanded toward the west, where a second mound formed. Excavations on the eastern mound have revealed three layers of aceramic architecture. The oldest building, building G, was a rectangular mudbrick building with internal buttress walls that had been completely emptied at the time of its abandonment. The next stage was represented by a circular wall fragment that runs under the foundations of building B in the upper layer. The upper phase consisted of two rectangular single-roomed buildings (B and C) with stone walls and a third small single-roomed building (E) that had massive walls. In the fill of buildings E and C, and over the open area, flat limestone fragments with incised patterns were found.

On the western mound, the oldest pottery Neolithic occupation phases are represented by hardened surfaces, pits and postholes, and open-air working areas found in the stratigraphic sounding. The preserved architecture of the upper layer of the larger squares consists of two multiroom buildings (A and F), each of which had cell-like internal divisions, separated by a corridor. The walls are made from mudbrick, with stone foundations limited to the outer walls only. A combined chrono-

³³Initial preliminary reports appeared in *MDOG* 130 (1998) 17–49 and *IstMitt* 48 (1998) 5–78. A catalogue of the sculptures is published in *IstMitt* 49 (1999) 5–21 and a further dis-

cussion of the art is found in *TÜBA-AR* 3 (2000) 1–14. For a general assessment of the Neolithic in the Urfa region, see Hauptmann 1999.

stratigraphy of the site has now defined six settlement phases. The earliest phases (VI to IV) correspond to the middle to late PPNB and are characterized by bipolar blades and Byblos points made from local flint. These types decrease in number towards the end of the PPNB, when pottery is introduced gradually with the characteristic "Black series" in phase III. Probably following a gap in the sequence, the full PN is represented by series of coarse ware and thick-walled fine ware in phase II. Phase I shows a variety of fine wares with paint and incised/impressed decoration and a coarse ware with heavy chaff temper that includes husking trays.³⁴

Mezraa Teleilat. The shallow mound of Mezraa Teleilat is located 5 km south of Birecik on the left bank of the Euphrates within the Karkamish rescue area. Since rescue excavations under the direction of M. Özdoğan began in 1998, the site has produced a long stratigraphic sequence for the Neolithic period.

The topography of the site underwent massive alterations when its northern part was leveled for irrigation. Consequently, excavations concentrated on the southern part of the mound, where an area of 1600 m² was exposed over 10 trenches and 2 soundings. The unexpected results from these trenches once again show how misleading surface data can be. Even though no Iron Age material had been recorded during the systematic surface collection in 1998, the upper building level proved to be a monumental Iron Age building with three building phases that had been completely emptied before its abandonment. Below the Iron Age layers (cultural layer I), a thick deposit of Pottery Neolithic debris layers (cultural layer IIA1–4) without any architectural remains was encountered. Late Neolithic buildings might, however, have existed in the area still covered by the Iron Age building or might have been cut away when the area was leveled off for the construction of that building. The four phases distinguished within the 2 m of Pottery Neolithic deposit provide a comprehensive picture of the pottery development from the beginning to the late Neolithic-Halaf transition. The pottery combines impressed and painted decoration and can be compared with both Mediterranean and Anatolian sites. The lowermost PN layer, IIA4, is characterized by coarse chaff-tempered fabrics, to which finer fabrics are added in the later layers. Layer

IIA3b/a had mainly impressed, incised, and combed decoration, and red painted bands were rare. In layer IIA2b/a, an emphasis on red paint used for linear and simple geometric pattern replaced the earlier impresso-dominated assemblage. Dark monochrome vessels with burnished surfaces form a second group characteristic for this layer. Husking trays and incised Hassuna-related fragments occur in IIA2a. Layer IIA1's orange colored pottery with shiny red paint is thought to represent the transition to Halaf.

Below this deposit of PN debris layers, the preceding occupation (layer IIB, considered PPN–PN transitional) was represented by four rectangular multiroomed buildings. The walls, built in the dry stone technique, were preserved up to 1 m high. The upper part, which was not preserved, might have consisted of mudbrick. The interior of the houses was divided into small cells probably forming a substructure for an upper living floor, which has not survived. Open courtyards were used as open-air working areas, and knapping workshops were recorded between the houses. A group of stone vessels was found in one room.

True PPN layers (layer IIC) could only be investigated in two limited soundings. The architecture uncovered in these layers had the same orientation as that in the succeeding layer, but it is constructed from larger stones probably as a result of a different layout with larger rooms.³⁵

Central Anatolia

Kaletepe/Kömürcü. After several seasons of survey work on obsidian sources in Cappadocia had allowed the identification of several Neolithic workshop areas, N. Balkan-Atlı and M.-Cl. Cauvin together with a Turkish-French team set off in 1996 to systematically survey and excavate one of these workshops at Kömürcü-Kaletepe, high on a slope north of Göllüdağı.

Work began with the cleaning of a river-cut section where more than 6 m of stratified deposits containing obsidian debitage could be traced. Radiocarbon samples from this section suggest a date of 4800–4600 B.C. (cal.) for the uppermost and of 8000 B.C. (cal.) for the lowermost layer. Therefore, the earliest Neolithic use of the place can be dated to the middle PPNB. Soundings on the slope above revealed different Neolithic knapping areas dis-

³⁴ For a summary of the 1998 season, see N. Balkan-Atlı, A. Erim-Özdoğan, and M. Özbaşaran in Tuna and Öztürk 1999, 74–80; a 1999 season report will appear in vol. 2 of the series, but this season has already been extensively covered in *Anatol-*

ica Antiqua 8 (2000) 227–55.

³⁵ For a summary of the 1998 investigations, see M. Özdoğan, A. Ayhan, and A. Demirtaş in Tuna and Öztürk 1999, 11–9. A 1999 season report is planned for vol. 2 of this series.

tributed over a wider area. Since 1998, work has concentrated on the section of a former earth quarry and adjacent trenches close to a rock outcrop further south. Here, knapping workshops of middle and late PPNB date were found stratigraphically superposed on one another. A row of stones aligned north-south in the top part of the trench might have been a wall for a shelter, erected around a knapping place. The lower levels produced paleolithic finds directly on bedrock. Interestingly, the Neolithic obsidian industry, which was based on naviform cores and bipolar technology, differs completely from contemporary production at Aşıklı Höyük. According to Balkan-Atlı, Kaletepe shows relations with the technological traditions of eastern sites such as Mureybit, Halula, and Dja'de, rather than with Aşıklı Höyük.³⁶

Aşıklı Höyük. U. Esin from Istanbul University completed a decade of salvage excavations at the outstanding aceramic site Aşıklı Höyük, on the east bank of the Melendiz River. A large exposed area of more than 4000 m² has given insight into the settlement layout of the upper layer 2, which is radiocarbon dated to 8000 B.C.

Work continued in the step trench on the north-eastern edge of the mound, where a sequence of 10 rebuilding phases from layer 2 and three further phases for layer 3 could be distinguished before virgin soil was reached. A silt layer between layers 2 and 3 indicates flooding between these two phases. The architecture seems to follow the same principles from the beginning of the settlement, without major changes. On the northeastern side of the mound, the continuation of the huge enclosure wall, made from tufa, and a probable gate was unearthened; however, no traces of an enclosure wall were found in the southeastern part of the site.

One building in the southwestern quarter, which was remarkable for its extraordinary layout, has now been fully exposed. In it, extremely broad walls were constructed from dry stone in a casemate technique, surrounding a large square courtyard. Its floor was carefully paved and traces of red and yellow paint were preserved. This building is believed to have had a religious function.

Initial results from lithic analysis show that most of the obsidian derived from the Kayırlı and Nenezi sources located about 20 km to the south. The raw material was brought to the site as complete blocks and all further knapping was carried out at Aşıklı itself. A major difference between layers 2 and 3 is the significant number of microliths in the lower layer.³⁷

To further protect the site, an open-air museum is being planned, in which the excavated areas on the top part of the mound will be conserved in situ and open to visitors.

Musular. Since 1996, Aksaray Museum, with the scientific assistance of M. Özbaşaran from Istanbul University, has conducted excavations at the flat Neolithic site Musular. The settlement is located opposite Aşıklı Höyük on the west bank of the Melendiz River on a slightly sloping tufa outcrop, which was partly terraced to provide a secure base for the settlement. Two phases of occupation and a third mixed surface layer have been distinguished. In the northern part of the settlement, only aceramic Neolithic layers have been exposed. In the central part, aceramic Neolithic remains are overlain by substantial late Neolithic architecture. The aceramic Neolithic settlement took advantage of pits and depressions in the bedrock and is therefore much better preserved than the later Neolithic layers.

In the central area of the settlement, rectangular buildings of the aceramic phase could be traced by their carefully prepared red painted and burnished plaster floors. The upper walls were probably constructed from mudbrick. In the northern part of the settlement, no complete buildings were preserved, but fragmentary surfaces and carefully set pebble concentrations are found. These might have been pit floors or roasting pits. The obsidian industry was based on bipolar blades and had two different traditions, one related to Kaletepe, the other one to Aşıklı. Dominant types are scrapers and leaf-shaped projectiles made by pressure flaking. Few specimens of Byblos points were found. The lithics analysis points to a date that is contemporary with the late occupation at Aşıklı, or slightly later, and which is now confirmed by a series of four radiocarbon dates falling into the range 8420 ± 110 to 7980 ± 220 B.P. (uncal.). Therefore, this

³⁶ Annual reports appeared in *KST* 20 (1999) 1–21; *KST* 21 (2000) 41–50. For summaries, see *Anatolia Antiqua* 5 (1997) 263–74; *Anatolia Antiqua* 6 (1998) 301–15; *Anatolia Antiqua* 7 (1999) 231–43; *Anatolia Antiqua* 8 (2000) 215–25. For a general assessment of the obsidian distribution, see N. Balkan-Atlı, D. Binder, and M.-Cl. Cauvin in Özdoğan and Başgelen 1999, 133–45.

³⁷ Annual reports appeared in *KST* 20 (1999) 101–14; *KST*

21 (2000) 71–80. For summaries on the first decade's results, see U. Esin in *AMMK* 1998 and Esin and Harmankaya 1999. On the lithic industry see F. Abbes, N. Balkan-Atlı, and M.-Cl. Cauvin, *TÜBA-AR* 2 (1998) 117–37; N. Balkan-Atlı in Arsebük et al. 1999, 81–94; the same volume has more contributions on Aşıklı: M. Özbaşaran on hearths, 555–66; M. Özbek on the skeletal remains, 567–80. The ecological setting of Aşıklı is discussed by U. Esin in *TÜBA-AR* 1 (1998) 95–103.

site will bridge the chronological gap between Aşıklı and Çatalhöyük. Faunal and paleobotanic remains indicate a fully developed village economy with sheep, goat, and cattle husbandry in which a variety of cereals, pulses, and fruits were exploited.

The architecture of the upper layer consists of a massive stone building with several rooms and a massive wall to the east, constructed from extraordinarily large limestone blocks. Gaps between these blocks were filled with smaller limestone pieces and tufa fragments. A long stone wall with a carefully built outer surface and an irregular inner surface was exposed on the slope east of the building. Two burials lay on the western side of this wall. Finds from this layer consist of monochrome burnished pottery vessels in simple shapes, straight sided open bowls, and short necked globular jars with almost no decoration. Özbaşaran compares them to material from Köşk Höyük, Can Hasan I, Güvercinkeyası, and Gelveri, thereby indicating a date toward the end of the Neolithic or the beginning of the Chalcolithic period.³⁸

Çatalhöyük. Continuous work at Çatalhöyük came to an apogee in a six-month season from April to October 1999. The intensive agricultural irrigation of the Cumra plain had caused a major drop of the groundwater table, thereby threatening the earliest cultural deposits at the site with dehydration. Archaeological research was therefore concentrated on the site's earliest settlement layers. Conservation measures to prevent further dehydration include the construction of an irrigation trench surrounding the site that is expected to stabilize the groundwater level in this area.

North of the mound a bulldozer trench ("Kopal area") was cut to reveal traces of the earliest off-site occupation. The lowermost level revealed an irregular lake marl surface with pits created by systematic quarrying of the lake marl. A layer of rubbish deposits overlay these quarry pits.

Surprising results were obtained from a restricted part of the southern "Mellaart area": below the lowest level reached by Mellaart, which is now radiocarbon dated to 7500 B.C., the earliest occupa-

tion layers were reached at a much higher level than had been expected. Therefore the beginning of the Neolithic settlement at Çatalhöyük must be dated later than was previously thought. The lowest occupation layers had traces of occasional fires and traces of lime preparation directly above the lake marl. As in the Kopal area, the lake marl had been quarried. These areas were periodically flooded by the Çarşamba River. According to S. Farid, the lithics from the lowest occupation are comparable with the microlithic assemblage from Aşıklı. No pottery is found in these layers.

In the upper layers of the Mellaart area more buildings of the pottery Neolithic levels VII and VI were exposed. A fragment of a wall painting with a diamond pattern—the first wall painting to be found since the excavations were resumed in 1995—was preserved in building 2. The same building also yielded small obsidian hoards next to the oven area. From the superimposed buildings 6 and 17, a number of child burials in baskets woven from wild grass were reported. Grass pollen from the basket residues appears to indicate a time of death in late spring.

On the northern summit of the mound, excavations in the "Bach area" continued with further work on building 3. This is a two room building with one big and one small room and a total of seven platforms. Directly on the floor two human skulls and a *bucranium* were found. Traces of red wall paint were preserved in a corner.

A great deal of emphasis was placed on conservation and protection measures. The wall painting fragment and one of the child burials were conserved for display at the Konya museum. On the summit, a moveable tent and a visitor's gallery were erected over the remains of house 5. This allows visitors to see an open trench year-round and it can be moved to another position in future, if necessary.³⁹

LATE NEOLITHIC AND CHALCOLITHIC

Southeastern Anatolia and Cilicia

Ziyaret Tepe. Surface survey in 1997 suggested that there was a small settlement here in the late

³⁸For a summary on the 1996 season, see *AraşST* 15 (1998) 199–217; on the skeletons, *ArkST* 13 (1998) 161–73; a report on the 1998 season appeared in *KST* 21 (2000) 81–92. For a general summary, see M. Özbaşaran in Özdoğan and Başgelen 1999, 147–55.

³⁹An annual report appeared in *KST* 18 (1997) 17–22. Season summaries, newsletters, and even trench diaries are available on the Internet at <http://catal.arch.cam.ac.uk/catal/catal.html>. For a flash on the 1999 season results, see *Science*

286, no. 5441:890–1. For annual reports, see *Anatolian Archaeology* 1 (1995) 3–5; 2 (1996) 6–7; 3 (1997) 4–5; 4 (1998) 8–10; 5 (1999) 4–7. A brief summary of the objectives of the new excavations can be found in Matthews 1998, 43–51; the second volume on the Çatalhöyük project, including the first results from the new excavations, has been published (Hodder 2000). On the lithic analysis, see Conolly 1999a, 1999b. Several articles on Holocene geomorphology of the Konya Plain can be found in *Quaternary Science Review* 18/4–5 (1999).



Fig. 4. Arslantepe, stone chamber of the Royal Tomb. (Courtesy M. Frangipane)

Neolithic/early Chalcolithic period. For a full report on the later periods of the site, see below, under “Bronze Age: Southeastern Anatolia and Cilicia.”

Norsuntepe. Three articles on stratigraphy and chronology appeared in *Chronologies des Pays du Caucase et de l’Euphrate aux IV^e–III^e Millénaire*:⁴⁰ G.M. di Nocera on radiocarbon dates (73–93); S. Gülçür on the Chalcolithic pottery (375–418); and H. Hauptmann on the Early Bronze Age cultural sequence (419–38).

Arslantepe-Malatya. During the 1996 to 1999 seasons, excavations at Arslantepe, directed by M. Frangipane, focused on the Chalcolithic periods VIII–VIA and on an EB I chamber tomb that belongs to early period VIB (see figs. 4–7). Most importantly, buildings that illustrate the transition from VII to VIA through their successive building stages have been uncovered.

Modest domestic houses of period VIII with some in situ material were unearthed on the lower terrace on the northwest part of the mound. Under the floors, two intramural child burials had been deposited in jars. One room stands out because of its thicker walls, which included a niche. Traces of wall painting are preserved on the plaster. Period

VIII diagnostic pottery is characterized by a large amount of bowls with scraped outer surfaces, which appear to be related to the well-known Coba Höyük type, and by a special variety of incised pottery. Radiocarbon dates obtained from the buildings place them between 4300 and 4000 B.C. (cal.), that is, at the end of the Ubaid period or the transition to the late Chalcolithic period.

Architectural remains of period VII/VIA have been uncovered in two areas of the western mound. On the upper terrace, three long rectangular rooms have been unearthed. All were in use over a considerable period of time as the floors of the buildings were renewed. The pottery assemblages found on the succeeding floors clearly illustrate the transition from VII to VIA. Red-black burnished ware with transcaucasian traits makes its first appearance on the upper floors, thereby firmly dating the first transcaucasian contacts at Arslantepe to the end of VII or the very beginning of VIA. Small finds from this area include obsidian arrowheads, steatite pestles, and numerous beads, probably from a workshop context. More evidence for the VII–VIA transition comes from an area further to the west, where a monumental building of the well-known two-room type, so far the oldest public building found in Arslantepe, has been uncovered. Pottery on the floor consisted of hundreds of string cut base bowls that had been turned over and piled in huge stacks, together with a few red-slipped vessels. A group of clay sealings was found on the floor of the side room. A wall painting in red and black shows a vessel with water flowing from both sides, a motif not previously encountered at Arslantepe.

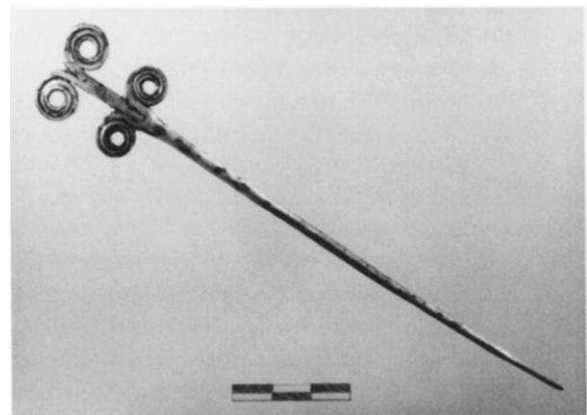


Fig. 5. Arslantepe, silver pin from the Royal Tomb. (Courtesy M. Frangipane)

⁴⁰Marro and Hauptmann 2000.



Fig. 6. Arslantepe, one of the Transcaucasian type vessels from the Royal Tomb. (Courtesy M. Frangipane)

A pit was cut into the southwest wall of this building when a chamber tomb was constructed on this part of the mound during the beginning of phase VIB1. The deceased deposited in the chamber was accompanied by a rich collection of metal objects, jewelry such as double spiral head pins and coils, weapons, and vessels made from copper, silver, and gold, and by two groups of pottery vessels combining both red-black burnished ware and reserved slip pottery. The chamber was covered with large limestone slabs, upon which the skeletons of four adolescent individuals were found, each with personal adornments of a similar type to those worn by the occupant of the main burial chamber. Analysis of the metal objects shows evidence for the use of unusual alloys such as arsenic copper alloys with nickel and of silver-copper alloy.⁴¹

Boztepe. Investigations at Boztepe in the Upper Tigris–Ilisu rescue area were begun 1999 by B. Parker. The late Halaf settlement was located on a natural hill east of a spring. On the south side of the mound, soundings below a massive Iron Age overlay revealed surfaces and living floors but no com-

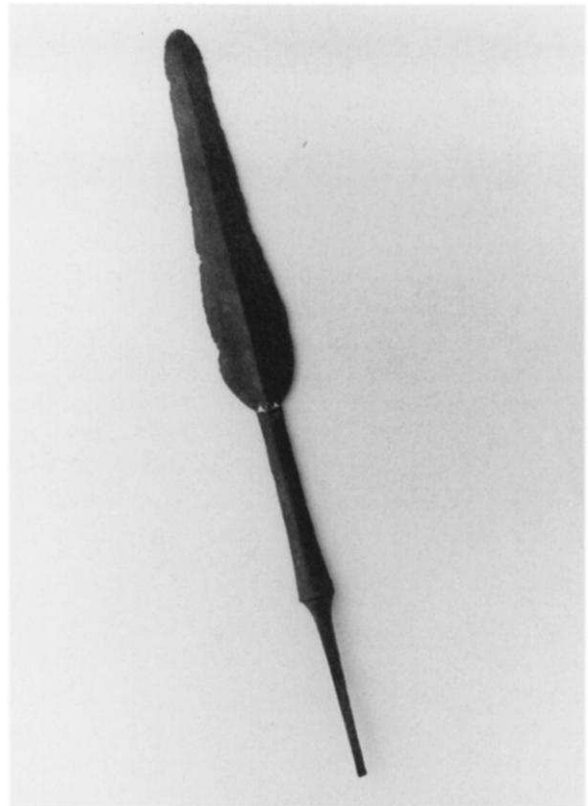


Fig. 7. Arslantepe, a silver inlaid copper spearhead from the Royal Tomb. (Courtesy M. Frangipane)

plete architectural structures. On the summit, four burials belonging to a Halaf period cemetery were unearthed.

Kazane Höyük. Excavations at Kazane Höyük, carried out by P. Wattenmaker in cooperation with Şanlıurfa Museum, concentrated mainly on the third-millennium B.C. urban expansion layers, summarized below. The wide distribution of Halaf pottery over large areas of the lower town had already been noticed during earlier survey work, and the site has since been listed as one of the major Halaf centers. In 1996–1997, four soundings in the southeastern part of the third-millennium B.C. lower town and a fifth sounding toward the southwest were dug in order to test this assumption. The later sounding revealed evidence for a late Neolithic occupation apparently located next to an ancient watercourse. Fragmentary walls and surfaces are the only structural remains of what was probably an open-air area on the outskirts of the prehistoric vil-

⁴¹ Annual reports are published in *KST* 19 (1998) 291–309; see *ArkST* 13 (1998) 115–21 on analysis of the metal objects from the tomb. The faunal resources and subsistence strategies have been discussed by M. Frangipane and G. Siracusano

in Anreiter et al. 1998, 237–46. A comprehensive review of the VII–VIB sequence is given by Frangipane (2000, 439–71); for radiocarbon dates, see di Nocera 2000. On the Bronze Age levels at the site, see di Nocera 1998.

lage or camp. The four soundings in the southeastern quarter of the outer town revealed a partially preserved *tholos* of late Halaf date and a series of paved pebble floors. Wall fragments and unconnected surfaces were also encountered. Drill samples taken from the bottom of one sounding indicate that there are another 3.5 m of cultural deposits, suggesting a considerable length of occupation.⁴²

Tilbes Höyük. This Spanish-Turkish project began in 1996 under the direction of J.G. Fuensanta of Alicante University and Adnan Misir of Urfa Museum. J.G. Fuensanta reports on the 1996 season:

Tilbes is the largest mound to be flooded on the Urfa bank of the Euphrates River and has remains that are critical to explaining a number of interesting cultural-historical issues. The Tilbes Salvage Project is focused on the fourth and third millennia B.C., and this research emphasizes the Ubaid/pre-Late Chalcolithic and Early Bronze Age periods. One intensive survey was performed on the high mound and the area surrounding it. The 1996 trenches and soundings were focused on two different areas of the mound: the west area (sector A) and the south area (sector E). The proposed goals of the season were to get stratigraphic and chronological contexts from the Tilbes occupation. Any Ubaid occupation was revealed during the 1996 work but a long fourth-millennium occupation is also in evidence. The earliest Early Bronze Age appears to be one of the most important settlement periods at Tilbes. The late Early Bronze Age and beginning of the Middle Bronze Age could be one of the larger periods represented at Tilbes and the surrounding area. After the 1996 work, a mid first-millennium B.C. occupation (presumed Achaemenid/Hellenistic) appears to be of particular interest.

The Spanish-Turkish team was joined in 1997 by M. Rothman and continued with excavations at Tilbes and soundings at the neighboring mounds of Tilvez, Tilöbür, and Tilmusa until 1999, prior to the area becoming flooded in the spring of 2000. The combined results point to a massive Early and Middle Bronze Age occupation at Tilbes, preceded by Halaf and late Chalcolithic layers. Much later, most of these mounds were resettled during the later Iron Age and used until the Roman period.⁴³

Horum Höyük. Salvage excavations at Horum Höyük, located in the Birecik Dam rescue area, were completed in 1999, and the site was flooded in the spring of 2000. C. Marro and A. Tibet from the French Research Institute in cooperation with R. Ergeç and F. Bulgan from Gaziantep Museum concentrated on the excavation of Early and Middle Bronze Age remains on the eastern slope (discussed below).

On the upper part of the mound, considerable Medieval remains were found and excavated. These had, unfortunately, disturbed some of the underlying stratigraphy, but at the base of the mound, on the eastern side, it was possible to make a sounding that included a deep feature (probably a large well) that was cut through the original alluvial terracing. Here, Chalcolithic remains were encountered in and next to the presumed well that had been dug down to the water table, a total depth of 6.6 m. Apparently, all earlier (pre-third millennium) occupation in this part of the Euphrates valley had been destroyed by river erosion when the Euphrates changed its course sometime during the Holocene. The well is therefore the only remaining vestige of a pre-Bronze Age occupation at Horum Höyük. Later, during the fourth millennium, it became filled with tell soil, possibly because it was no longer in use because of a change in the Euphrates. Chaff-tempered pottery and painted pottery of Amuq D-F type as well as late Halaf painted pottery and stamp seals were collected from this fill. The pottery was a mixture of chaff-tempered and painted wares. The painted wares tended to be thinner (Halaf and northern Ubaid). The chaff-tempered wares were coarser and possibly ranged across the Ubaid into the Ubaid/Uruk transition. There was no chronological order to the pit filling, and all the pottery was mixed within the different time periods.⁴⁴

Hacınebi Tepesi. Rescue excavations carried out by G. Stein at the late Chalcolithic site of Hacınebi Tepesi were completed in 1997 after six seasons of fieldwork. A long indigenous development of the late Chalcolithic settlement ("precontact" phases A-B1) has become clear, whereas contact with the Uruk world only occurs towards the very end of the late Chalcolithic occupation ("contact phase" B2). Local

⁴² Annual reports appeared in *KST* 18 (1997) 81–91. For a report on the Halaf trenches, see Bernbeck et al. 1999 and <http://bingweb.binghamton.edu/~rberbec/kazane.html>.

⁴³ Annual reports appeared in *KST* 19 (1998) 227–44; *KST* 21 (2000) 157–66. More detailed reports have appeared in *Orient Express* 1997:2, 42–6, 62–3; and *Boletín de la Asociación Española de Orientalistas* 33:205–25. Tilbes Höyük has a Web

site at <http://muse.widener.edu/~msr0001/wwwtilbe.htm>.

⁴⁴ Annual reports appeared in *KST* 19 (1998) 251–75; *KST* 20 (1999) 219–40; *KST* 21 (2000) 167–84. For more extensive summaries on the excavation seasons, see *Anatolia Antiqua* 5 (1997) 371–91 (1996 season); 6 (1998) 349–78 (1997 season); 7 (1999) 285–307 (1998 season); 8 (2000) 257–78.

and Uruk-related features appear to have maintained a clear spatial distinction. Apparently, many structures associated with the lifestyle of a complex society were already well developed by the earlier part of the site's occupation. An enclosure wall, in parts preserved up to a height of 3 m, must have encircled the settlement from the early phases of its occupation. Adjacent workshop areas with evidence of copper processing were uncovered in the south-east trench. A sequence of huge platforms that also date to the early phase of occupation were exposed in the northern trench. During phase B2, small mudbrick houses with Uruk material were erected next to the platform. The western trench revealed three adjacent mudbrick buildings next to a large courtyard. The mound was abandoned at the end of the Middle Uruk period but was reused as a burial ground during the EB I period. Four stone cist graves exposed in the northern trench had the characteristic "champagne cups" known from other cemeteries in the Birecik-Karkamish area.⁴⁵

Fıstıklı Höyük. S. Pollock and R. Bernbeck from the State University of New York at Binghamton report:

Fıstıklı Höyük is located on the eastern edge of the Euphrates River floodplain, approximately 4 km south of the modern town of Birecik. It is small, low mound of approximately 0.5 ha and a maximum height of some 4 m. Work at Fıstıklı Höyük is being conducted as part of the Karkamish Dam salvage project, coordinated by N. Tuna of METU. The site was occupied principally in the earlier part of the Halaf period and was again used in Late Hellenistic/Roman times.

The 1999 excavations revealed portions of four tholoi, two small round buildings, and part of a cell-plan building. All of the structures were constructed of pisé, mostly built atop substantial stone foundations. The small round buildings had very hard, baked clay floors, whereas the tholoi seem mostly to have had more ephemeral, compact silt surfaces. Exterior surfaces were frequently littered with artifacts and animal bones, a striking contrast to the generally clean interiors of buildings.

In several cases, there was evidence of repairs of walls, indicated by small sections that consisted of pisé of a different texture or color than the remainder of the wall. These indications of repair, along with the presence of superimposed floors in some

buildings, suggest that these structures were used for some time. On the other hand, there is evidence for only one major building level in almost all of the excavated units, indicating a relatively brief duration of use for the site as a whole. In addition to architecture and exterior surfaces, our excavations encountered two large, deep middens in different parts of the site. Both date to the Halaf occupation of the settlement.

Halaf pottery from Fıstıklı includes both thick-walled, vegetal-tempered, unpainted wares that are frequently burnished in a casual manner and thin-walled, mineral-tempered, painted wares. On the basis of preliminary analysis, we see the best parallels for the painted assemblage in Sabi Abyad level 3. The chipped stone industry seems to be primarily flake-based, although blades are also present. The majority of the raw material used is locally available chert; obsidian contributes only a tiny proportion. In addition to a full range of chert debitage, the chipped stone assemblage includes retouched flakes and blades, borers/piercing tools, scrapers, denticulated and notched tools, transverse arrowheads, and a very small number of sickle blades and burins. There is a large corpus of stone implements used for grinding, pounding, and rubbing. Some were shaped deliberately, whereas others are river pebbles that were used with little or no further modification. Three complete and one broken stone seals were recovered, along with a fragment of a sealing that bears a motif similar but not identical to one of the seals.

Plant and animal remains are under study. The faunal remains include domesticated cattle, pigs, sheep, and goats, and wild species that include red deer and gazelle. Plant remains include einkorn wheat (*Triticum monococcum*), emmer wheat (*Triticum dicoccum*), and barley (*Hordeum sativum*).

The site seems to have been abandoned sometime in the early part of the Halaf period and was not reoccupied for many millennia. When it was once again used, in Late Hellenistic to Roman times, it was mostly as a burial ground.⁴⁶

Zeytinli Bahçe Höyük. The first season of rescue excavations conducted by M. Frangipane and the Arslantepe team in 1999 revealed an unexpectedly long occupation sequence for the late Chalcolithic to EB I periods and a conical monument of later

⁴⁵ Annual reports appeared in *KST* 18 (1997) 93–120; *KST* 19 (1998) 179–207; *KST* 20 (1999) 183–213. For more extensive preliminary reports on the last two seasons, see *Anatolica* 23 (1997) 111–71; *Anatolica* 24 (1998) 143–93. For the pottery sequence, see Pearce 2000. An SAA conference session

focusing on Hacinebi is published in *Paléorient* 25 (1999).

⁴⁶ A report on the first season has appeared in Tuna and Öztürk 1999, 81–90; season 1999 will appear in vol. 2 of this series. For the Fıstıklı Höyük excavation Web site, see <http://bingweb.binghamton.edu/~rbernbec/fistikli99/main.html>.

date located on the northern part of the mound (see below).

Zeytinli Bahçe Höyük is the largest mound within the Karkamish Dam salvage area, located 4 km south of Birecik on the left bank of the Euphrates. It covers an area of ca. 2.6 ha and has an elongated oval shape. The western side slopes steeply over more than 14 m to the present level of the alluvial plain, indicating severe erosion caused by the Euphrates river, which today is located 700 m away to the west. The lower of the two trenches placed on this eroded section revealed a long sequence of building layers that seem to date to the late Chalcolithic–EB I transition, followed by three layers of EB I occupation. Another 6 m of EB I deposit separate the lower trench from the upper one where five layers of substantial EB I architecture have been uncovered over a larger area.

Parallel to the excavation, an intensive survey, intended to support further research strategies, revealed evidence for noncontinuous occupation of the site in the Halaf period, the late Chalcolithic to Early Bronze Age, the Iron Age, and then later in Parthian-Roman to Medieval times.⁴⁷

Yarım Höyük. M. Rothman, in cooperation with Gaziantep Museum, carried out one season of rescue excavations at the small, half-eroded site Yarım Höyük, located within the Karkamish Dam salvage area on the western bank of the Euphrates. The site had been recorded during Algaze's 1993 survey as a Late Uruk–EB I settlement. Excavations proved the existence of at least two layers of scanty building, the remains of which were badly damaged by foundations and pits dug for a Hellenistic farmstead. Rothman compares the material found in the upper prehistoric building phase to the Kurban V assemblage and dates the lower layer to the Late Uruk period.⁴⁸

Tilbeshar. Late Chalcolithic remains from Tilbeshar are mentioned below.

Oylum Höyük. Engin Özgen and his team from Hacettepe University have, since 1995, been joined by Barbara Helwing on behalf of the German Archaeological Institute in Istanbul. During the 1996 to 1999 seasons, Chalcolithic and Bronze Age remains were exposed in two different areas of the mound.

On the eastern slope, directly below the step trench at the base of the mound, two soundings have been opened revealing evidence for a middle Chalcolithic–Amuq E occupation. Architectural remains were badly preserved and most of the deposits consisted of slope wash.

Much better results came from three small soundings at the western base of the tell, which revealed architectural remains of LCH 1 and LCH 2 date separated by a thick erosion layer. The lowermost layer exposed consists of a massive wall standing five courses high with a backfill of stones and worn Ubaid pottery sherds probably deriving from an older tell. The purpose of this structure remains enigmatic. It might have been part of a terracing against occasional floods from the nearby Akpınar Suyu river, or it might be part of a large platform construction. The most characteristic pottery form in the occupation layers is the coba bowl. The upper layers of the LCH 1 occupation include an open courtyard used as a domestic workshop, on the floor of which several inverted coba bowls, pestles with red pigment traces, and small flint cores were found. After an occupation gap, represented by massive slope erosion layers, a domestic house was constructed during LCH 2. Its inventory includes casseroles and hammerhead profile bowls. Under the floor, a total of five burials have been found: three simple hocker burials, one extreme hocker, and a pithos burial.⁴⁹

Domuztepe. Excavations at this amazing Halaf "megasite" continued as a joint project directed by S. Campbell and E. Carter until 1999. Four major areas (operations I to IV) were investigated with the main exposure in operation I. So far, three cultural phases have been distinguished by excavation, one of Late Halaf date and two that postdate the Halaf period. These latter are currently termed "Post-Halaf." The pottery from these phases resembles Halaf material in fabric and style but the decoration appears to borrow certain Ubaid traits.

The earliest levels were uncovered in the sounding, operation II, where a bulldozer cut the southeastern slope, exposing five layers. A building consisting of a rectangular room inside a round structure forms one of the excavated layers. Later, this

⁴⁷A report on preliminary surveys has been published by A. Deveci and Y. Mergen in Tuna and Öztürk 1999, 97–112; the report on the 1999 season is scheduled to appear in the second volume of this series.

⁴⁸A report appeared in *KST* 19 (1998) 277–90. For a full report, see *Anatolica* 24 (1998) 65–99.

⁴⁹An extensive preliminary report on the work carried out

up to 1996 has been published in *IstMitt* 47 (1997) 39–90. The Amuq E occupation below the step trench has also been recorded in *TAY* 3–Chalcolithic. A detailed description of the Chalcolithic features from the western terrasse has appeared in *Anatolica Antiqua* 7 (1999) 19–67. For preliminary reports see *KST* 18 (1996) 189–99; *KST* 21 (forthcoming).



Fig. 8. Stamp seals from Domuztepe. (Courtesy S. Campbell)

building was turned into a more standard rectangular building with small cell-like rooms. The combination of tholos buildings with rectangular structures can also be seen in the lowermost layer. Late Halaf pottery and stamp seals are among the artifacts recovered (fig. 8). Operations III and IV on the northwestern slope revealed only fragmentary prehistoric architectural remains. Animal bones were found scattered between fragmentary walls in operation III. A tholos with a well preserved hearth was found and recorded in operation IV. The material from the fill slightly postdates the Late Halaf period. The latest phase was encountered in operation I on the central mound, which is now the largest area to have been exposed. The uppermost phase here consists of a Medieval cemetery. The uppermost prehistoric layer had two rectangular rooms with pisé walls on stone foundations, adjacent to a central open area. East of this structure, a compound of four small tholoi was located (fig. 9). Below this building phase, a small tholos and parts of other structures were exposed. A pit with fine pure clay deposits is interpreted as a specialized structure for the levigation of potter's clay. Below this, a burial pit containing the skulls of at least 30 individuals together with scattered long bones was found. The fill of this pit consists of ashy soil that may derive from a

funeral ceremony that included a fire, even though the bones themselves do not show any signs of burning. Finally, another sounding, operation V, on the eastern side revealed plastered surfaces next to a rock concretion.

Another project of the 1997 season was a control survey of areas where systematic surface collection had already taken place in 1995. This was carried out in order to better understand the erosion processes and artifact densities found on a tell site that is under constant cultivation.⁵⁰

Amuq Valley Regional Project. Following in the footsteps of Braidwood's famous Amuq Project, the Oriental Institute's mission headed by A. Yener took on several projects in the region.

T. Wilkinson and T. Harrison continued their systematic survey projects of the Amuq plain, identifying both previously known sites as well as new ones. A total of 237 sites have been recorded, an increase of 50 new sites on the number recognized by Braidwood. The discovery of previously unknown third-millennium B.C. sites on the limestone plateaux east of the plain was one important outcome of the survey. New information on the environmental history of the area now allows us to recognize shifts in the course of the ancient river and subsequent changes in settlement locations. This proves the existence of a lake formed by the Afrin, Oron-

⁵⁰ Annual reports appeared in *KST* 18 (1997) 173–87; *KST* 20 (1999) 283–94; *KST* 21 (2000) 133–42. On the 1996 sea-

son, see *Anatolia Antiqua* 7 (1999) 1–17. For a thorough summary of the 1995–1997 seasons, see Campbell et al. 1999.

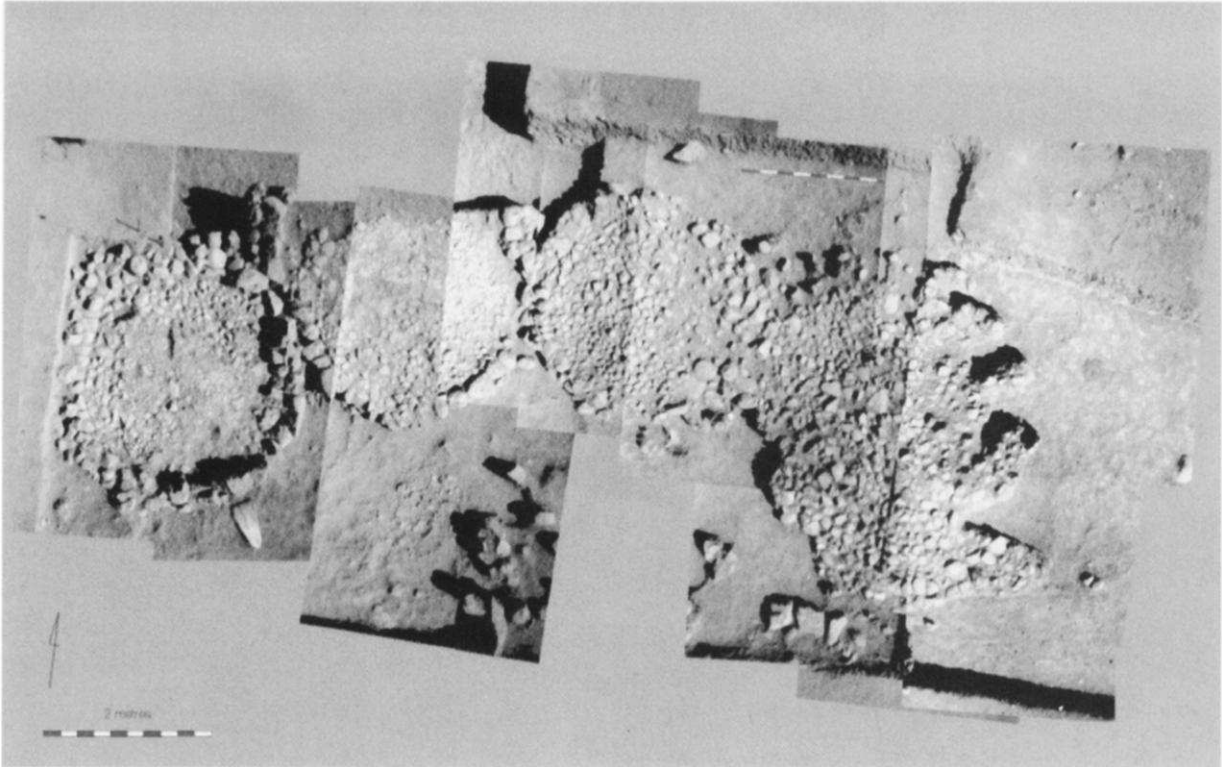


Fig. 9. Four conjoining tholoi from the latest phase of prehistoric architecture at Domuztepe. (Courtesy S. Campbell)

tes, and Kuruçay rivers during the third to first millennia B.C.

A visit was paid by members of MTA and Boğazıcı University to third-millennium B.C. mining areas in the Amanus mountains where arsenopyrite and chalcopyrite veins were documented at one of the Kisecik mines.

Tell Kurdu. After some test soundings in 1996, excavations at the huge Chalcolithic double mound Tell Kurdu were resumed in 1998 in response to massive bulldozing of the site. A magnetometer survey carried out on the larger parts of the site has revealed evidence for large building structures on the northern slope and pottery kilns on the eastern slope.

On the northern mound, soundings were dug in 1998 where several burials from an Ubaid period cemetery and the remains of a multiroomed building were uncovered. During the following season, two trenches were sunk into the western part of a building that had been located by magnetometry. A series of rooms bordering a large courtyard were uncovered. Three of the walls were extremely thick; they had been constructed from pisé, and some of them had an outer mudbrick shell and an interior white plaster finish. Installations such as ovens and benches were found in the building. Material associated with this build-

ing consists of Dark Burnished Wares and the local, Halaf-related Amuq C material.

A sounding on the eastern edge of the mound revealed a building with storage bins that overlay a partly uncovered round building with internal buttresses. Pottery on the floor dated from the Ubaid/Amuq E period. A step trench on the eastern side of the southern mound revealed a sequence of sloping ash and trash deposits running up against a partly preserved building. A rich harvest of sealings, tokens, figurine fragments, and beads was obtained from these trash deposits, which must be dated to the Amuq E period.

Also on the eastern slope, an industrial area with pottery kilns was also located by the magnetometer survey. The excavations that followed, across a 20 × 20 m trench, unearthed a series of kilns and wasters around an open courtyard. Three square and one round kiln were excavated, but more kilns are preserved in this area. The number of kilns and the amount of ceramic slag and wasters points to pottery production on a large scale, clearly outstretching production on a household level. Stone pestles and mortars with iron ore staining are probably related to the production of pigments used for painting the pottery.

On the southern summit, a large pisé building, with storage rooms that had a raised floor on a “grill-

like" arrangement of walls, and an adjacent platform were uncovered. Administrative items such as tokens, stamp seals, and sealings were found on the floor.

Soundings dug on the northern saddle and in selected areas at the base of the southern mound helped to clarify the topography of the site, which turned out to be smaller than was previously thought. The size of the Amuq E settlement is now estimated to be only 2–3 ha, and it seems that Braidwood's original estimate based on the depth of deposit on his trench I was greatly exaggerated by large amounts of slope wash. No Amuq E is found on the northern mound where Amuq D remains were encountered directly under the surface of the mound.

T.J. Wilkinson and A. Yener point out the possibility that Tell Kurdu, together with the roughly contemporary 24 ha site Tell 'Imar, 2 km further south, might once have formed one large center on both banks of the Afrin river.⁵¹

Kinet Höyük. Halaf sherds were collected from Medieval pits on the eastern terrace. The finds, which were subsequently redeposited in the Medieval pits, are thought to belong to a prehistoric occupation on the eastern terrace.⁵² For later periods at this site, see below.

Mersin/Yumuktepe. Investigations of the joint Turkish–Italian mission codirected by V. Sevin and I. Caneva at Yumuktepe/Mersin achieved new results that further our understanding of the site's topography. Using satellite images, important Holocene geomorphological changes could be traced, and the ancient course of the Efenk river east of the settlement could be established. It seems that neotectonic movements in this tectonically active area were responsible for the shift in the course of the river.

The altered site topography has important consequences for understanding the settlement layout. Access to the prehistoric site was probably from the plain toward the west, from where the mound rose gently toward the east. Tracing the overlapping late Neolithic and middle Chalcolithic terraces in trench A on the western slope and in trench K on the south confirmed this hypothesis. This allowed the ancient contours of the prehistoric mound, which had apparently been small and shal-

low, to be further outlined. The largely eroded western part of the mound postdates the Chalcolithic period. Also, the orientation of the Chalcolithic defenses uncovered by Garstang made use of the natural protection provided by the river to the east.

Excavations continued in three major areas. On the western slope, the new trenches south of Garstang's trench A produced further architectural remains of middle and late Neolithic date. The multiroomed building dating to phase XXVI or slightly earlier, which had already been excavated in the 1995 season, could now be completely exposed. It consisted of several rectangular rooms connected by a corridor. A previously uncovered cell structure might belong to the same phase and may be interpreted as an annex, possibly for storage purposes. Two large conglomerate blocks flanked the entrance of the building. A button-shaped seal with geometric incisions found in these layers recalls similar examples from Sabi Abyad. The late Neolithic layers are now distinguished into two subphases. In the lower subphase the architecture consists of massive stone walls with rounded corners. The second subphase revealed stone walls and a pebble platform with mudbricks on top, which is interpreted as a fortification building dating to ca. 5800 B.C. Approximately 800 years later, the foundation trenches of the middle Chalcolithic terrace wall cut these layers. This terrace wall was partly eroded by the river. Adjacent to the terrace wall, house floors with in situ cooking pots and andirons were found.

On top of the mound, Garstang's trench X was relocated and connected with the plans of the new trenches. Further excavation of the Chalcolithic "fortress" in layer XVI uncovered another massive gate facing west. One new house unit adjacent to those previously exposed was unearthed. The tripartite house on the citadel now continues further to the west. The newly exposed room is a domestic unit.

The Medieval fortification wall in area Z is now proven to have stood on top of an older mudbrick wall, which is now dated, according to pottery comparisons with central Anatolia, to the late Hittite period. Outside this fortification wall was located a terraced settlement. Below this, further Middle Bronze Age levels were found.⁵³

⁵¹ The annual field reports that appear in the *Oriental Institute News and Notes* are now available online at <http://www.oi.uchicago.edu/OI/PROJ/AMU/Kurdu.html>. For a report on the 1996–1997 surveying and sounding seasons, see *ArkST* 14 (1999) 97–112. The 1998 excavation season is summarized in *KST* 21 (2000) 185–92, and the survey results are in *AraST* 17 (1999) 127–32. The Holocene geomorphology of the Amuq plain is discussed by T.J. Wilkinson in *Quaternary Science Review*

18/4–5 (1999) 555–71.

⁵² See *KST* 20 (1999) 259–81.

⁵³ Annual reports appeared in *KST* 18 (1997) 23–41. The fifth anniversary of the resumption of excavations was celebrated with a booklet summarizing the main results (Köroğlu 1998). For a thorough discussion of the new results, see Caneva 1999; copper artifacts from the old excavations have been reanalyzed by Ü. Yalcın, *TÜBA-AR* 2 (1999) 111–28.

Eastern and Northern Anatolia

Sos Höyük. Excavations at Sos Höyük, carried out by A. Sagona, have so far revealed a stratigraphic sequence from the Medieval period down to the late Chalcolithic. Dates for all stratigraphic units are now confirmed by a series of radiocarbon samples that turn Sos Höyük into the most important chronological reference point in northeastern Anatolia.

Remains of the late Chalcolithic phase Va were uncovered on the northeast of the lower mound, where a huge circular stone wall had already been recorded during the 1996 season. Inside this wall, a round mudbrick house with a central posthole and a circular hearth was exposed. Twin horned andirons were lying on the floor, which was paved with crushed pottery. Light buff-brown and black burnished pottery was found together on the floor. The black burnished pottery had highly elaborate profiles and plastic decoration. Ivory beads with drill holes were found. Radiocarbon dates from this house fall into the 3300–2900 B.C. (cal.) range. The Bronze Age occupation is discussed below.⁵⁴

Central Anatolia

Güvercinkaya. After systematically surveying the Niğde-Neveşehir-Aksaray triangle for several seasons, Sevil Gülçur set out to excavate at Güvercinkaya in 1996. The Chalcolithic settlement at Güvercinkaya is located on top of a basalt ridge overlooking the right border of the Melendiz Suyu and Karasu confluence. Since the construction of the Mamasun Dam, the lower parts of the settlement are regularly submerged in springtime by the high waters of the Mamasun Dam.

The settlement falls into two parts, a shallow mound on top of the rock that forms an acropolis, and a flat part extending like a fan toward the north and east of the acropolis. At first, excavations focused on the lower terraces to the north and the east and later expanded toward the central settlement on the acropolis.

The architecture of the northern and southern terraces consists of radially arranged agglutinative subrectangular rooms made from dry stone walls set directly on bedrock. Circular holes inside the rooms are interpreted as postholes. Floors and walls are plastered with mud. Round hearths in the cen-

ter and domed ovens in one corner are standard installations. The arrangement of rooms into long rows with an outer wall constructed from extremely large stones evokes the impression of a closed, fortified settlement only accessible through two narrow passageways opening into the center of the settlement. The doorways to these corridors could be blocked with stones. In this outer part, no doorways giving access to the interior of the houses could be observed. In the 1999 season, another row of houses was exposed in the central settlement running along a road paved with gravel. Here, doorways in the houses opened directly onto the road. In a later phase, these doorways were again blocked with stones. One room held a remarkable amount of slag next to a large domed oven.

The bulk of the pottery collected from Güvercinkaya is a monochrome handmade, well-burnished fabric of black, brown, or grey-beige color. Decoration includes incised herringbone patterns and incised fields filled with densely arranged impressed dots. Relief decoration is rare. Gülçur compares this material to the early Chalcolithic layers of nearby Köşk Höyük, to Alishar, and to the material from Gelveri-Güzelyurt. A second group of pottery is a light-colored coarse fabric with a brushed or flint-scraped surface that is mainly used for conical bowls and that can be connected to the eastern Anatolian “coba bowl” tradition. Rare specimens of painted pottery hint at Ubaid influences. Two bichrome painted vessels were reported in 1999. A stamp seal might also be another indication of connections with the southeast.⁵⁵

Köşk Höyük. Aliye Öztan continued work at Köşk Höyük with an excavation season in 1996 and with restoration work in 1997. The early Chalcolithic kiln and copper working area exposed in layer 1, in the northeastern area, was further investigated and proved to have a sequence of six pebble floors. Next to it, a jar burial was dug into remains of the Neolithic period level 3. Radiocarbon dates now available for layer 1 (the early Chalcolithic period) fall in the first quarter of the fifth millennium B.C. In area 2, a large burnt building with beautifully preserved walls was completely uncovered. Deep niches were set into two of the walls, a platform was preserved in one corner, and an oven and a hearth formed the fix installations. The collapsed roof

⁵⁴ Annual reports appeared in *KST* 18 (1997) 137–43; *KST* 19 (1998) 245–50; *KST* 21 (2000) 143–4. For more extensive annual summaries, see *Anatolica* 23 (1997) 181–226; 24 (1998) 31–64. For the radiocarbon sequence, see Sagona 2000. The Sos Höyük Web site can be found at [http://www.sfca.](http://www.sfca.unimelb.edu.au/turkey)

[unimelb.edu.au/turkey](http://www.unimelb.edu.au/turkey).

⁵⁵ Annual reports appeared in *KST* 19 (1998) 85–111; *KST* 20 (1999) 77–100; *KST* 21 (2000) 55–70. For summaries, see *Arkeoloji ve Sanat* 78 (1997) 2–13 with color plates; *Anatolica* 23 (1997) 85–110; 25 (1999) 53–85.

sealed a rich assemblage of grey and black burnished pottery with interesting forms such as turtle vessels, box shaped vessels, and relief decorated jars.

Musular. For the late Neolithic occupation, see above.

Çadır Höyük. Excavations at Çadır Höyük were resumed in 1998 by members of the Alishar Regional Project because of the impending flooding of the area by the Gelingüllü Dam. A limited deep sounding on the southern slope allowed three Chalcolithic strata to be distinguished. The lower stratum, stratum III, revealed traces of two walls and a plaster floor. Stratum II had no architectural remains in the limited area exposed, but a previously excavated stone wall and the Chalcolithic enclosure wall are tentatively linked to this stratum. Stratum I had plaster basins and two child burials in jars. Domestic architecture and further burials from stratum I were exposed on a larger scale in two squares on the southern slope, under a thick accumulation of rock debris derived from the construction of a late Classical terrace wall. The entire sequence is characterized by black burnished pottery. Incised and dot-impressed ware was found in upper stratum I and is compared by R. Gorny to Alishar levels 17–12.⁵⁶

Boğazköy. Chalcolithic ovens from recent excavations at Büyükkaya are mentioned below.

Western and Coastal Anatolia including Thrace

Kemalpaşa-Ulucak Höyük. Here, the excavations carried out by Izmir Archaeological Museum, under the direction of A. Çilingiroğlu, continued on top of the mound in trenches O 11, N 11, and N 12 where late Neolithic/early Chalcolithic remains were found below the Bronze Age levels (about which, see below). A. Çilingiroğlu reports:

A total of 10 houses were documented. This building level was apparently destroyed in a conflagration; therefore, both in situ finds and architectural evidence are available for this period. The houses were made using two different techniques. Most of the walls were of mudbrick, although another smaller group made use of pisé.

Two buildings of late Neolithic/early Chalcolithic date were uncovered in trench N 11. One of these had a 50 cm wide door in its north wall and two platforms inside. A second building located to the north of the first was found immediately below the topsoil and was therefore in a bad state of preserva-

tion. This house appeared to be a domestic unit with installations associated with everyday activities. A 70 × 120 cm oval platform made from fired clay was located inside the house. Next to this, a flat basalt stone used as a grinding stone was set with plaster into a boat-shaped compartment. Several pestle stones were found on top of the grinding stone and in a corner next to it.

Two complete buildings of late Neolithic/early Chalcolithic date were unearthed in trench N 12. Inside one of these houses were two platforms, one along the south wall and one along the west wall. Pottery vessels and flint tools were found in situ on the west platform. Loom weights were lying next to the platform. In front of the south platform, a mortar and a pestle stone were found. A second flat stone, obviously used for the same work, was found further east, and round clay balls of unknown function were also found. An oven with slag inside and around it was located south of the house. Workshop areas and domestic structures were apparently located side by side in this area, and an interesting detail of the architecture is the use of wood and wooden branches as building materials.

Small finds and pottery from the buildings and workshops confirm their date as being in the late Neolithic to early Chalcolithic period. The pottery was made from brown, reddish-brown, and cream colored clay with fine sand, small stones, and organic temper, and had a light brown, reddish-brown, or brown slip. The vessels are usually well fired. Only a few pieces have any decoration, and two distinct decorative techniques can be distinguished. Either the vessels are painted, or they bear impressions of fingernails and notches.

Painted decoration was applied with brown or reddish-brown color onto a cream-colored slipped surface. One anthropomorphic vessel with reddish-brown paint on cream slip was reported from trench O 11. When compared to Hacilar I pottery, the painted decoration here uses simpler and less sophisticated patterns. The shapes include bowls with S-profiles, globular jars and deep bowls, bowls and plates with rounded rims, simple jars and high-necked jars, and jars with oval bases. Vertically pierced lugs and loop handles are abundant. Many vessels have oval bases, one of the characteristics of the late Neolithic pottery.

A second group of decorated pottery was found on the house floors; this group has surfaces roughened by either fingernail impressions or notches.

⁵⁶ For a preliminary report, see *Anatolica* 25 (1999) 149–83.

Compared to the Chalcolithic pottery found during previous seasons, the impressions on the Neolithic pottery are coarser and less well organized.

Among the lithic finds, blades and borers made from flint are abundant, while only a few obsidian tools are recorded. Everyday objects such as mortars and pestles, polished work stones, and axes are found inside the buildings. Terra-cotta loom weights and bone awls, which were probably used for leatherworking, complete the picture.

Bademağacı Höyük. Excavations at Bademağacı Höyük, conducted by R. Duru, continued in the northeastern area where seven early Neolithic building layers were exposed over the last four seasons. While the lowermost three layers (EN 7–5) consist of only a sequence of plaster floors, the upper four layers (EN 4–1) revealed significant architectural remains. Major attention was paid to layer EN 3, where five buildings have been uncovered. Houses were freestanding rectangular single-roomed structures with rounded corners, built from mudbrick with freestanding posts as roof support. A door in the center of one long wall gave access to the interior, and a hearth was attached to the wall opposite the entrance. One building revealed traces of red paint. One small rectangular building with six compartments seems to be a freestanding storage structure. Monochrome burnished, hole mouth jars with vertical spool handles and vessels with horizontally cut rims were the most characteristic pottery forms. Pintaderas and pressure flaked obsidian points occur. Based on these finds, Duru proposes a comparison with Çatalhöyük levels VII/VI for Bademağacı Höyük EN 4–3.⁵⁷

Bakla Tepe. In anticipation of flooding due to be caused by the Tahtalı Dam, Bakla Tepe in the Cuma Plain south of Izmir was subject to a joint rescue project from 1996 to 1998 by Ankara University and Izmir Museum under the direction of H. Erkanal. Below a Bronze Age settlement (see below), remains of an exceptionally large Chalcolithic settlement were brought to light.

Clustered behind a terrace wall, late Chalcolithic apsidal buildings with a grill-like internal structure were excavated. These grills apparently served

as a substructure for a floor made from wooden planks. Between the houses, cobbled courtyards with lots of smashed pottery found in situ were uncovered. Infant burials in jars were placed under the housefloors. Adults were buried in an extramural cemetery east of the settlement. The oldest layer reached dates to the early Chalcolithic and consists of round silos and platforms with cobbled floors. Inside a building with a curved wall, cylindrical stone objects, tools, and metal slag were found.

According to Erkanal, the Chalcolithic occupation at Baklatepe can be divided into four phases, which mirror the development seen at Kumtepe and which show ample evidence for Aegean relations.⁵⁸

Latmos Survey. Survey of this important mountain region continued under the direction of Anneliese Peschlow-Bindokat.⁵⁹

Beşik-Sivritepe (Troia). During the 1998–1999 season, the Troia team investigated the so-called Achilles' Tomb at Beşik-Sivritepe. M. Korfmann of Tübingen University reports:

The mound was built up uniformly in layers of stone, clay, and rubble from the Neolithic settlement. The old Neolithic surface from the fifth millennium, as it was before the mound was built up, was also investigated. The remains of a settlement with sherds, traces of burning, etc., may have been the reason why a monument was erected on this spot.⁶⁰

Ilıpınar. At Ilıpınar, J. Roodenberg completed work on the northern and central parts of the mound, where a long stratigraphic sequence for the Neolithic and Chalcolithic periods has been established. During the latter years of the project, attention shifted toward the southwestern part of the site, where architectural remains of the previously only poorly documented period V levels could be uncovered and the stratigraphic link between periods VI and V firmly established. A major change in the chronological terminology of the site is that the upper part of phase VI has been renamed VA, and phase V is now called VB.

In the western part of the mound, a phase VI building complex consisting of three rectangular

⁵⁷ Annual reports appeared in *KST* 18 (1997) 43–8; *KST* 19 (1998) 113–21; *KST* 20 (1999) 115–29; *KST* 21 (2000) 109–16. For a summary, see Duru 1999.

⁵⁸ The Web site of the Bakla Tepe excavations can be visited at <http://www.geocities.com/Athens/Forum/8635/bakla.html>. Extensive annual reports have been published in *KST* 18 (1997) 279; *KST* 19 (1998) 399–425; *KST* 20 (1999) 337–55; *KST* 21 (2000) 263–78. See *ArchST* 13 (1998) 103–14

on metal and slag analysis.

⁵⁹ Annual survey reports are published in *AraşST* 15 (1998) 373–84; *AraşST* 17 (1999) 279–86; for a summary, see *Arkeoloji ve Sanat* 20/84 13–22. See Peschlow-Bindokat 1996 for the history of the region, including color illustrations of the famous cave paintings.

⁶⁰ See *Studia Troica* 9 (1999) 28–9.

rooms in a row was uncovered. The remains of a collapsed gable roof had sealed the contents of a two-story house and had preserved pottery, clay bins, and mud-lined baskets on the wooden plank floor. Apparently, the ground floor had been used as a storage area, whereas the upper floor was used for processing food. Four successive phase V buildings, each of rectangular outline with internal compartments, were uncovered in the western area. With phase VB (6000–5400 B.C. cal.), heavier walls, a new type of fireplace, and black burnished pottery types were introduced. An open-air food processing area from phase VB, with four horseshoe-shaped burnt ovens, pisé bins, mud-lined wicker baskets, and pedestals for grinding stones, was uncovered over an 80 m² area.⁶¹

Menteşe Höyük. The shallow prehistoric mound *Menteşe Höyük*, on the fringes of the *Yenişehir* plain, was investigated in three short seasons (1995–1997) by J. Roodenberg and the *Ilıpınar* team in cooperation with the *Izık* Museum. In addition to severe destruction caused by a road-cutting and continuous plowing, the site also proved to be heavily disturbed by field voles; therefore, significant architectural remains could only be recovered below the rodents' activity zone. Below a late Roman occupation, from which came pottery fragments in the upper part of stratum 1 and a burial, three prehistoric strata could be distinguished in main trench SSK 15, close to the center of the mound. Stratum 1 consisted of a thick deposit of open-air occupation levels in the center of the prehistoric village marked by concentrations of artifacts and pottery. Several ditches had been dug for drainage purposes. The burials of three children and five adults had been dug from stratum 1, with the skeletons lying in flexed position on their right side. In one burial, traces of decayed wood were observed under the skull. Small vessels were placed in two of the burials. Grey and beige burnished pottery in carinated bowl forms recalls *Ilıpınar* VA examples. Stratum 2 was only ca. 30 cm deep and consisted of ash lenses that probably relate to a period when the mound was not in use as a settlement. Stratum 3 is the only layer with architectural remains. The western part of one house with mud slab walls interlaced with wooden stacks was excavated in the main trench SSK 15. Pottery from the

house floor closely resembles *Ilıpınar* X material. The southern boundaries of two further buildings with mud slab walls measuring 5.5 m and 6.5 m in length were uncovered in the western extension trench. A paved courtyard adjacent to the eastern building held several mud-lined baskets and square basins. According to cores taken in the center of the mound, another 3 m of deposits await excavation below stratum 3.⁶²

Kırklareli-Aşağı Pınar. The joint Turkish–German Eastern Thrace Project codirected by Mehmet Özdoğan and Hermann Parzinger continued with excavations at the Neolithic-Chalcolithic site *Aşağı Pınar*. Soundings northeast of the central area have helped greatly in understanding the topography of the site. At the bottom of these soundings, building levels predating AP 5 were uncovered. Apparently the original early Neolithic settlement was located northeast of the central excavation area, and only later did the settlement expand toward the southwest. Excavations in the central area, where only the later layers AP 2–5 exist, were completed, and several new large excavation trenches were opened in the northeast.

The new trenches in the northeastern area have so far revealed extraordinarily well-preserved remains of burnt postwall houses of AP 2–6 date. Excavations have not yet extended into the oldest layers. One of the most striking features of the site is a malachite bead workshop in an AP 3 house uncovered in 1999. In this house, malachite pieces at every stage of the process from raw material to finished bead were found next to an oven, as well as a hoard of broken beads and a collier on which the same type of beads was used. The hoard and the collier were probably deposited together in order to have the collier repaired. Among the tools used in this workshop were bone handles and flint borers. Apparently the malachite was used only as a decorative stone, not as a possible metal ore.

The lowest level reached so far is in the northeastern area and dates to the end of the early Neolithic (AP 6 = *Karanovo* II). Here, a large burnt rectangular building with four rooms was uncovered. Parts of the collapsed walls and well-preserved interior features could be seen. Its extraordinary state of preservation makes it one of the best preserved early Neolithic buildings in southeast Eu-

⁶¹ Annual reports appeared in *KST* 18 (1997) 49–52; *KST* 19 (1998) 173–8; *KST* 21 (2000) 129–32. The renaming of layers VI and V is discussed in *Anatolia Antiqua* 5 (1997) 1–18; for a summary, see Roodenberg 1999.

⁶² For a preliminary report on the excavation, see *Anatolica* 25 (1999) 21–36; see 37–51 on the skeletons. See also *Arkeoloji ve Sanat* May 1999.



Fig. 10. Oylum Höyük, courtyard in the northern extension trench (MB II)

rope. Since 1998, plans have been made to protect and conserve several of the houses of layers 4 and 5 for an open-air museum.⁶³

Tekirdağ-Menekşe Çatağı. Rescue excavations carried out by A. Özdoğan in cooperation with the Tekirdağ Museum have revealed evidence for the existence of a Chalcolithic settlement at this site. Remains of ovens and oval structures with walls made from standing posts with wattle and daub have been uncovered beneath a sterile layer below the Early Bronze Age settlement. According to Özdoğan, the material can be compared to Aşağı Pınar 3 and to Toptepe.⁶⁴

BRONZE AGE

Southeastern Anatolia and Cilicia

Oylum Höyük. The author (B. Helwing) reports:

Work in the step trench on the eastern slope continued, with emphasis on the large-scale exposure of Bronze Age remains in the main step trench and a northern extension trench. An important result of this exposure was to prove a major gap in occupation on the eastern slope between EB IV and MB II. The MB II buildings form a terraced construction, which leans against the western slope of an older EB tell with floor elevations of a single house unit sometimes varying by more than one meter. One building on the eastern side

of a street that ran parallel to the slope of the tell stands out because of its elaborate entrance construction, which makes use of trimmed basalt slabs to line the doorway. In the northern extension trench, two courtyards, partly paved with untrimmed basalt stones, and a kitchen floor yielded pottery characteristic of Alalakh IX–VII such as “black ware” and broad rim kettles. The larger of the courtyards was apparently used as an area for the processing of agricultural products: a large fireplace, a flat stone with a round depression, and a limestone tub were found (see fig. 10). In the step trench itself, the rooms were badly affected by slope erosion. West of the street, two rooms not yet stratigraphically connected to the main building so far have been exposed. One was a burnt room, only partially within the step trench, that held eight large pithoi and a small jar of Alalakh VII type (see fig. 11). Another small rectangular room was used to dispose of burials: thrown onto a heap within the room, the largely disarticulated remains of 14 adults were found. Further burials of children in jars and some simple inhumations of adults were located below the floors. Among the most remarkable finds from the MB II layers is a limestone stele fragment found on the street and depicting a warrior god.

Immediately beneath the MB II building, further EB III–IV tombs have been exposed: one chamber

⁶³Annual reports appeared in *KST* 18 (1997) 53–80; *KST* 19 (1998) 123–49; *KST* 20 (1999) 139–64; *KST* 21 (2000) 93–108. For a summary on the eastern Thrace sites, see M. Özdoğan in *TÜBA-AR* 1 (1998) 63–93; Özdoğan 1999; H. Parz-

inger and M. Özdoğan, *Antike Welt* 30/4 (1999) 325–36.

⁶⁴For reports, see *MKKS* 7 (1997) 89–98; *KST* 20 (1999) 295–310; *KST* 21 (2000) 239–50.



Fig. 11. Oylum Höyük, burnt room in the step trench (MB II)

tomb with three courses of dry stone walls still standing apparently had an upper mudbrick construction that was respected by the MB walls. Most of the burials, however, were placed in jars and pithoi. Grave gifts consist of vast amounts of plain simple pottery such as beakers, three-foot jars, and some special forms of black ring-burnished jars. Bronze torques and spirals are also frequent. For bibliography, see above.

Tilbeshar. Four seasons of excavation at Tilbeshar carried out by C. Kepinski-Lecomte in collaboration with the Gaziantep Museum have added another place to the map of third-millennium B.C. urban centers in southeastern Turkey and reveal evidence of earlier occupation on the high mound. A stratigraphic sounding on the high mound and several larger areas exposed in the lower town now allow us to sketch the occupation history of the site.

The step trench on the slope of the citadel ("chantier E") revealed a stratigraphic sequence reaching down into late Chalcolithic layers. These consist of a massive mudbrick wall interpreted as an enclosure wall. Reserved slip pottery and chaff-tempered ware of Amuq F tradition place this layer at the end of the fourth millennium B.C. The wall was covered with a fill of mudbrick debris, above which two fragmentary rooms with mudbrick walls were documented. Material associated with these rooms contains reserved slip ware and band rim bowls and indicates an EB I date. The next phase consisted of a massive stepped mudbrick terrace of the EB II period. This terrace or platform represents the first massive construction

measures undertaken during the later EB II and immediately predates the massive expansion of the town.

This expansion was documented in several trenches in the northern and southeastern sectors of the lower town. Houses erected on virgin soil were documented both in the northern sector ("chantier D") and the southeastern sector ("chantier J"). Metallic ware and other pottery types from a floor in the northern sector and from a tomb in the southeastern sector indicate a date toward the end of EB II for the first settlement of the lower town. A second occupation phase in the southeastern trench was exposed on a larger scale with four buildings grouped next to a street. A bronze tool hoard was found in one of the rooms. Syrian bottles and a depas fragment place this assemblage towards the end of the EB, confirmed by radiocarbon dates. The next occupation phase exposed in chantier J belongs to a large multiroom building of the MB period. Numerous burials of the same age or slightly later were recorded in this area.

The oldest occupation excavated so far dates to the late fourth millennium B.C. This settlement was restricted to the main mound and was apparently encircled by a massive mudbrick wall. It was followed by badly preserved EB I remains that were again sealed by the first massive construction of the EB II, the high terrace. Late in the EB II period, a sudden extension of the settlement into several sectors of the lower town can be seen. Tilbeshar then stayed at an urban size until the MB pe-

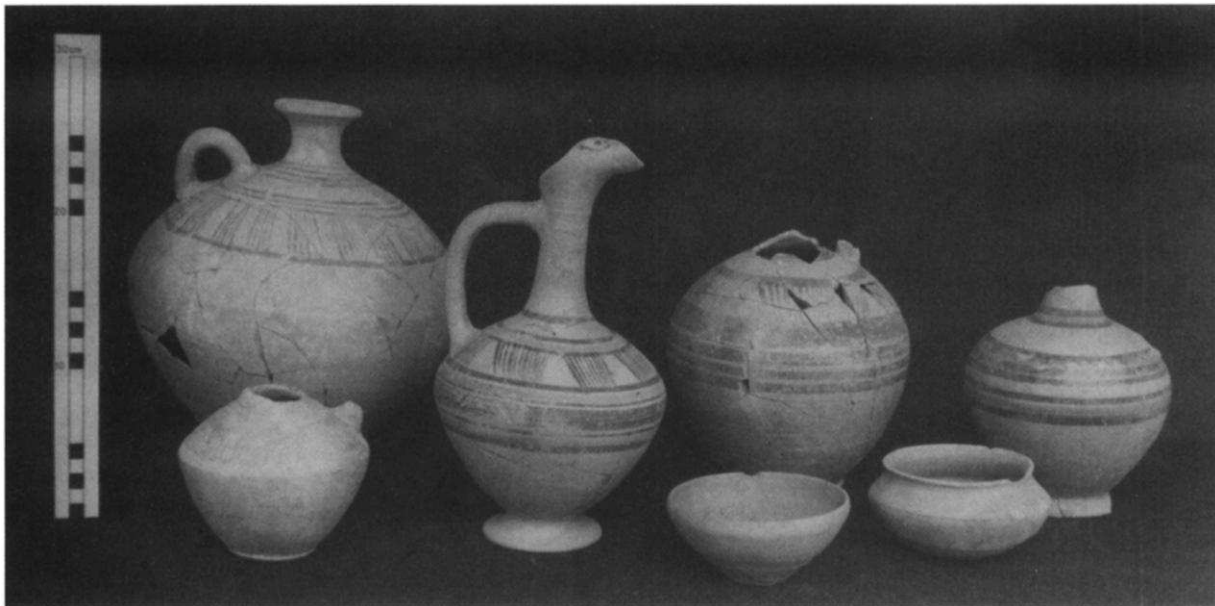


Fig. 12. Kinet Höyük, east terrace. MB II plain and Cilician Painted Wares. Scale = 30 cm. (T. Çakar)

riod, after which the settlement was abandoned until a Crusader castle was constructed on the citadel and the lower town was reoccupied.⁶⁵

Birecik Cemetery. Rescue excavations had to be taken up by the Gaziantep Museum when gravel quarrying for the construction of the Birecik Dam in 1996 hit upon a large Early Bronze Age cemetery. In four seasons between 1996 and 1999, 261 tombs were documented. They consist mainly of stone cist tombs constructed of slabs of the local limestone. Skeletons were almost never preserved because of the acidic conditions in the graves. Between the graves, fireplaces and the remains of flimsy structures were observed. The grave goods consist of an enormous amount of pottery vessels in forms such as fruitstands, band rim bowls, and four-legged jars that are all well known from other EB I cemeteries in the area. Among the extraordinary metal finds, a cylinder seal surmounted by a caprid and a variety of pins with figural heads are noteworthy.⁶⁶

Kinet Höyük. Marie-Henriette Gates, Bilkent University, Ankara, reports:

The 1997–2000 seasons at Kinet Höyük (ancient Issos), on the Mediterranean coast of İskenderum, focused on selected phases encountered in the five preceding campaigns at this multiperiod har-

bor: Middle Bronze, Late Bronze, and Iron Age levels, and the site's final, Medieval occupation.

On the mound's east terrace, the burnt MBII (Kinet V) building discovered in 1995 was extended to a 200 m² area. The exposed sector consists of two parallel, but noncommunicating, service wings belonging to a large-scale structure. The building underwent two phases, original construction and a careless repair after the original version was damaged by fire. Investigations of the later phase, described here, were completed by the 1999 season. In the east wing, connected storerooms were filled with large jars, cooking equipment, and tableware. Jars in the five northern rooms contained cereals and oil, the southern rooms' many containers—preserved, however, for the building's original phase only—were reserved for liquids and perishable goods. The west wing, in contrast, was occupied by a large open court, flanked by two or three smaller units, probably also open-air. It was devoted to industrial activities, indicated by pisé ovens (some resembling furnaces), a well, a bench with grinding equipment, and a stone mold for casting metal tools. A nude terra-cotta female figurine of MB Syrian type was found beside a hearth and other heating installations in the southern court. The generous tableware repertoire recovered in situ

⁶⁵ Annual reports appeared in *KST* 18 (1997) 163–71; *KST* 20 (1999) 241–7; *KST* 21 (2000) 209–16. For summaries on the excavation seasons, see *Anatolia Antiqua* 6 (1998) 337–41 (1997 season); 7 (1999) 245–52 (1998 season); 8 (2000) 215–

25 (1999 season).

⁶⁶ For a summary, see *Anatolica* 25 (1999) 87–107. A report on the skeletal remains has also appeared. See *Ar&ST* 13 (1999) 65–73 on metal and slag analysis.

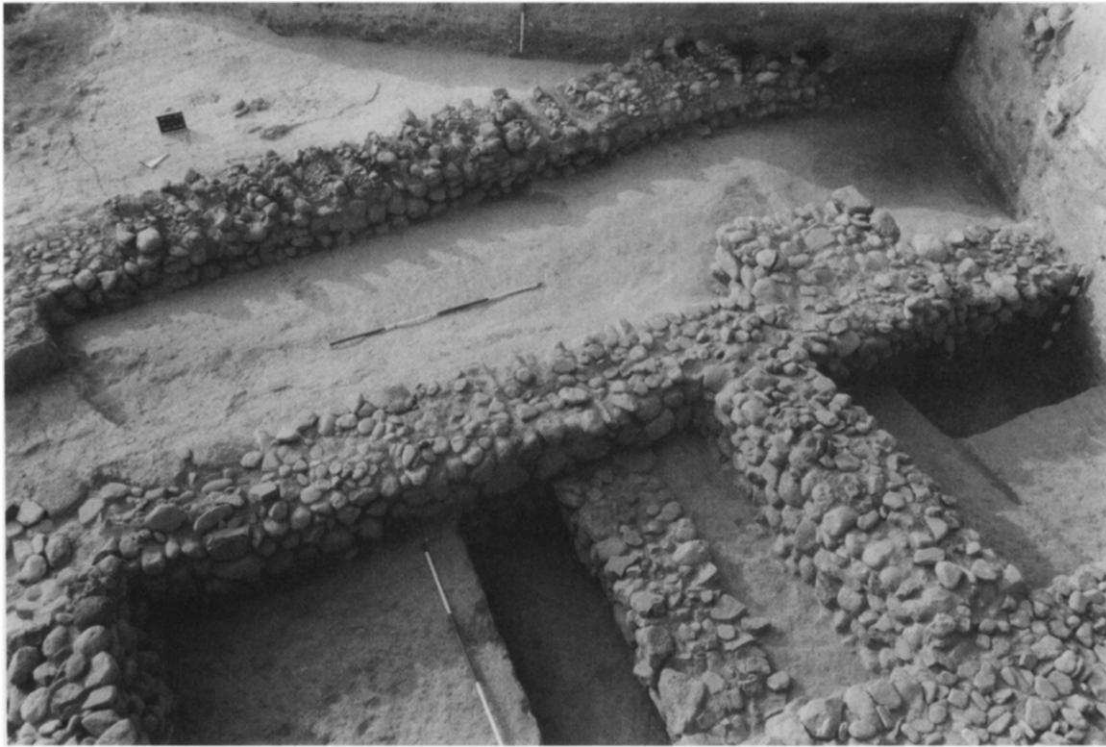


Fig. 13. Kinet Höyük, west slope. LB II building foundations (OPJ/L, period 15), from the east.

from the later phase belonged to traditions that are considered chronologically distinct. Cilesian Painted Ware, usually dated to the earlier phase of MB II (19th/18th century B.C.) (fig. 12), and shapes and burnished wares of LB I type, together with transitional late MB II (MB III) LB I Cypriot imports (Bichrome, White Painted V, Monochrome, Base Ring I) were found. Calibrated radiocarbon dates for the two building phases span the late 18th to mid 15th centuries B.C., supporting the later ceramic evidence. The building was destroyed by earthquake and buried in water-land gravel and marine shell deposits. The east terrace was not occupied until the Hellenistic and Medieval periods.

Three LB II architectural levels were exposed in a 130 m² operation on the mound's west slope, where excavations for this period had begun in 1994. They illustrate Kinet's integration into the Hittite empire of the 14th–13th centuries B.C. The earliest level excavated in 1999 and designated period 15 (Kinet IV.2) is represented by the stone foundations of an impressive building (fig. 13). Three separate stages from original construction until abandonment involved annexing a now eroded structure to the west, reworking room partitions, and raising the foundations to a final height of 1.25 m. Finds recovered from stratified fills included an exceptional number of metal pins and wire,

a copper bun ingot, and crucible fragments containing cuprous residue. Pottery conformed to the central Anatolian tradition of the early empire (14th century B.C.) highly burnished tan- or red-brown pitchers and bowls, and coarser plates and platters with occasional potmarks. Storage jars, however, were Mediterranean "Caanite" type. After this building went out of use, its brick superstructure was razed and sealed by two levels of domestic housing, dating to the 13th century B.C. (periods 14 and 13/Kinet IV:1). The plans of these two single house units, which were doubled during the 1997 and 1998 seasons, involved courtyards and rooms for cooking and storage. Both were destroyed in violent fires: spearheads and other weapons in the western rooms of period 14 indicate an outright attack. In situ pottery from both periods maintained Hittite fabrics and shapes, supplemented by collared and collarless Caanite jars, and occasional Cypriot imports (White Slip II, Base Ring II). From the period 14 house, an elephant ivory cylinder seal was carved with decorative panels using LB Levantine motifs and framing a pseudo-inscription (fig. 14).

The abrupt end of Kinet's LB occupation, marked in the west slope operation by the burning of the period 13 house, was followed by radical changes in the next, early Iron Age phase (period 12/kinet

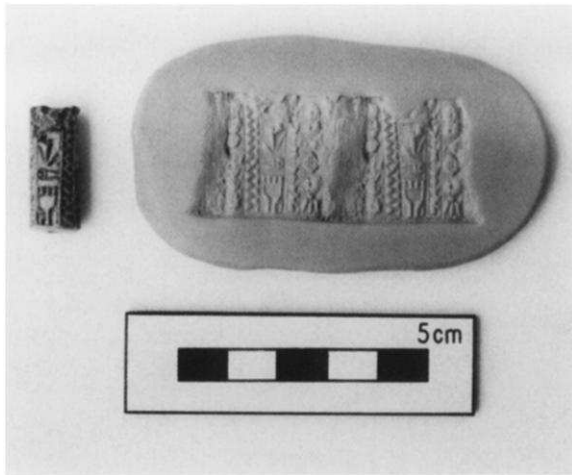


Fig. 14. Kinet Höyük, west slope. Ivory Cylinder seal KNH-1013 (OP/J/L, period 14, 13th century B.C.). Height = 2.5 cm. (T. Çakar)

III:3). Its deposits, sampled in 1997, consisted of a 1.5 m accumulation of trash tips, storage pits, and pisé and pebble platforms or hearths. Architectural remains, otherwise a constant in the west slope trenches, were nonexistent. Both handmade and painted components were introduced into the ceramic repertoire. Finally, the switch to a diet based on sheep, goat, and pig, but excluding fish—a Late Bronze Age staple—suggests a new population unfamiliar with marine resources.

Other 1997–1999 operations recovered kilns of the eighth and sixth centuries B.C. in the residential district on the mound's east slope, portions of a massive fortification wall and garrison built ca. 400 B.C. during the Persian period (fig. 15), and an extended view of the Medieval citadel and its planned lower town (12th–early 14th centuries A.D.). In addition, a geomorphological team carried out surveys to study Kinet's diachronic environmental context, with particular attention to hydrological patterns and soundings in the area north of the mound to determine the coastline's ancient configuration. Together with a geophysical (magnetometer) survey in the same area during the 2000 campaign, the soundings reflect the settlement sequence known from the mound proper. The discovery of early LB deposits 100 m northwest of the mound and close to the modern surface, without later overlay, would provide a first index to reconstructing the history of its harbors.⁶⁷

⁶⁷ Annual excavation reports can be found in *KST* 20 (1999) 259–81; *KST* 21 (2000) 193–208. Topical reports have appeared on Achaemenid Persian and Hellenistic periods of the site, by

Şaraga Höyük. Fikri Kulakoğlu, Ankara University, and Kemal Sertok, Gaziantep Museum, report:

The site of Şaraga Höyük, which lies on the west bank of the Euphrates, 5 km north of Karkamish, was investigated in 1998 and excavated in 1999 as part of the Ilisu and Karkamish Dam project, and was one of the first victims of the water. The mound, which measured 200 m north–south and 150 m east–west, was chosen on the basis of an earlier survey by Prof. Algaze. The mound must originally have been round in form, but was cut on the west side for cultivation and was eroded on the east side by the Euphrates. In 1999, excavations were carried out in the south and north sectors and uncovered Late Uruk; Early, Middle, and Late Bronze Age; and Iron Age and Medieval material, with a particular concentration on the second-millennium B.C. levels.

The Late Uruk levels could not be explored because of the high water table, although some bevelled rim bowls were found. The finds were not sufficient to determine the place of this site in the Uruk system, but it was probably within the so-called colonization chain, in consideration of Sadi Tepe, 5 km to the south. Early Bronze Age material was found only in trench K, under the monumental Middle Bronze Age building level. The first (latest) Early Bronze Age building phase had a two-roomed structure. The second building phase had a building with a room with a circular hearth in it. A coarseware kitchen pot and a fine paste storage vessel with a flat base were found in situ. In the earliest level of the Early Bronze Age, a layer of stamped earth that covered the whole trench and two parallel walls were found. The pithos-burial of an infant was excavated in the northern part of the trench. Wheelmade mass production wares such as globular vases, the so-called Hama goblets, and tripod jars were the characteristic pottery of the Early Bronze Age layer in trench K. Terra-cotta bull figurines, Canaanite blades, and other small artifacts were also found.

In the first phase of the Middle Bronze Age, remains of a monumental building were found in both the north and south trenches. It measured 45 m north–south, and several storage jars for provisions suggest that the excavated area was the building's depots. The architecture of the building was renewed several times, with old walls being thickened by new support walls, without any change in the

C. Gates, *OLBA* 2:323, 32 and on acculturation in the ancient harbor, by M-H. Gates, *OLBA* 2:303–12.



Fig. 15. Kinet Höyük, mound upper north side. Persian period foundations, from the east (OP.G3, period 3, ca. 400 B.C.).

layout of the building. The same was true of the defensive wall, which survived up to a height of 1.2 m in places. In trench A in the south sector, there was a cist grave in which multiple burials were observed. The later phase of the Middle Bronze Age was represented by several pot and inhumation graves, above the monumental building of the first phase, but the architectural plan could be well traced. Typical Middle Bronze Age pottery includes large storage jars with grooved rims and incised combed pattern decoration, similar to examples from Haradum, Hadidi, Kara Kuzak, Hamman et-Turkman, and other Middle Euphrates sites. A pilgrim flask found in the cist grave has parallels at Karkamish, Mari Harardum, Kurban Höyük, and Kültepe. Syrian bottles also show close connections with the north Syrian sites and neighboring settlements. The importance of Şaraga Höyük in this period is not in the first degree, because of the neighboring site of Karkamish, but the existence of this palatial building shows that it was another important settlement at this time.

In the Late Bronze Age, there was a level of simple planned houses. A Mitannian seal, found in one of these buildings, and sherds of Late Habur wares with painted rows of bird motifs help to date this level. Traces of Iron Age cultural phases, including a kiln with parallels in Nuzi and Tel Jigan,

were found under the surface soil. To the west of the kiln was an inhumation grave with rich gifts including a bronze *kohl*, a bronze mirror, silver and agate necklace beads, a copper ring, and earrings. Seven amphorae were lined up vertically on the west side of the deceased. Terra-cotta horse and female figurines date this to the late Iron Age, that is, the fifth to fourth centuries B.C.

Konya-Karaman Survey. Hasan Bahar of Selçuk Üniversitesi, Konya, reports on progress in this ongoing survey project, which began in 1994 and will continue next year:

In 1999, our area survey began 35 km north of Konya at Doğu Güvenç Höyük and worked east, visiting sites such as Aşağı Pınarbaşı, Tömek, and Tömek-Gevre. In this area, material dating from the Chalcolithic to the Classical period was found. At Tömek there were rich surface finds, including 10 round loom weights made of grey clay; it is therefore a potential site for future research. Eighty km between Konya and Karapınar, at Akkuyu and Sırnık Höyük, Early Bronze Age and Hittite Imperial period pottery was found. On the other side, to the west of Konya, research was carried out in the Derbent and Höyük districts and at Çavuş Kale and Höyük, finds of the second millennium B.C. and early first millennium B.C. were made. Çavuş Kale is in the district of Höyük in the town of Çavuş.

East of Konya, in the Karadağ and Kızıldağ region, the tell sites of Kaşoba, Kissecik, İslıhisar I and II, Süleyman Hacı, and Mezeltepe I were visited. İslıhisar II was especially important for the second millennium B.C. and early Iron Age periods. This is a very historic area and these new finds provide additional information about the Kızıldağ-Hartapuş monument. This is an inscription, high on the rock face, with the seated figure of the late Hittite king Hartapuş. A step-altar, stone ramparts, and a single rock-cut tomb were also found here. At Süleyman Hacı a decorated stone lintel was found.

Ziyaret Tepe. In 1997 a new intensive survey project was begun at this Late Bronze Age to Iron Age (Middle and Neo-Assyrian) urban center by Timothy Matney, who reports:

Ziyaret Tepe is a large multiperiod mounded site located on the south bank of the Tigris River, east of Tepe and 20 km west of the confluence of the Tigris and Batman Rivers. With a commanding view, it is situated atop a broad, low terrace overlooking the wide Tigris floodplain. The site consists of a high mound and a surrounding lower town. The high mound, to the north, rises 22 m above the terrain and is approximately 3 ha in extent. A depression on the north edge of the high mound marks the probable location of an important gate leading onto the citadel. The lower town spreads over 32 ha to the west, south, and east of the high mound, and this area is generally flat, although a slight rise at the southern edge marks the line of the ancient city wall. The objectives of the Ziyaret Tepe project are to document the Upper Tigris region that will be flooded by the Ilisu Dam, to study town planning at the site in the Assyrian phase, and to reconstruct the ancient natural and human resources and land-use patterns in order trace the environmental impact of Assyrian urbanization.

Surface and subsurface exploration of the settlement in 1997 and 1998 generated a topographic plan of the site, a series of pottery distribution maps, a settlement history, and preliminary subsurface magnetic field gradient survey maps for portions of the high mound and lower town. In 1999, the initiation of cotton farming in the southeast corner of the site prompted us to concentrate work in that area, and an area of 5.12 ha of the lower town was mapped using magnetometers.

The surface survey provided evidence for an occupational history of the site from the late Neolith-

ic/early Chalcolithic period to the early Islamic period (ca. 5500 B.C. to A.D. 800). The largest concentration of material was in the Late Bronze Age and Iron Age. In the Middle Bronze Age the site grew, and the entire high mound appears to have been occupied. In the second half of the second millennium B.C., with the expansion of the Middle Assyrian empire into the Upper Tigris basin in the late Bronze Age, there was considerable change. For the first time, large portions of the lower town were occupied, creating a small urban center of approximately 32 ha. There are very few early Iron Age sherds but in the late Iron Age (Late or Neo-Assyrian) period there was rapid reurbanization. Late Assyrian pottery was found across the high mound and all of the lower town area. Presumably, this occupation stopped in the late seventh century B.C. with the collapse of the Late Assyrian empire. Ziyaret Tepe may be one of a series of garrison towns on the Tigris known to have existed from Assyrian historical sources, perhaps the regional capital of Tushan.

The magnetometer survey has identified a number of interesting anomalies including the probable line of the city walls with some possible gates or towers. A large circular positive magnetic feature in the southern half of the site may be a kiln, and a series of linear features, at approximately 25 m intervals across the lower town, may prove to be terraces, defensive walls, or field boundaries.⁶⁸

Hatay. A study of dolmens in the Hatay region has been carried out by Bakiye Yükmén. A considerable number of these interesting monuments have been located by this survey. Although they are presumed to be Bronze Age in date, their absolute date cannot be confirmed by survey methods alone.⁶⁹

Horum Höyük. Despite extensive Medieval disturbance in trench B, high up on the mound, two modest Bronze Age buildings were identified, bordered to the south by what is probably a corridor. The walls appear to have had stone foundations that followed the orientation of the preceding structure. This building tradition was used throughout the third millennium B.C. The pottery associated with these foundations includes Banded-Rim Ware bowls and cups of the Early Bronze Age I period, with parallels at Kurban Höyük V, Tell Qara Quzak V, and Birecik cemetery. Here, detailed study of the pottery and stratigraphy has shown stylistic de-

⁶⁸ In order to positively identify some of these features, excavations are planned for 2000. A preliminary report on the 1997 survey has now appeared in *AraşST* 16:255–66.

⁶⁹ An article on this work appeared in *Arkeoloji ve Sanat* 96 (2000) 18–21.

velopment over time in the material and suggests that the Early Bronze Age I period (ca. 2200–1900 B.C.) was a long period of occupation at this site.

In trenches F and J at the eastern base of the mound, where it was heavily eroded by the Euphrates, the objective was to expose as large an area of architectural remains as possible. Here, there were numerous walls of the Middle Bronze Age (EB IV) period. From these an understanding of the architectural practices of the Early Bronze IV period can be obtained, such as the use and frequent reuse of stone foundations. This period is dated by incised decorated pottery similar to that from Kurban Höyük III and Tell Banat/Kabir.

In all three trenches (B, F, and J), typical third-millennium intramural infant burials in jars were found. There was also one adult burial in trench F, of Middle Bronze Age date (ca. 1600 B.C.) accompanied by pottery comparable with that of Ladar Höyük 4 and 5. For bibliography, the general stratigraphy of the site, and its earliest levels, see above.

Arslantepe-Malatya. For bibliography and details on the Early Bronze Age Royal Tomb at Arslantepe, see above under “Late Neolithic and Chalcolithic: Southeastern Anatolia and Cilicia.”

Tilbes Höyük. For a brief report and bibliography on archaeological works at this site, which included considerable Early Bronze Age and some Middle Bronze Age material, see above, under “Late Neolithic and Chalcolithic: Southeastern Anatolian and Cilicia.”

Çavlum Köyü. Here Nejat Bilgen has been excavating a Middle Bronze Age extramural necropolis, which parallels to the early Hittite Royal Period, and has uncovered a large number of pithos burials. The graveyard is now under a plowed field, and the upper part of most of the burials has been damaged by the plow; in some cases few bones have survived. In several examples there are two skeletons in a single burial in a contracted (fetal) position. In one case a cremation and an inhumation were buried together. In one very large (60 × 110 cm) pithos, sealed with a stone slab (85 × 65 cm), there were the skeletons of three infants and one young adult, who was perhaps 18 years of age. Grave goods included earrings (in some cases found in situ), shell beads, and pins.

Hakkâri. Thirteen carved stone stele were found here on the north slope of Hakkâri Castle. They

varied in height from 90 cm to 3.1 m and usually had a single naked man as the central motif. These figures usually have a belt, dagger and *litus*, axe, spear, and tent. One example depicts two animals fighting.

There is great difficulty in dating these stele. Parallels may exist in Iran, Scythia, and even Iberia, and although the iconography appears to be Late Bronze Age, no definite comparisons or dating can be made. Two different styles can be distinguished—the earlier ones are in high relief and the later ones are incised. Parallels can be seen in similar stele across a wide area from northern Russia to Portugal, with a variety of dates being suggested for them. The Hakkâri examples were excavated, but there are no graves associated with them and only a little monochrome pottery has been found. The excavator, Veli Sevin, dates them to about 1200 B.C.

Twenty meters to the east, a chamber tomb was found and excavated. Inside this were the remains of 50 human skeletons, two bronze daggers that had been deliberately bent, and some silver earrings. A quantity of painted pottery was found including a *rhyton* of “Van Urmia” (Aras Painted) ware and two pots of Habur ware dating to the first half of the second millennium B.C.⁷⁰

Zeytinli Bahçe Höyük. For the Early Bronze Age occupation, see above.

The 15 m high steep conical elevation sitting on the northern end of Zeytinli Bahçe Höyük proved to be an artificial construction. Concentric and radial walls form a conical structure that might have been a tumulus. Iron Age and Byzantine material has been collected from the monument’s surface but reliable dating is not possible yet.

Yumuktepe. Some Middle Bronze Age levels were found here and are mentioned above, under “Neolithic.”

Eastern, Northern, and Central Anatolia

Gre-Virike. This site, 15 km south of Birecik on the east bank of the Fırat River, was excavated by Ayşe Tuba Ökse as part of the Karkamış Dam project. An area of 700 m² was excavated on the summit and on the south slope of the tell, and nine Early Bronze Age levels were identified despite Medieval and modern disturbance to the earlier levels.

Early Bronze Age (third millennium B.C.) buildings and graves were found on the summit. The

⁷⁰An article on the discovery of the stele by V. Sevin and A. Özfırat has now appeared in *Arkeoloji ve Sanat* 87 (1998) 6–9.

buildings were constructed using mudbricks measuring 60 × 70 cm and were founded on step terraces with retaining walls made of mudbrick. The walls had stone foundations eight or nine courses high, with doorways, and occasionally plaster was found covering the mudbrick. In one building the west wall was a high stone wall, and the other walls were of mudbrick, so two construction techniques were in use in the same building.

In situ finds included nine jars, six bowls, a basalt saddle quern, the head of a mace, and a burnt limestone model of a house. Typical Early Bronze Age 4 bell-shaped pottery was found as well as a Jemdet Nasr style cylinder seal.

During excavation of the leveled mudbrick surface upon which the buildings partly rested, infant pithos burials were found as was a single shaft grave. The shaft grave was sealed with a flat stone, and when it was opened it was very richly furnished with a total of 46 small finds. Interred in the grave were two infants, side by side, and a third infant in a square *lamax*-type terra-cotta coffin that had a draining hole in it. This may originally have been a bath. The finds included four pins, five beads, two quadrafoil kantharoi, and a bird-shaped rattle.

A survey was made and the source of the basalt used for building foundations at Gre-Virike was found nearby at Karadağ. Recording was also carried out at the nearby site of Mezraa Höyük, where recent activity has cut into the hill, exposing a clean profile through the tell. The Beylik (Medieval), Roman, Hellenistic, early Middle Bronze Age, and all phases of the Early Bronze Age were represented in this section.

Hüseyindede. In 1998 excavation of a large rectangular formal building at this site began. Work continued in 1999, and a total area of 500 m² has now been opened up. The base and walls of the building are constructed using stone, with no evidence so far for the use of mudbrick or wooden columns. The north wall was 1 m thick, and large rectangular blocks were used for the base of walls, with smaller stones being used for the upper walls. This wall technique parallels Old Hittite architecture. In places, the bases of the walls sit directly on the bedrock. In 1998, thick plaster was found in the cult room, but in 1999, none was found. The building was partly floored with compact earth and partly with stone slabs. In 1999, a new area was opened to the northwest of the mound and here also stone floors were

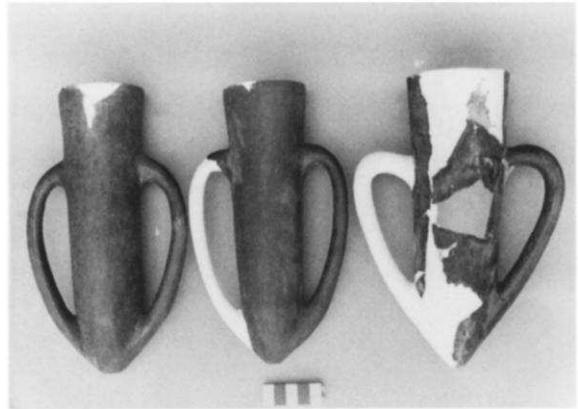


Fig. 16. Küllüoba, depas cups from LB3 levels

used. The building parallels Alaca Höyük 3a and Büyükkale 3/4.

A bronze dagger that parallels Alaca Höyük 3a and b types was found, and pottery including kitchen wares, pitchers, and pithoi was found. A large amphora with relief decoration of a type and subject similar to that found at Inandık was also found and restored. This important cult artifact, together with the cult room and storage rooms that have been found, have led the excavators, T. Yıldırım, T. Sipahi, and İ. Ediz, to interpret the site as a cult center for the weather god.⁷¹

Küllüoba. Turan Efe has been working on this site to the southeast of Eskişehir. Six building levels have been identified, the earliest of which dates to the final late Chalcolithic period. There are two Early Bronze Age stratigraphic levels. At the start of the Early Bronze Age, on the north side of the tell, a zigzag mudbrick wall was built. This was probably a rampart wall and was plastered on the outside. Houses with simple red earthen floors were built up against the inside of this rampart wall. The fortifications were made on an earth embankment similar to Semayük-Karataş. The architecture of this period is mudbrick, with megaron buildings. Pottery of the Demircihöyük D, E, and F, and Beycesultan barbotine types, dating to the end of the EB I period, was found.

In the second Early Bronze Age level (EB II–III period), there was an upper and a lower town. The ruins of the lower town are situated on the east slope of the hill. A 21 m long megaron was found here. The area in front of this megaron was paved with stones and there was a storage area under the floor, which was divided in two by a wall. In the antechamber there was a hearth. A tankard-style pot

⁷¹ For a preliminary report, see *KST* 21 (2000).

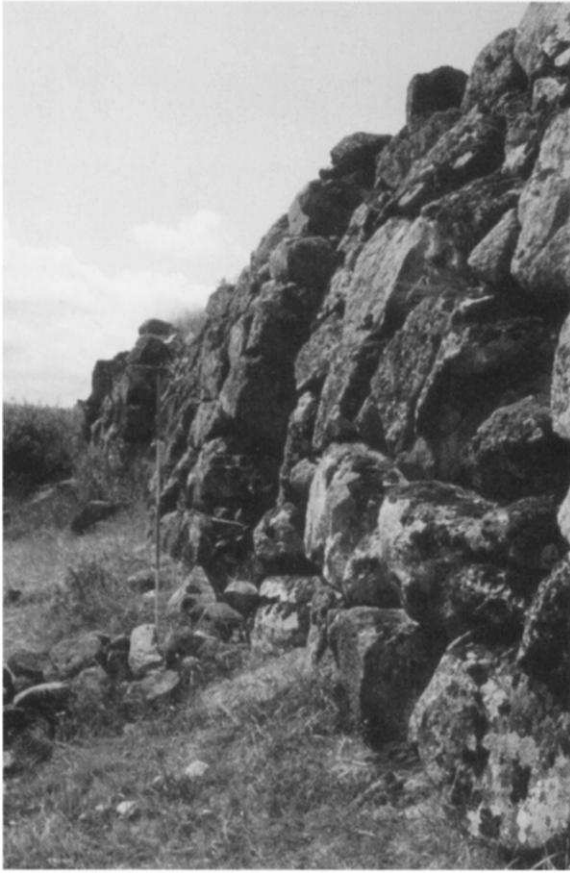


Fig. 17. Çankırı/Paphlagonia, the Hittite site of Dumanlı. (Courtesy R. Matthews)

found in a rubbish pit closely resembles typical pottery of the Early Bronze Age II period. From the fourth phase of the site came some depas cups, some of which were large (ca. 50 cm high) and some of which had incised decoration (fig. 16). Red polished pottery of the early Troy II type was also found. Two marble idols, snapped off at the neck, were found. These resembled Karataş types.⁷²

Acemhöyük. From 1997 to 1999, Aliye Öztan excavated the area between the Sarıkaya palace and the Hatipler palace, following on from geophysical survey carried out in previous years. In this area, a trench 50 × 50 m was opened and three levels were found. The first (upper) level was very heavily destroyed. In the second (middle) level, square and trapezoidal houses were found built on top of the heavily burnt third (lower) level.

The third level dates to the Assyrian trade colony 1 and 2 periods and had a single large building, of which 14 rooms were excavated. The architecture of

this building consisted of mudbrick walls, made using two sizes of mudbricks, and wooden posts. Two types of plaster were used, first a fine clay and then a whitewash. This building had thick, high walls, and this may indicate that it was originally two stories high. In room 3 remains of a doorframe were found. In room 5 there were wooden remains in the upper layers and in room 6 there was also evidence to suggest the existence of a second story. Room 7 was an L-shaped corridor in which a lidded vase and mug were found. In room 8 in the upper layer were further wood remains and a *bulla*, with a “Master of Animals,” resembling one found in the Sarıkaya palace. In another room of the third level building a bench was found parallel to the wall. This building is contemporary with the adjacent palaces.

A total of 48 artifacts were found, including andirons, lidded vases, stands, mugs, and Alişar III pottery in secondary use. A unique find is a hematite duck weighing 2,534 grams.

Çankırı/Paphlagonia. A five year program of multi-period survey commenced in 1997, directed by Roger Matthews, British Institute of Archaeology at Ankara, who reports:

In this research the emphasis is on the nature of interactions between people and landscapes over very long time periods, the study of human ecodynamics. The Romano-Byzantine province of Paphlagonia lies in northern Anatolia, spanning the transition between the Anatolian plateau and the Pontic mountains of the Black Sea region. In archaeological terms the area is scarcely investigated. During the first three seasons of fieldwork the aim has been to build up a general chronological framework for settlement history before proceeding with more intensive work in 2000–2001.

Major features of the settlement history so far discerned include a marked absence of early prehistoric occupation, and the location of sizeable Early Bronze Age sites adjacent to natural resources such as obsidian, flint, and rock-salt. During the Late Bronze Age, the time of the Hittite empire, this region was an important border zone between the Hittites, with their capital close by to the southeast, and the troublesome Kashka people of the adjacent mountains. We have located numerous medium- to large-sized Late Bronze Age mounds, many of them with stone fortifications and access ramps, all strategically distributed across the landscape and clearly functioning as nodes of control in a centuries-long military conflict between

⁷² For reports, see *KST* 20 (1999) and *KST* 21 (2000).

the Hittites and their neighbors. One such site is at Dumanlı, where Late Bronze Age fortifications were found (see fig. 17).

In the Iron Age we find new types of sites, including burial tumuli, rock-cut tombs and hilltop forts. The Roman and early Byzantine settlement pattern shows a dispersal of settlement, ranging from hamlet to large town over the entire landscape of southern Paphlagonia, which in subsequent centuries up to the present, shows substantial fluctuations in settlement density and distribution. Ongoing studies include the extraction of lake sediment cores for environmental analysis, pottery studies, and work on the Ottoman tax records of the 16th century A.D.⁷³

Sos Höyük-Erzurum. The excavators (A. Sagona, M. Erkman, C. Sagona, and I. McNiven) report:

In 1997, an early Trans-Caucasian or Kura-Araxes burial was found. The grave was a simple sub-ovoid pit, measuring 1.8 × 1.8 m. The skeleton was in a flexed position, oriented approximately east-west and accompanied by a black burnished bowl placed under the right hip and two rings made from shell. The human bones produced a calibrated date range of 2560–2525 B.C. and 2500–2195 B.C. This grave was partially cut through by later graves, excavated in 1996–1997, which were accompanied by grave goods of the Trialeti tradition. In one of these graves the bones were disarticulated, except for the lower arms, which were crossed and in their correct anatomical position, deliberately placed to the east of the body and giving the impression that they had been severed at the elbows. This burial was accompanied by a black jar with a crude incised design of hanging triangles filled with white paste and a shell ring. The human bone was dated to 2575–2300 B.C.⁷⁴ On the general stratigraphy and early occupation of the mound, see above.

Sivas. Survey of goldworking installations was carried out by Ergun Kaptan at Sivas Kangal Çetinkaya. Remnants of mining activity were found on the north slopes of Bakirtepe, including rubble and large stone mortars. The mortars were made from large stones with a depression on one or occasionally both sides, in which the ore was broken and crushed before being washed and processed. Inside some of the mortars, traces of gold were found. In the surrounding area were hundreds of pestle-stones, with which the ore had been crushed. E. Kaptan connects this site with the “Hahum” from where Mesopotamian

sources record gold being bought in the second millennium B.C. He recognizes, however, that in the absence of any pottery or other datable cultural material, this clearly ancient mining complex cannot be firmly attributed to any particular period.

İkiztepe. Excavations on Tepe III by Önder Bilgi have been carried out since 1993 and have now uncovered 11 architectural levels at this hilltop promontory site to the east of the delta of the Kızılırmak (ancient Halys) River. These levels date to the Early and Middle Bronze Ages, Late Iron Age, and Hellenistic period, although many of them have been damaged by modern agricultural activity at the site. The most important finds in recent seasons were recovered from the Bronze Age levels. The site does not appear to have been planned in any way, with an irregular arrangement of single rectangular buildings. The Early Bronze Age pottery is handmade, and an interesting find from 1997 was a terra-cotta model of a snake, found in level six.

An Early Bronze Age cemetery had previously been found on Tepe I at İkiztepe, and the excavations at Tepe III in 1999 appear to have found an industrial quarter of some description (presumably for working or processing metals). Several hard-backed clay ovens of oval or subrectangular shape have been found here, some of which had a working area in front of them. One of the ovens had a wooden structure built around it and appears to have been repaired on three occasions, and another may have been equipped with bellows. Finds from levels two, three, and four included terra-cotta figurines, a whetstone, a bronze pin, and a spoon, arrowhead, and cutter all crafted from bone. An infant burial was also found this year.

A survey of the surrounding region was made to try to locate sources of ores in the vicinity. On the western side of the Emir Çayı valley, a source of arsenic was located, and analysis has confirmed that arsenic was also being used at İkiztepe. Evidence of arsenic copperworking from Kozlu dates to 2800 B.C. There was also Hellenistic period slag at the site. Also at Tepe III an open kiln and two graves of late Iron Age date were excavated, and sherds of undecorated and painted pottery with geometric patterns were found.⁷⁵

Kınık-Kastamonu. Rescue excavations continued at this site, which has already produced an amazing collection of Hittite rhyta, relief bowls, a statue, and

⁷³ For brief preliminary reports, see *Anatolian Archaeology* 3:20–1; 4:21–2; 5:16–8.

⁷⁴ An article on the transition from the Bronze Age to the Iron Age at Sos Höyük appeared in *AnatSt* 49 (1999) 153–8.

⁷⁵ An article on İkiztepe in the late Iron Age (which also

includes details on a Hellenistic tomb found at the site) has been published in English in *AnatSt* 49 (1999) 27–54. The results of the 1996, 1997, and 1998 seasons are now published in *KST* 19 (1998) 311–22; *KST* 20 (1999) 485–505; *KST* 21 (2000), respectively.

a crystal rhyton. The features found in recent excavations appear to be mostly industrial, including workshops, silos, and ovens, all built from fieldstones. Metalworking slag was found lying on the bedrock, and there is evidence of pottery production. Other finds include a crucible and wasters.

Kültepe-Kaniş. For 50 years, excavations at Kültepe-Kaniş have provided an unrivaled amount of information that illuminates not only the history of Anatolia and Assyria but also the roots of Hittite art. Recent excavations, under the direction of Tahsin Özgüç, have concentrated in the *karum* of the lower town, where a street flanked by rectilinear multi-roomed houses has been uncovered, dating the period of the Assyrian trade colony (Kültepe-Kaniş II and Ib). Typical pottery includes high spouted pitchers, *kantharoi* with quadrafoil mouths, animal *rhyta*, and vessels stamped with the *signe royal*. One jug has a horse's head *protome* at the point where the handle adjoins the lip of the vessel, a type that is known in later Hittite times but is seen here in an earlier context. A terra-cotta plaque with a scene of a family of gods also prefigures Hittite art in its depiction of the clothes and heads of the figures. Two forms of "çarık" (terra-cotta models of shoes with pointed, upturned toes) can be identified. The earlier form had careful painted decoration, and the second had relief decoration. More stamp seals of local Anatolian type and cylinder seals of Assyrian type have also been found.⁷⁶

Kaman-Kalehöyük. Excavations here are now in their 14th year and, under the direction of Sachihiro Omura, they are currently concentrated on the large northern trench, with the objective of further clarifying the stratigraphy of this large, 280 m diameter, 16 m high mound, set in rich agricultural land. Five levels have now been identified, dating from the Early Bronze Age to the Ottoman period. The most important results of the last few years are as follows.

All the pottery of the lowest level (Kaman V), which is handmade, is finely-produced and dates to the final phase of the Early Bronze Age. This period has modest houses with many pits. The next level (Kaman IV) also has handmade pottery and dates to the Middle Bronze Age with parallels to the Alişar three or Kültepe-Kaniş third and fourth periods.

The architectural remains of the Assyrian Colony (Kaman IIIc) period levels showed signs of burning and human skeletons, and a number of bronze weapons were found on the floor, alongside bullae, seals, and pottery, including red high spouted pitchers. One bulla has a bird motif that resembles one from Karum-Kaniş level Ib. This destruction is dated by the excavator to the 18th century, at a date somewhere before 1745 B.C. Excavation continued in the 15 m diam. stone-lined pit of the Old Hittite (Kaman IIIb) period, the function of which is still not clear. The pit is fully 4.5 m deep, and after digging down 4 m, a layer of ash was encountered in which were many bullae. These may not necessarily have been in situ, and S. Omura suggests that the site may have been unoccupied at this time. Other than the pit, a wide (1.5 m) 10 m long stretch of wall was uncovered that had been built on the Kaman IIIc destruction level. From the Hittite empire period (Kaman IIIa), finds included a biface stone stamp seal with a tree-of-life flanked by goats motif on one side and a hieroglyphic inscription on the reverse.

Levels IIc and IId are distinguished by their architecture and date to the second half of the eighth and start of the seventh centuries B.C. The houses of period IIc are single-roomed pit dwellings and those of IId are the same but with the addition of postholes. A cellar of level IIb, of the early seventh century B.C., contained a faience scarab, a Phrygian fibula, and a Scythian arrowhead. The architecture of level IIa, which dates from the second half of the seventh century to the fourth century B.C., is typically built on a single line of large stone blocks, and the buildings have small rooms. In one room the floor appears to have been relaid two or three times, and here a faience cylinder seal of the late eighth/early seventh century B.C. and a faience stamp seal in the shape of a lion were found. Also found in this level were a scarab, a bronze plaque, an iron blade, and a very attractive, although sadly fragmentary, animal's head carved in transparent rock crystal.

S. Omura's general survey in Anatolia, begun in 1986, has continued to identify and document a large number of sites and objects from surface collection, dating from the Neolithic period onward, in a broad region around Kaman-Kalehöyük.⁷⁷

⁷⁶A new book by T. Özgüç has also appeared (1999). Another important publication from this site is Michel and Garelli 1997. On dendrochronology work based on this site, see below, under "Dendrochronology."

⁷⁷Preliminary reports in English have now been published for the 1994 excavation and survey works (Mikasa 1996); excavation and survey results for 1995 are similarly published (Mi-

kasa 1998). Specialist reports on aspects of conservation and archaeometry work at the site, many of which are in English, are published in *Kaman Kalehöyük* 6, 7, and 8 (1996, 1997, and 1998). Reports in Turkish on the 1996 and 1998 seasons appeared in *KST* 19 (1998) 311–22; *KST* 21 (2000) 217–28. Similar reports on the survey work have appeared in *AraşST* 14:283–302; *AraşST* 15:41–61.

Boğazköy. Jürgen Seeher, German Archaeological Institute in Istanbul, reports on recent excavations on Büyükkaya, which constitutes the north-eastern part of the site of Hattusa:

The earliest settlement of Büyükkaya, and of the area as a whole, dates from the sixth millennium B.C. in the Chalcolithic period. After a long pause in occupation, there were two phases of settlement in the late Early Bronze Age, which disturbed the earlier Chalcolithic layer. Although there is much interesting early Bronze Age material, including ovens and stone casting molds, these levels were themselves in turn disturbed. Settlement remains of the Hittite Old Kingdom period were encountered on all three of the site's plateaux, but no clear picture of activity in the period is possible because of the later activity. The east wall was the earliest defensive wall, dating to the turn of the 15th–14th centuries B.C. at the latest. This wall continued in a northerly direction, surrounding the northern and western part of the lower city and united with the so-called postern wall at the southwestern side of the old city. On the southern spur of the upper plateau on Büyükkaya is a large building complex of the Hittite Imperial period that presumably had some official function.

In the developed Hittite Imperial period, the east wall was built over by a new wall that no longer continued in the direction of the northern town, but rather bent from the northeast spur towards the west, and Büyükkaya became a citadel. On the lower and middle plateaux, large square-shaped pits, from 6 × 6 m to 12 × 18 m in size, were dug to serve as underground silos for the storage of cereals under airtight conditions. Eleven silos have been identified but there were probably several more.

The new excavations have not confirmed the prior assumption that Büyükkaya was first fortified in the 13th century B.C.; in fact it has been shown to have been enclosed much earlier than the town area. Any connection between the contemporary activities on Büyükkaya and the graveyards at Os-mankayası and Bağlarbağıkayası and the rock sanctuary at Yazılıkaya could not be made. Büyükkaya was being heavily fortified in this period in order to keep stored cereals safe here.

In the lower city, behind the postern wall, halfway between Kızlar Kaya and Büyükkale, a building com-

plex of the early Hittite empire period was reinvestigated. This structure had been tested in the 1960s, and in 1998 and 1999 it was identified as grain storage facility. The silo complex was built in the same period as the postern wall, or earlier. The complex is 118 m long and between 35 and 40 m wide, oriented northwest–southeast and with two rows of 16 chambers each. Each chamber is 6 m wide, 13–16 m long, and with a floor made of broken stones. The 1.5 m thick walls stand on sockets of broken stone and survive up to 2 m in height. The silo chambers were stepped into the slope of the land, and the difference in height between one end of the complex and the other is about 15 m. Clay packing used as insulation on the outer walls shows that, for the most part, the building lay underground. Twelve silo chambers were destroyed by fire, their mudbrick walls having been burnt, with impressions of wooden planks and beams at 30–40 cm intervals preserved. The upper part of the mudbrick dividing walls collapsed into the chambers below. In one place the height of one of these walls could be reconstructed: it must originally have stood at least 3.8 m high on its uphill face and 4.5 m high on its downhill face.

The chambers contained a massive quantity of carbonized grain. The grain was not totally incinerated because of the principle on which these storage silos worked: that is, they were airtight. Directly on top of the grain a thick layer of straw was laid as insulation, and on top of that was a 1 m thick layer of clayey earth. This worked to ensure that when the silo complex was burnt, the grain became carbonized but was not totally destroyed. Botanical research by Reinder Neef has shown that barley was the most common grain, with one silo chamber containing einkorn. Also of interest were seeds from other crops and weeds found together with the grain in the silos. There are several hundred tons of carbonized grain here, which seems to be the largest find of its kind in the ancient Near East. The size of the silo complex, however, which is longer than a football (soccer) pitch and more than half as wide, is even more unusual. This could have stored up to 7000–9000 m² of grain, enough for the annual requirements of 20,000–30,000 people. This clearly shows that this was not just supplies for the city of Hattusa—for here was stored a part of the state's treasure and the power base of the Hittite Great King.⁷⁸

⁷⁸ Recent developments in the Iron Age at Boğazköy are mentioned below, under "Iron Age: Central and Western Anatolia." Interim reports on the 1997 and 1998 seasons have now appeared, in German, in *AA* 1998, 215–41 and *AA* 1999, 317–44, respectively. The latter report includes a new topographic map of the site. A new guidebook by Jürgen Seeher, *Hattusha:*

A Day in the Hittite Capital (1999), is now available in English, German, and Turkish versions. Annual reports in Turkish appeared in *KST* 19 (1998) 483–96, *KST* 20 (1999) 417–32; *KST* 21 (2000) 299–308. See the Boğazköy Web site at www.dainst.de/de/pro/hattuscha.

Alaca Höyük. In 1997 and 1998 the work of Aykut Çınaroğlu was concentrated on the cleaning of stonework, including the famous Sphinx Gate, to remove a red microfungus that had started to erode the stonework. The stone had to be laboriously cleaned by hand with water and a brush before a fungicide was applied. This work allowed some of the previously excavated blocks to be reexamined and occasionally new in situ pottery was found. Geophysical prospection work was also carried out.

In 1999, excavation was begun under the Phrygian houses to the east of the Mabet Saray. Sections of two walls were uncovered—one made of mudbrick and one of stone. By means of careful excavation, the surface of the mudbrick wall was cleaned to reveal the imprint of reeds that had originally been against the wall, possibly to create a pocket of stationary air against the wall for insulation. Finds included early and late painted Phrygian pottery. The curved stone wall was made of close fitting polygonal blocks. The fill of the wall was packed with stones and earth, the exterior side is missing, and only the interior face survives. This may have been the wall of a temenos enclosure. The finds included seal impressions, a small stone idol, obsidian, a fragment of the foot of a rhyton, and second-millennium pottery including high spouted jars.⁷⁹

Ortaköy-Çorum. Aygül Suel has continued to excavate in the two Imperial Hittite buildings, A and B. Recent work on the west wing of building A has shown that it was 27 m long and constructed of fine masonry. There may have been some kind of ramp here, but it was damaged by later burials. The area around the building was cobbled. Approximately 3,500 tablets and fragments of tablets have now been found in this one building. It is dated by dendrochronology to 1365 B.C.

At building B, excavations of the huge depot continued, with 40 pithoi having been found across several rooms. This area was also disturbed by later tombs. The archive of this building also now appears to have been found, and a number of tablets, including oracle texts and letters similar to those from building A have been found, although they are heavily burnt.⁸⁰

Kuşaklı. Excavations at this important Hittite site, the ancient name of which was Sarissa and which has close parallels to Boğazköy, continued under the direction of A. Müller-Karpe. Work was carried

out in several locations, including at the site of temple II on the acropolis, where over 30 excavation grids have now been opened. A total of 83 rooms have been found, forming a single building complex around a central courtyard, which may have been a temple for the weather god. The building had two entrances, each 3 m wide, one of which had a guard's chamber.

On the west slope, three building layers were identified, the lowest of which dates to the Hittite Old Kingdom period. From the Hittite Imperial period, nine houses, the plans of which parallel Alişar, have been identified. Faunal analysis revealed a large percentage of sheep, goat, and hunted animals (including wild goat), but relatively few cattle.

At the City Gate, excavations were carried out following a geophysical survey. Uprights for door-jambs with a door socket as part of the same block were found. These are known at Boğazköy, as are drilled orthostats, some of which were filled with burnt wood. However, the gate was of a Syrian-Levantine type that is unknown from Boğazköy. Geophysical survey beyond the city wall suggests the existence of a viaduct leading up to the gate.⁸¹

Kilise Tepe. In his final seasons in 1996 and 1997, J. Nicholas Postgate, working in association with Silifke Museum, excavated Bronze Age and Iron Age layers on the northwest side of the mound. Although this was originally planned as a rescue excavation, changes in the level of the Kayraktepe Dam mean that this site will not now be destroyed.

In a deep sounding, Early Bronze Age layers were found and were divided by the excavators into seven phases from the EB 2 (phases h, i, j, and k) to EB 3 (phases e, f, and g) periods. These layers were found above the conglomerate bedrock and represent the earliest occupation of the site. From phase j came in situ EB 2 pottery, including handmade painted jugs with painted red "net" patterns, and a "champagne cup," found in the debris of a mudbrick room that had been destroyed by fire. Excavations of the EB 3 phases (e, f, g, and h) added greatly to the understanding of ceramics and architecture, as well as numerous flints and spindlewhorls. In phase g was a building, the floor of one room of which had been repeatedly relaid with layers of fine yellow plaster. In phase e there were no architectural remains, and in this period the area appears to have been an open area used for large storage

⁷⁹ For a preliminary report, see *KST* 21 (2000).

⁸⁰ Annual reports have been published in *KST* 19 (1998) 515–28; *KST* 20 (1999) 433–44; *KST* 21 (2000) 321 ff. For the analysis of a sample of textile recovered from the site, see L. Türker and Ş. Demirci in *ArkST* 8 (1998) 39–47.

⁸¹ For reports, see *MDOG* 129 (1997) 103–42; 130 (1998) 93–174; 131 (1999) 57–113. See also *KST* 20 (1999) 445–66; *KST* 21 (2000) 309–20, and G. Wilhelm, *Keilschrifttexte aus Gebäude A, Kuşaklı-Sarissa* I.1 (Rahden 1997).

pits. Also from the Early Bronze Age layers came the skeleton of a child, the only burial to be found at the site, outside of the Byzantine church.

The Middle and Late Bronze Age layers (levels IV and III) included pottery lids of type known from Tarsus and a large numbers of carbonized figs. Layer III, which on the basis of late Hittite pottery found in it, was presumed to date from the Late Bronze Age was dated by dendrochronology samples taken from some carbonized logs to 1381 B.C. Further samples have also been taken from building timbers in level IIc. Beneath the Iron Age levels were some sherds of Mycenaean LH IIIC bowls and cups from level IIc, demonstrating links to the Mediterranean. This pottery also provides a link to the precise chronology of the Aegean, which is particularly important, given the dendrochronology results from the site.

The most intriguing building on the site is the "Stele Building" from level II. It had solid foundations of four or five layers of stone and measured about 18 × 14 m. In phase IIc, this building was destroyed by fire. Finds from this building included a hoard of *astragali* from different species of animals. This building had a central hearth and probably an open courtyard. In the area around it carbonized grain and burnt olives were found in jars, sunken pits, and a semi-basement room.

To the east of the "Stele Building" was another building with two parallel rooms, reached from an L-shaped open space, paved with irregular slabs. Pottery from this building included pilgrim flasks and a trefoil-mouthed jug. This building had also been destroyed in a fierce fire, and both buildings appear to have been burnt, reoccupied, and then burnt again.⁸²

Külhöyük. After a two year break, rescue excavations at Külhöyük were resumed by the Museum of Anatolian Civilizations. Excavations both on the summit and on the slopes revealed Bronze Age architecture and a series of ovens probably dating to the Early Bronze Age.⁸³

Western and Coastal Anatolia

Gökçeada. Excavations were carried out on this north Aegean island by Halime Hüryılmaz, and five architectural levels were identified. The first level has a "Cyclopean" stone wall made of large unworked stones. There is some Mycenaean pottery from this level, but Mycenaean involvement in the site appears to be limited. Under the Cyclopean

wall was the second architectural level that had the remains of walls, including fortifications on the southern side, a socketed stone axe, and a schematic idol. In the third level there was a small wall that was partly obscured by the later fortification wall. Single handled cups from this level appear to parallel those of the Troy 1f period. There were no architectural remains from the fourth level, although a fragment of a clay hook of typical north Aegean Early Bronze Age (Troy I) type, which is also found in Macedonia, was found. There were also no architectural remains from level five.

Archaeobotanic research identified remains of wheat, pulses, grape pips, and barley. Faunal analysis identified sheep, goat, wolf/dog, rat, and pig bones, as well as mussel shells.⁸⁴

Bademağacı. The excavations of Refik Duru have now identified five Early Bronze Age architectural levels at this site. One-fifth of the total area of the third Early Bronze Age period town has now been excavated, and a radial settlement plan with megaron buildings built side-by-side has been revealed. One of these buildings had two antechambers, and it therefore is not a true megaron. The reason for this is not known and it may have been a gateway or other unique structure. The slope of the hill was covered using small stones and above this was a wall, probably a defensive wall or rampart. The pottery is typical of the Early Bronze Age in western Anatolia and includes high-spouted pitchers, two-handled pitchers, and tripod forms. Many seals and idols were also found. Near the defensive wall, over 300 tear-shaped artifacts, made of limestone a few millimeters thick, were found.

In a later period, a church was built on top of the hill. For the Neolithic period of the site, see above under "Neolithic: Coastal and Western Anatolia."

Eastern Thrace Project. M. Akman has published a comprehensive article on the survey of dolmens in eastern Thrace and on the excavation of the Arpalık Mevkii Kapaklısı dolmen in Lalapaşa.⁸⁵ For a general assessment of the eastern Thrace dolmens, see Akman's 1999 article on Megalithbauten im türkischen Thrakien.⁸⁶

Sarhöyük/Dorylaion. A. Muhibbe Darga continued to excavate the Bronze Age and Iron Age levels at this site. The Hittite deposits were covered by thick Phrygian levels that contained a great deal of pottery and a royal name seal. There were many

⁸² For interim reports, see *KST* 19 (1998) 209–26; *KST* 20 (1999). For shorter annual reports, see *Anatolian Archaeology* 1:7–8; 2:10–11; 3:8–10; 4:13–4; 5:11.

⁸³ Reports appeared in *MKKS* 7 (1997) 179–97; *MKKS* 10 (2000) 25–34.

⁸⁴ For reports on the 1996, 1997, and 1998 seasons, see *KST* 19 (1998) 357–78; *KST* 20 (1999) 311–24; *KST* 21 (2000) 229–38.

⁸⁵ Akman 1997.

⁸⁶ In Beinhauer et al. 1999, 239–50.

mixed Hittite and Phrygian deposits. In one room of the Hittite level, numerous bone tools were found. The artifacts included standard Hittite pottery and bronze pins with rolled heads.

Troy (Troia). Manfred Korfmann, Tübingen University, reports on the last three years of excavations at Bronze Age Troy:

A reinvestigation inside the citadel to the east of the well-known Troy II Megaron buildings was made in order to find evidence of earlier buildings. In 1997, in an area of just 125 m² and 2.5 m deep, 11 construction phases marked by massive stone foundations were identified. In 1998, further stratigraphic investigation confirmed the existence of seven layers, previously unnoticed, between Late Troy I and Troy IIc, created by repeated leveling and rebuilding. The orientation of these buildings was generally unchanging, and the ceramics showed a smooth transition from Troy I to Troy II; thus no clear division of the two periods should be drawn.

Excavations on the citadel wall near the Troy II Citadel Gate FO in 1997 confirmed architectural continuity between Troy II and III. Therefore, cultural continuity can now be shown between Troy I, II, and III, which were previously thought to be discrete periods. Widespread along the Sea of Marmara and the northern Aegean, we call this entity the "Maritime Troia Culture." In the closing days of the 1998 season a well-preserved megaron building, with plaster walls standing more than 1.5 m high, was found. This had the typical features of a megaron, including a central room and porch, a circular central hearth, and an altar. Radiocarbon dating of some carbonized barley puts the destruction of this megaron at between ca. 2290 and 2200 B.C. In 1999, work continued on the anteroom of the megaron, and the stratigraphy of this area was further clarified. An earlier floor showed that this building had been in use for some time until the building was destroyed by a fire, one of three such sweeping fires that now appear to have affected this part of the site. In my (M.K.'s) opinion, "treasures" came to light from each of these three fire destruction deposits in the old excavations. After the destruction of Megara IIA and IIB, the main buildings in the citadel moved to the area east of the (old) gate FO, and smaller buildings were constructed here. This is neither "impoverishment" nor "a fundamental social change in social structure" as has been previously suggested, and finds from 1999 show continuing wealth.

Excavations at the south gate and tower VII showed that the citadel's most important tower was not built until the end of Troy VI or early Troy VIIa

(i.e., ca. 1200 B.C.) Finds relating to cult here and stele found near all of the gates of Troy suggest that cult activities took place at the gates.

In the lower town, a number of excavation projects uncovered Bronze Age material. The most important outcomes were the considerable increase in our understanding of the lower city in the Troy VI period and water supply of ancient Troy.

South of the citadel, near the later Odeion, a 5 m wide area of stone paving, dating to Troy VII or VI was found, but its full extent could not be ascertained. A massive house of the Late Troy VI period was found, however, and this is firm evidence that such buildings existed in the lower town in this period. In 1997, in the area to the west of the citadel, burnt layers towards the end of both Troy VI and VIIa period were found; the former destruction was probably caused by an earthquake, and the latter by war. In 1998, three buildings with lime and stone flag flooring, also of Troy VI date, were exposed.

Traces of metalworking in Troy VI were found at edge of the lower city area, and 10 kg of *Murex* shells are evidence of purple dyeing as part of a sophisticated textile industry at the site. In the 14th–12th centuries B.C., large houses with stone foundations were built here and covered a large part of western lower city. Other finds of interest from the Troy VI period included a large rectangular floor paved with stone flags, an infant burial, a clay stamp, faience beads, and a trefoil bone arrowhead.

A 20.5 m long east–west trial trench was excavated on the west slope, but no trace of the Troy VI lower city wall could be found in this area. The Troy VI city wall was probably cut away when the Hellenistic city walls were built. Despite this disappointing outcome, a great deal has been learned about the extent and plan of the Troy VI lower city in the period 1997–1999.

In 1998 a palisade wall was found in association with mid third millennium B.C. Troy I/II pottery (i.e., Maritime Troia Culture) on the eastern side of the city, identified by means of rock-cut "negative architecture" features. The limits of the lower city can be ascertained because of this bulwark. Only after hundreds of years after removal of this rampart did new Troy VI occupation begin over this area, including wooden buildings, stone paving, a burnt house with clay walls, and pits with burnt remains of wattle walls. There was no further occupation in this area until the Hellenistic period.

In 1997–1998, excavations near the northeastern bastion reexamined a Late Bronze Age well (4.25 m to a side and over 8 m deep) that had supplied the citadel with its water until about 1100 B.C. The sides of the well had burnt wood cladding, and it had been filled with stones, earth,

charcoal animal bones, and pottery (Troy VIIb₂). Although another 3.3 m of deposits remain to be excavated here, for safety reasons, excavation could not be continued.

In 1997–1999 excavations were carried out at the 36 m deep Spring Cave and the structures and rock cut basins in front of it, on the western side of the lower city. This consists of a passage, with several branches, that was cut into the rock and into which water seeps. In June to mid August, ca. 500–1400 lt of water a day seeped into the cave from the surface above, and this must have been a vital part of the water supply to the ancient city of Troy for a very long period. These are dated to the third millennium B.C., see below under “Archaeometry.”

In 1280 B.C., a treaty made between the Hittite king and Wilusa, believed by many to be Troy, invoked the name of the deity ^dKASKAL.KUR. This word, KASKAL meaning “path” or “tunnel” associated with KUR meaning “the underworld” or “under the ground,” obviously refers to this tunnel complex. This may also be the origin of the “beautifully” flowing springs and “depressions” in the rock mentioned in Homer, if one assumes that these springs could still be seen in Homer’s time (about 720 B.C.). For this and other reasons it is suggested that Homer or his informants were “eyewitnesses” of a ruined site in these days and years.

In addition to these Bronze Age works, considerable excavation of the later periods was made as well as surveys, restoration, and archaeometry (see below, under “Archaeometry”). The identification of the Spring Caves with the ^dKASKAL.KUR mentioned in the Wilusa/Hittite treaty of 1280 may strengthen the Wilusa= (W)Ilios (i.e., Troy) equation and further our understanding of the historical geography of western Anatolian in the Hittite period.⁸⁷

Panaztepe. A. Erkanal’s excavations at this important Bronze Age cemetery site have continued to produce impressive and important results. The site was apparently once an island but is now connected to the mainland as a result of silting.

The Middle Bronze Age continues to be the most important period of the site, although important Late Bronze Age and some Roman and Byzantine

material has also been found. The Middle Bronze Age graves were organized in rows and had a square base of stones with a raised circle of stones in the middle. Inhumations in jars were placed in the center. Although grave goods have not been found in all the graves, where they do exist they are of great interest. For example, in grave CF, in addition to bone fragments, bronze items and gold and carnelian beads were found. Other finds include pottery, spindlewhorls, mussel shells, and a sealstone.⁸⁸

Ulucak Höyük-Kemalpaşa. Altan Çilingiroğlu, Zafer Derin, and Eşref Abay report:

The Early Bronze Age is the second cultural level found in the middle of the mound. In the 1999 excavation season the irregular remains of stone foundations were found and removed in areas O11 and N12. Beneath the topsoil in area N11, in the west of squares a and b, a 5 × 0.6 m stretch of stone foundation, belonging to a square Early Bronze Age building, was found.

Inside and outside of the Early Bronze Age building, sherds of dark-faced slipped and burnished pottery with colors ranging from brown to black came to light. Small finds included slingstones and carefully made stone axes.

Liman Tepe. Excavations under the direction of H. Erkanal continued at the important Early Bronze Age to Middle Bronze Age transitional site of Liman Tepe.

In recent years, work has concentrated on the southern area of the site, where a section of a massive defensive structure was excavated in previous seasons. The new excavations have now extended this structure, which proved to be a massive bastion tower, approximately 20 m wide. This was built of slightly battered (inclined) stonework made of small and medium-sized stones and may have had a stairwell in it.

A continuation of this very impressive defensive wall and bastion system was identified, by means of aerial photography and underwater surveying, in the sea to the north of the site. These defenses appear to have used the same construction technique as those on land and at other contemporary sites. A new program of underwater research and excavation is due to start on this part of the site in the near future.

⁸⁷ Preliminary publication of the 1997 season has now appeared, in German with an English summary, in *Studia Troica* 8 (1998) 1–34 and for the 1998 season in *Studia Troica* 9 (1999) 1–70, which also includes a topographic color map of the site and its immediate environs. Interim reports in Turkish appeared in *KST* 19 (1998) 427–53; *KST* 20 (1999) 357–70; *KST* 21 (2000) 287–98. A new guidebook, *Troia: A Guide to Troia* (1997), by the director and staff of the excavations, is also

available in German. The Troy excavations have a Web site at <http://www.uni-tuebingen.de/ufg/troia>.

⁸⁸ Annual reports on progress at the site have appeared in *KST* 19 (1998) 455–66; *KST* 20 (1999) 371–82; *KST* 21 (2000) 279–86. The Middle Bronze Age pottery from the site is now published (in Turkish and German), see Günel 1999. Further information on the excavations at Panaztepe can be found at http://www.geocities.com/irerp_tr.

The underwater and land-based research together proves that Liman Tepe was a large site enclosed by an oval city wall. Excavations in previous seasons had uncovered a 20 m long Early Bronze Age corridor house, which would appear to be an important part of the central function of this community, possibly being the seat of political, religious, or economic authority. The scale of the remains and social organization seen at Liman Tepe is quite unlike anything so far identified in the western Aegean.

South of the Early Bronze Age bastion, Middle Bronze Age deposits were found, including an egg-shaped amphora or jar. This area, to the south of the EB walled settlement, appears to have been the site of a Middle Bronze Age lower town.

Some disturbed Late Bronze Age deposits were also found, including a child buried in a pot of Troy VIIb type. This was the first time that such material had been found at Liman Tepe, and this period will be investigated further in future campaigns.⁸⁹

Bakla Tepe. Beneath Byzantine tombs, Early Bronze Age levels were found. These included pithos burials and a cist burial, lined with large stones blocks and with a pithos set upright beside it. There were also flexed inhumations, wearing silver ornaments and accompanied by pottery and bronze weapons and pins. These date to the EB 2–3 periods. For bibliography and Internet address, see above, under “Late Neolithic and Chalcolithic: Western and Coastal Anatolia.”

Miletos. Excavations and research have continued here under the general directorship of V. von Graeve. Of most relevance to this article are the continuing excavations at the Temple of Athena site, which have yielded important new discoveries from the late Chalcolithic and Bronze Age periods. W.-D. Niemeier reports on the major outcomes of the work carried out by himself and Barbara Niemeier, Heidelberg University, and their team (including the author, A.G.):

Since 1995, the excavations in the area of the Temple of Athena at Miletos have shown that the so-called first building period of the earlier excavations was not the earliest phase of human settlement here, but the fourth. Thanks to an effective pump system, the following settlement sequence could be established. Miletos I: Late Chalcolithic (second half of the fourth millennium B.C.); Miletos II: Early Bronze Age (third millennium B.C.); Miletos III: Middle Bronze Age (ca. 1900–ca. 1750/20 B.C.); Miletos IV (end of Mid-

dle Bronze Age to beginning of Late Bronze Age, ca. 1750/20 B.C.–second half of 15th century B.C.); Miletos V (middle Late Bronze Age, second half of 15th century–ca. 13th century B.C.). Miletos VI (late Late Bronze Age, ca. 1300 B.C.–ca. 1100 B.C.). (Absolute dates according to the Aegean high chronology.)

There is evidence that Miletos, which is situated at the mouth of the Maeander/Büyük Menderes valley, formed from the very beginning an important gateway in the trade between Anatolia and the Aegean. Finds of obsidian in the levels of Miletos I and in Late Chalcolithic Aphrodisias appear to indicate that Melian obsidian was traded through Miletos into Anatolia. Miletos II had contact with the Cyclades as imports of Cycladic pottery and the head of an early Cycladic II figurine of the Dokathismata variety indicate. Most probably, Cycladic traders came to Miletos to acquire the metals in which Anatolia is so rich.

The finds from the levels of Miletos III demonstrate that contacts between Miletos and Crete and a Minoan presence at Miletos started as early as the 19th century B.C., indicated by imports of Kamares pottery of the MM IB–IIB periods, locally produced Minoan domestic pottery, and two seals and a clay sealing. Finds of local southwest Anatolian pottery appear to indicate that a considerable proportion of the population of Miletos III was formed by native people, but the seals and the sealing suggest an important role for the Minoans in Miletos III, which was probably a center for trade in metals between Anatolia and Crete.

Miletos IV was almost completely Minoan. More than 95% of the pottery is Minoan. There are fragments of countless Minoan-type conical cups. Many more fragments of fresco with Minoan iconography, style, and technique have been found. Linear A inscriptions incised on locally produced vessels demonstrate the active use of Linear A at Miletos IV. The most interesting find from Miletos IV is a sanctuary that had a mudbrick altar with four phases, three Minoan seals, and fragments of Minoan-type cult vessels of clay and stone. Miletos IV had two subphases. The first one ended in a destruction that happened in connection with the Thera eruption, as tephra was found in the destruction level. The second destruction in LMII/LHIIB was probably warlike and caused by conquering Mycenaeans, because Miletos V had an almost completely Mycenaean character.

⁸⁹ Interim reports have appeared in *KST* 19 (1998) 379–98; *KST* 20 (1999) 325–36; *KST* 21 (2000) 251–62. A report on metallurgical analysis of objects from the site is presented by

E. Kaptan in *ArkST* 8 (1998) 83–102. The Liman Tepe Web site can be found at http://www.geocities.com/irerp_tr.

Miletos V–VI is most probably the Millawanda of Hittite sources. The most interesting finds of Miletos V were three potters' kilns. The destruction of Miletos V is dated by Mycenaean pottery to the end of LHIIIA:2 which corresponds to the historical date of the destruction of Millawanda by the troops of Hittite Great King Mursili II ca. 1315 B.C. of Miletos VI and the "Dark Ages" unfortunately no undisturbed levels have as yet been found.⁹⁰

Torbali-Bademgediği Höyüğü. Here rescue excavations were carried out on the north side of the hill in advance of the construction of the Izmir-Aydin motorway by Recep Meriç of Dokuz Eylül University in Izmir. R. Meriç is the excavator at the classical site of Metropolis, nearby and to the south, and a brief report on his excavations here was included in the *Metropolis Bülleten* for 2000.

A 750 m long section of a broad (4 m) Late Bronze Age wall of "Cyclopean" stone construction was found. A sondage was made near the north gate and five levels were distinguished. Late Bronze Age material was found, including pottery from the 12th–14th centuries B.C., arrowheads, and stone axes. Many sherds of "Local Mycenaean" pottery were also found and, in the third level, several sherds of Mycenaean Late Helladic IIIc (early) pottery. In the deepest, fifth level were some fragments of red Middle Bronze Age pottery.

The Mycenaean pottery was identified by Penelope Mountjoy, whose article on the Mycenaean in western Anatolia Turkey in the first edition of the new-look *Anatolian Studies* is discussed above. On the basis of Hawkin's article presented in the same journal, Meriç has identified Bademgediği Höyüğü with the "Puranda" of the Hittite texts.

IRON AGE

Eastern Anatolia

Şanlıurfa. Since 1998, Fikri Kulakoğlu, Ankara University, has carried out a surface survey of first-millennium B.C. sites in this region, and reports here on the most important new discoveries:

Late Hittite cultural remains have previously been found at several sites in the Şanlıurfa region; these were visited again as part of our new survey. For example, in the small village of Gölpınarı, two basalt relief stele bearing a figures standing on a



Fig. 18. Şanlıurfa, fragment of an Assyrian style sculpture. (Courtesy F. Kulakoğlu)

bull and a stag had been found previously and are now on display in Şanlıurfa Museum. During the survey we found other sculptures in a different style from this village. The first one is a piece from a statue of a royal figure, measuring 22 × 34 cm. Only the nape of the neck is preserved, although it is clear that it has Assyrian style of hairdressing (see fig. 18). The second piece that we discovered during the survey is a part of an orthostat, 50 × 57 cm in size, bearing a lion and an inscription in West Semitic language carved on a basalt slab.

Although important sculptures had previously been found at Kabahaydar village, including a double bull-shaped basalt base, no new sculptural remains were found here. At Mehmedihan of Viranşehir, where another double bull-shaped base had also been found previously, several new fragments of carved stones and traces of settlement were found. A piece of a statue and almost half of a stele were found in secondary use built into walls. In the center of the village some traces of walls were found, built into which can be seen the hind part of a bull. It is not very clear if this is in situ or not, although a test trench may prove this in the future.

Another village that we visited was Aslanlı, 19 km west of Siverek. During construction work on the mound a colossal sculpture was found (see fig. 19). The sculpture, which is 2.05 m long, 45 cm wide, and 90 cm in preserved height, reminds us of the colossal gate sculptures of Assyria.

One kilometer south of Acıgöz, traces of settlement and unfinished or prepared stones for carv-

⁹⁰An interim report on the 1994–1995 seasons appeared in *AA* (1997) 189–248 and another is expected in a forthcoming issue of the same journal. The Linear A inscription (MIL KB 1) was published in *Kadmos* 35 (1996) 87–99. In addition, sev-

eral themed articles have now appeared, e.g., Niemeier 1997, 1998; Niemeier and Niemeier 1999. See also www.geocities.com/irerp_tr/niemeier.html.



Fig. 19. Şanlıurfa, fragment of a colossal sculpture. (Courtesy F. Kulakoğlu)

ing sculptures were found. Here also was an unfinished basalt lion sculpture similar to Assyrian examples of this type and period.

It is clear that strong evidence of Late Hittite culture was present in the Şanlıurfa region, with the evidence from Kabahaydar and Gölpınarı taking this line of attestations far eastward. Assyrian influence can be seen in the Aslanlı colossal sculpture and other sculptures found in the area, and further investigations will shed light on the historical geography of the region.⁹¹

Mezraa Teleilat. A large group of Iron Age figurines were found here this year. These were molded and painted and include female figurines, horses, and riders. One female figurine is holding a baby, and another unique example shows a goddess on the back of a horse. The context of these figurines is not clear as they are not in situ, but it is suggested by the excavator, M. Özdoğan, that there may have been a sacred building here that has yet to be found or has since been destroyed.

Central and Western Anatolia

Boğazköy. Jürgen Seeher reports on the Iron Age phase of the former Hittite capital:

New settlers came to the site of Boğazköy shortly after the abandonment of the Hittite settlement, in the 12th century B.C. at the start of the “Dark Ages.” The material culture of their small settlement, which lay on the ridge of Büyükkaya in the northeastern part of the Hittite city, is completely different to that

of Hittite Imperial culture. The pottery of this period is handmade and has a completely different range of forms; nevertheless, in the oldest levels there is still some wheelmade pottery and some shapes that are connected to earlier Hittite forms. The Iron Age at Büyükkaya is divided into five levels. The first two levels represent the Dark Age or Early Iron Age and are dated by radiocarbon to the 12th–10th centuries B.C. Many elements of the “Dark Age” local tradition pottery maintain elements of the Early and Middle Bronze Age central Anatolian repertoire, and the site was occupied by squatters rather than conquerors in this period. In the third, a large settlement of small, often single-roomed, mudbrick buildings on stone foundations, which were often semisubterranean, was built on the Büyükkaya ridge. With radiocarbon dates belonging to the 10th to ninth centuries B.C., this is the earliest Middle Iron Age settlement at Boğazköy. The fourth Büyükkaya Iron Age level continued seamlessly from the fourth and is contemporary with the first half of the Büyükkale II (“Older Phrygian”) period. Noteworthy is a small fortress on the upper plateau, whereas most of the remaining areas of Büyükkaya were left out in this period, and settlers most likely moved to join with those in the lower city and Büyükkale area. The fifth Iron Age level, contemporaneous with Büyükkale IIa and I, is only represented by stray finds.

Recent finds of Iron Age artifacts from Boğazköy include crucible fragments, metal tools, and a fine bull figurine, although this may be from a Hittite

⁹¹ For a preliminary report on the 1998 season, see *AST* 17 (2000) 1–10 (in Turkish), and a study of the Late Hittite scul-

ture of Şanlıurfa has appeared in Mikasa 1999, 167–81 (in English, with color illustrations).



Fig. 20. Kerkenes Dağ, the south side of the “palace facade” revealed in 1999. (Courtesy G. Summers and F. Summers)

context. These were found in rubbish pits above the Bronze Age silos, mentioned above, under “Bronze Age: Eastern, Northern, and Central Anatolia.”

İkiztepe. For details on the Iron Age levels at this site see above, under “Bronze Age: Eastern, Northern, and Central Anatolia.”

Kaman-Kalehöyük. The Iron Age/Phrygian levels of this site are described above, under “Bronze Age: Eastern, Northern, and Central Anatolia.”

Kerkenes Dağ. Dr. Geoffrey D. Summers and Françoise Summers, Middle East Technical University (ODTÜ), Ankara, report on the 1997 to 1999 seasons:

In the seasons up to 1999, the plan of the city was greatly extended by nonintrusive remote sensing techniques, such as aerial photography and a sophisticated global positioning system (GPS) to make a highly detailed map that now covers 80% of the city. A fluxgate gradiometer survey, now extending over one-third of the city, revealed subsurface features in remarkable detail. Computer generated simulations are produced by combining the different data sets in a geographical information system (GIS).

The 7 km defensive circuit was pierced by a total of seven gates. The city was planned, urban space being divided into blocks that contain discrete sets of buildings. Zoning within the city is also becoming evident, as is the scale and complexity of water management.

In 1999, work began to clear fallen stones from around the area of the Cappadocia Gate and from the eastern facade of a palatial complex. The Cappadocia Gate was singled out for this clearance operation because of its proximity to the exceptional complexes in the southern area of the city, and because it was the only gate with a well-preserved side cham-

ber. The gate, which is flanked by a double tower on the southeast and a single tower on the northwest, has great visual impact. Clearance work to the west of the gate uncovered a 32 m long section of stone glacis (sloping defensive bank), 4 m high and angled at 60°. To the east of the gate, a 6 m long section was cleared. Here the glacis was also 4 m high, but was more steeply inclined, at 80°. The gate passage itself was 6.2 m wide.

These defenses were erected on a natural bed of red gritty clay that had probably been leveled to form a base. The facing stones of the glacis were unusually large (up to 1.5 m in height), but they were nevertheless skillfully arranged in a kind of cyclopean stonework. There are no true courses, and the facing stones retain a rubble core. Dry stone construction was used throughout and the interstices between the neatly fitted large stones are finely chinked with small- to medium-sized stones. At the topmost level it is assumed that the glacis face extended for another meter before meeting the vertical face of a now missing structure. A huge amount of stone had fallen from the top of the walls and this almost certainly confirms that the upper wall was built of stone. Signs of burning from the conflagration that destroyed the Iron Age city could be seen in several locations. The upper stone wall appears to have been deliberately pushed over shortly after the destructive fire.

Clearance work was also carried out on the eastern side of the facade of the so-called palace complex (fig. 20). Here again the stone glacis stood 4 m high and showed signs of burning. Future work will be needed to confirm the location of the main entrance to the palace complex, which does not now appear to have been in the deep central niche of the glacis facade on this side.

Also in 1999, a program of geomorphological research was initiated, aimed at documenting the evolution of the Kanak Su Basin and the impact that the construction of this massive 250 ha site on Kerkenes Dağ must have had on the environment.⁹²

Gordion. There were no new archaeological excavations at Gordion in recent years, and activities have been concentrated on the continuation of the regional survey, architectural conservation works, and the preparation and opening of the new site museum. Despite the great depth of alluvium in some parts of the survey region (in places up to 12 m of alluvium has accumulated since antiquity), three new sites were identified to the east of Gordion: one early Bronze Age and Chalcolithic, one Phrygian, and one Hellenistic-Roman. Restoration focused on the terrace building four, which is an eighth-century building that had been used for food and cloth production. A previous experimental method of wall-capping, the “raised core procedure,” had proven to be so successful that the unsightly cement capping originally used to protect the other half of one of the terrace house buildings from degradation was removed and replaced with this new wall-capping method. The new museum has displays that trace the history of Gordion from the Early Bronze Age through to the Roman period and includes a single large display of the typical contents of one of the Phrygian period terrace houses.⁹³

Daskyleion. On the southeastern slope of the Hisartepe mound, a 100 m long section of a 5 m wide × 4.5 m high section of rampart wall was found. Although the building method employed on this wall bears some similarities to the walls at Troy VI and Liman Tepe (see above, under “Bronze Age: Western and Coastal Turkey”) the excavator, Tomris Bakir, suggests a Phrygian date for this site based on the number of Phrygian artifacts found in the immediate vicinity of the wall. These included fragments of Phrygian inscription, grey pottery with Phrygian graffiti, and painted, black-burnished and greyware Phrygian pottery. A 5 m wide projection from the wall is probably a bastion, although it may also have been a gate. Later, this area was leveled off with a layer of soil and an Achaemenid period wall was built.

Boztepe. Excavations were carried out here by Bradley Parker as part of the Upper Tigris Ilisu rescue area. In a sounding, Hellenistic pits were found cut into earlier Iron Age building levels. Domestic equipment was recovered, including loomweights, five small bowls and pedestals, and an elaborate stand. Other discoveries at the site are discussed above under “Neolithic.”

ARCHAEOOMETRY

As mentioned above in the introduction and “Bronze Age: Western and Coastal Anatolia,” a complex series of caves and water basin was excavated at Troy from 1997 to 1999. These caves were in effect a “mine for water” that must have been an important element of the city’s water supply. The caves appear to have been ancient in origin, but no prehistoric finds were made, probably as a result of washing activity in the Roman period. It was, however, possible to date the sinter (a calcareous deposit formed by springs) that had accumulated slowly on the exposed bedrock in microfine layers since it was first excavated and water began to flow through it (fig. 2). The sinter was dated by the Radiometry Research Station at the Heidelberg Academy of Sciences, with the earliest date being in the first half of the third millennium B.C., that is, the time of the “Maritime Troia Culture” (fig. 3) and ending in Roman times.

DENDROCHRONOLOGY

At Kültepe-Kaniş, dendrochronology samples have already provided a date of 1810 B.C. for the Palace of Warsama in the Karum Ib period. New dendrochronology samples have now been taken from oak timbers in the Old Palace of the Karum II period. As yet, the sequence from these samples cannot be matched with any others from the site. However, a 627-year continuous chronology for the Early to Middle Bronze Age from 2660 to 2033 B.C. has now been formed using samples of juniper wood from the Old Palace and connecting them with similar samples from the northwest trench at Acemhöyük. There is also the potential for this connection to finally be connected with existing chronologies that extend as far as the Iron Age. Dendrochronology was also used at Kilise Tepe, see above.⁹⁴

⁹² Annual reports have appeared in *KST* 19 (1998) 627–59 (which has a detailed bibliography of other publications at the end) and *AraşST* 14:331–58. A Web site exists for Kerkenes Dağ at <http://www.edu.tr/home/wwwkerk>, and a magazine, *Kerkenes News*, reporting on recent developments at the site, is published annually.

⁹³ A short report on excavations at the site in 1997 appeared in *KST* 20 (1998) 559–76.

⁹⁴ A report on the results of the Aegean Dendrochronology Project from 1996 to 1997 is presented by P.I. Kuniholm in *ArkST* 8 (1998) 49–63. The project has a Web site at <http://www.arts.cornell.edu/dendro>.

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