

## LESSONS IN ARCHAEOLOGICAL AND MONUMENT SALVAGE THE KEBAN EXPERIENCE \*

Sudden technical progress has created a worldwide dilemma for field archaeologists and art historians: are they to pursue their own academic interests while evidence disappears around them or should they try to keep one step ahead of the bulldozer? Salvage has become part of an international documentation problem which is especially pressing in developing countries. Here the speed of modern technical change, the lack of public awareness and appreciation, as well as the different nature of historical evidence make the dilemma even more acute than elsewhere. While developed countries have already experienced a number of centuries of penetrating industrial change and have gradually come to terms with it, the developing countries have jumped from a traditional world where craftsmanship, artistic work and social structure often represented an equilibrium set over many centuries. Thus, disruption can be immediate and total, not gradual and organic as it has been in the West. Many of the developing countries are homes of distinguished ancient civilizations which have much to teach modern man, not only about his own past but about his present. It is therefore especially lamentable that these very countries, while they have many noted scholars, do not have the technical prowess, the financial resources and know-how, and above all the organizational experience to pull together disparate groups for quick and effective action.

Turkey, however, has recently witnessed an extraordinarily effective salvage operation, initiated and directed solely in Turkey to salvage the historical heritage of a vast area in the eastern part of the country due to lie under the new lake of the Keban Dam <sup>1</sup>. This week as the first gates of the dam close on the upper Euphrates and the waters begin to rise is an especially appropriate moment to reflect on the elements which made this operation such a success. Lessons drawn from this experience may serve to point out ways to respond more effectively to the threat that large-scale public works present to historic areas, not only in Turkey but in many other countries as well.

While Turkey has already witnessed the loss of many unrecorded and unexcavated sites, as well as monuments, through

public works, the Keban Dam promised to dwarf all of these in magnitude, if not importance. In 1975 an area of 680 square kilometres will lie completely under the waters of this dam. Today the waters are already rising and by stages will have covered the whole plain in a few years. The dam itself rises to over 200 metres in a spectacular gorge just beyond the point where the eastern and western branches of the Euphrates meet. From time immemorial this river network has determined the course of life throughout the whole Mesopotamian valley. Earliest man made his gods around this mighty force, the myth of Gilgamesh expressed its mighty, mysterious power, while the ancient civilizations of Mesopotamia owed their strength to its whims and its abundance. Today modern man has stepped in to control these forces and re-orient them in a way that the ancients would only have thought of as *hubris*. As water collects behind the dam an artificial lake 125 kilometres long will form. Some 212 settlements of different sizes will be immersed by this lake and over 30,000 inhabitants will be forced to leave the area. Moreover, the ecology of the region, which appears to have been quite constant for centuries, will have been fundamentally altered.

The construction plans in 1965 spurred the author to direct a team from the Department for the Restoration and Preservation of Historic Monuments at the Middle East Technical University (METU) in a field survey to identify the historic monuments of the area. At the outset very little was known about it. In fact, the original survey was intended largely as an exercise for graduate students. To our surprise it yielded a wealth of unrecorded monuments from the Byzantine, Seljuk and Ottoman periods; these were photographed and measured by conventional methods. The team also remarked upon an unusually dense clustering of ancient mounds (*höyük*) in the area. These, however, were beyond the scope of the monuments survey and were not recorded in an exhaustive fashion. This archival inventory was published as a booklet, *Doomed by the Dam* <sup>2</sup>, and along with public exhibitions served to spearhead concern.

\* The author prepared this article when a member of the Institute for Advanced Study in Princeton during 1972-1973. The Institute's support enabled him to reflect on the course of the Keban Salvage Project while on leave from duties as the Chairman of the Department of Restoration at the Middle East Technical University.

<sup>1</sup> For the most recent finds this article has drawn on information kindly submitted to the author by the following scholars and partici-

pants: H. Çambel, H. Ertem, U. Esin, D. French, R. Harper, I. Ilter, H.Z. Koşay, I.K. Kökten, O. Köymen, D. Kuban, A. Ödekan, B. Ögün, S. Pekman, Ü. Serdaroğlu, M. van Loon, R. Whallon, Jr. Güven Arsebük.

<sup>2</sup> Cevat Erder; et. al., *Doomed by the Dam*, Department of Restoration, M.E.T.U., Ankara, 1967.

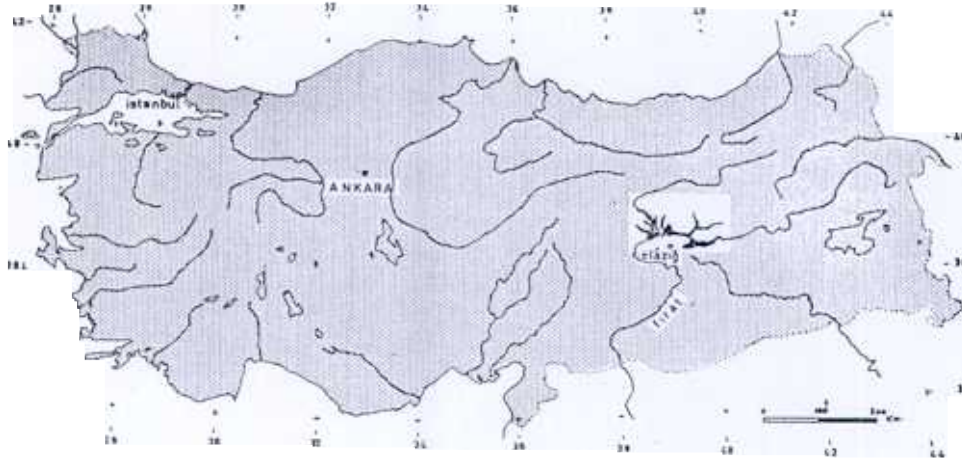


Fig. 1. - The position of the Keban Dam Reservoir area in Turkey.

#### INITIAL MONUMENT RECORDING

This surface-recording team began working in two villages on the northern shore of the Murat River (Cf. map). The first village is known as Eski ("old") Pertek because it had been gradually abandoned by the villagers in favour of more productive land. Its ten visible structures showed strong patterns of 16th-century settlement; its two major buildings, both mosques, had architectural details that were rather fine examples of regional character. Below a *türbe* (monumental tomb) with its striped facing of dressed stone stood the Baysungur mosque whose inscription dated it to 1572. This single-unit plan mosque formed part of a court connected with a foundation, a *türbe* and a bath of the same period. The adjacent structures were subsequently excavated in 1969 under the salvage campaign for thorough identification and recording.

To the south of this mosque lay another mosque of the 16th century, the Çelebi Ali Mosque; inscriptions dated its construction to between 1562 and 1573. Its plan was more complex than that of its neighbour. A single-unit domed space was followed by a triple portico, still an unexplained architectural curiosity; a second prayer space flanked the west side, and was in turn flanked by a fountain *eyvan*, a vaulted recess, opening to the west beside the minaret on the same side. Adjacent to the mosque were a *medrese* (Islamic college), *türbe* and latrine, all of which required excavation for recording. This was later accomplished under the salvage campaign.

In addition to this collection of Islamic edifices, east of the Çelebi mosque stood a church with a single barrel-vaulted space terminating in twin apses. A structure identified as a kiosk or part of a palatial building sat on a cliff overlooking the Murat (Arsanias) River. The lower-level wall-paintings and

decoration served to date it to the 16th century. A private bath building, also at the riverside, preserved similar features. On the other side of the river stood an inn, the Murat Han, believed to have been linked with the other bank by a bridge on the Baghdad-Istanbul military highway built during the Baghdad campaigns of Murat IV.

The second village surveyed, Til or Korluca, lies to the east of Pertek. Here we recorded three churches. The first had a quatrefoil plan in which three semicircular niche recesses served as apses and the fourth recess with rectangular plan was used as an entrance portico. The second, dated with the aid of inscriptions on the door to the 12th century, was a Syriac church. It had a Greek-cross plan. The three apses of the cross were covered by half domes, while the entrance had a narrow ground-plan. In 1969 we carried out sounding excavations here for better recording. The third one was similar to the one in Eski Pertek with its east end terminating in twin apses.

The largest building documented was a caravanserail known as Hanibrahimşah. The name connects it with Nizamettin Ibrahim of the Artukoğullari and dates it to the 13th century A.D. The open summer section of the caravanserail had been destroyed earlier and its foundations lay under the houses of the village, but the closed winter section was well preserved and had been used as a common storage building by the villagers. This section had a fairly rectangular plan. Nearby another caravanserail at a site likely to correspond to the Roman Daskousa was also documented. Its plan was similar to the one at Hanibrahimşah.

Most remarkable of all the structures encountered by the survey team was a bridge at the easternmost part of the lake area



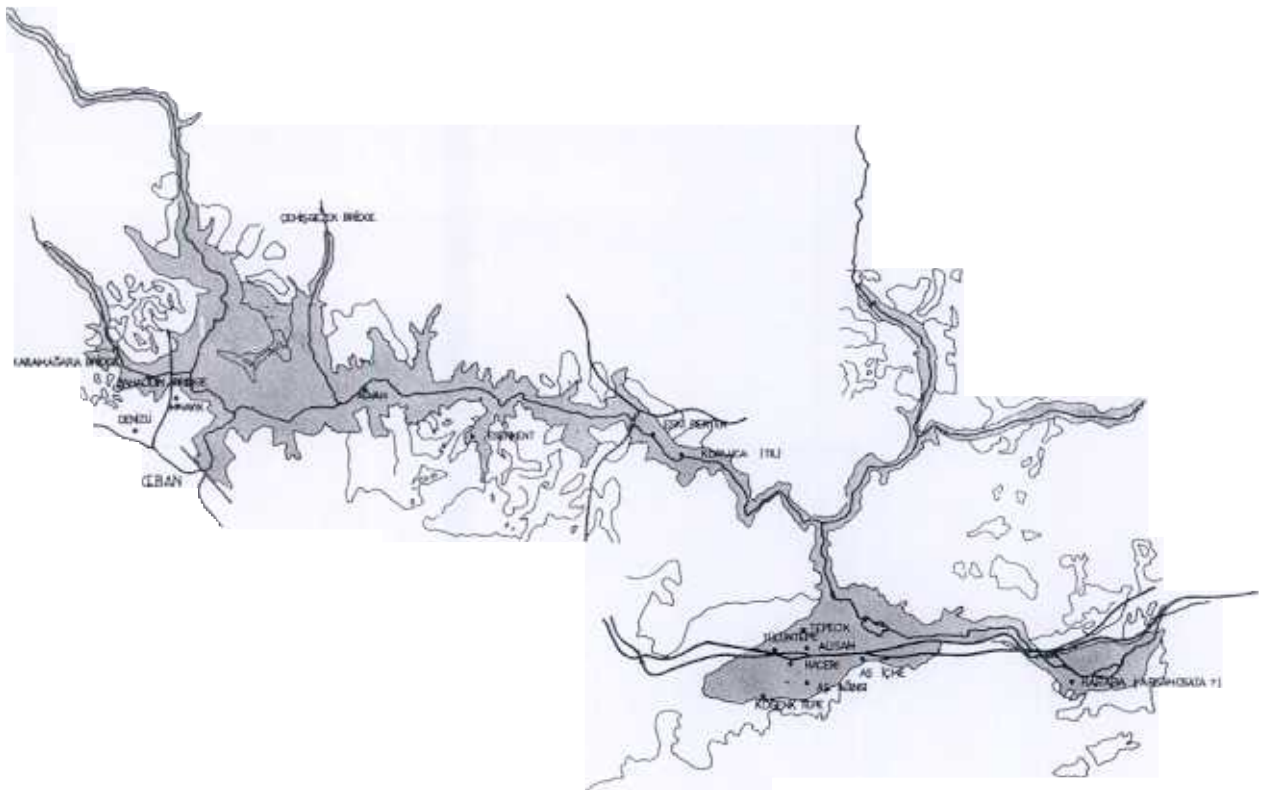


Fig. 4. - Sites documented by the Department of Restoration in the Keban Dam Reservoir area.

near the village of Ağın. This bridge had gone unnoticed until the METU survey. Later dated by Michael Gough to the sixth century A.D., the bridge bore an inscription, with one or two letters on each stone, reading in Greek, "May God Protect Thy Going Out and Thy Coming In From This Time Forth Even For Evermore". It also proved to be the most technically challenging subject for salvage.

#### PRELIMINARY ARCHAEOLOGICAL SURVEY

As the METU survey team was recording monuments it noted the large number of unrecorded ancient settlement mounds, *tepeyük*, in the dam's flood area. Independently of the restoration team a group of archaeologists was devoting close attention to this striking evidence of dense settlement in the valley. A joint team of the Department of Prehistory at Istanbul University and the Museum of Anthropology at the University of Michigan under the direction of Dr. Robert Whallon and Mr. Sönmez Kantman surveyed some selected areas of the region and searched for surface findings. In two and a half months they were able to cover 45 % of the whole area for a general

survey. This included 30 % of the total reservoir area, which was subjected to intensive survey. The areas chosen represented the most fertile and propitious regions for prehistoric as well as present-day settlement. The survey emphasized Altınova, the Golden Valley known in the past as Uluova and in ancient times as Kalon Pedion, followed by the Aşvan Area, Esenkent, Kalecik and Pulur. This preliminary survey located 47 prehistoric settlements; the number later rose to 70 after further field work. This remarkably dense clustering of prehistoric sites was certain to contain vital clues to man's earliest achievements in settled living outside the Mesopotamian valley. Unless a rescue operation could be launched quickly they were due to disappear under the reservoir, unknown and unexcavated.

The archaeological gathering of surface finds was carried out in a systematic way. First surface gatherings were made; then programming was prepared for the typological analysis and percentage studies which were to be made at a later date. In selected areas "gridded strip" and "randomized grid" sample methods for surface gathering were used.



## LAUNCHING THE CAMPAIGN

On the basis of these preliminary surveys the Middle East Technical University's President, Kemal Kurdaş, took the leadership in forming the Committee for the Salvage of Cultural Property in the Keban Dam Area. The Committee was exceptional in its international and inter-institutional character. In retrospect the unexpected and continuing success of the campaign seems to be due to the unusually diversified but fine

meshing of institutions, personalities, and skills. In addition to President Kemal Kurdaş and the author there were Professor Halet Çambel of Istanbul University, Professor Robert Braidwood of Chicago University, Professor Aptullah Kuran, then Dean of the METU Faculty of Architecture and now Rector of the Bosphorus University (formerly Robert College), as well as Hikmet Gürçay, the General Director of the Department of Antiquities and Museums, and Uluğ İğdemir, the General Director of the Turkish Historical Society.

Fig. 5. - View from the northeast in Eski Pertek of the Baysungur Mosque, dated 1572, before removal and reassembly, and the citadel which will remain as an Island.





Fig. 6. - The minaret of the Çelebi Ali mosque (1567-1573) in Eski Pertek as dismantled for relocation.

Another element of success appears to have been the surprising enthusiasm with which both scholars and public greeted the campaign. The Committee began with no funds whatsoever. Its first donations came through a fund-raising campaign initiated by a national newspaper, *Milliyet*, which in two months raised \$ 60,000 from the Turkish public. The donors were more important than the size of the funds. To our astonishment donations came from all over Turkey, from elementary school children and villagers to the highest government officials and businessmen. This was the first example in Turkey's history of active public concern for salvaging historical property.

Government donations from the central treasury raised the operating funds to over \$ 250,000 for the first season. The Committee thus had a solid basis for proceeding with the actual field operations. Over the planned seven-year schedule annual operating funds were maintained at a similar level through consistent government and private support.

#### OPERATING THE CAMPAIGN

Salvage activities covered a wide spectrum of field operations. By the end of June 1968 twelve Turkish and foreign teams were ready to conduct various projects in the area of the Keban Dam Reservoir<sup>3</sup>. The major groups of activities were fivefold:

<sup>3</sup> Over five years some 40 scholars directly participated in the field campaign. Many others assisted more briefly as expert advisors. Over 50 students took part in the field work each summer.



Fig. 7. - Reconstruction of the Baysungur Mosque at its new location in Yeni Pertek - southeast view.

1. Archaeology
2. Studies of contemporary rural architecture
3. Ethnographical research
4. Socio-economic studies
5. Salvage of historic monuments.

Policies vis-à-vis these different aspects of the project and their participants were novel in Turkey. Those members responsible for laying the groundwork for the project resolved to withdraw from direct participation in the field work, serving only in an advisory capacity within their areas of specialization. The Committee saw to it, however, that the highest competency obtainable among site directors was ensured. From then on it provided the technical, field and publication services, a high degree of coordination both in and out of the field, and all the administrative and financial aid required, without infringing upon the autonomy of each team. Individual directors were entrusted with a large degree of financial and administrative responsibility.

At the time of writing four bound volumes of field reports have been published through the Committee's publication services and under the auspices of the Middle East Technical University<sup>4</sup>. These alone cover the first three campaign seasons. In addition, individual reports have appeared in a large number of journals. The activities resumed below represent a small distillation of this voluminous series of publications.

<sup>4</sup> METU Keban Project Publications: *1968 Summer Work*, (1968 Yaz Çalışmaları) M.E.T.U. Keban Project Publications, No. 1 (2 vols), Ankara, 1970; *Keban Project 1969 Activities*, M.E.T.U. Keban Project Publications, No. 2, Ankara, 1971; *Keban Project 1970 Activities*, M.E.T.U. Keban Project Publications, No. 3, METU, Ankara, 1972; Yusuf Durul, *Baraj Gölü Çevresi Doküman Sanatları*, M.E.T.U., Ankara, 1969; *Keban Project 1971 Activities* is in press.



Fig. 8. - Southeast view of the Çelebi Ali Mosque as reconstructed in Yeni Pertek.

Fig. 9. - The Karamağra Bridge, dated by its inscription to the seventh century A.D., in its original position spanning the Arapkir.



## SALVAGE ACTIVITIES

### 1. Archaeology

Archaeological activities since 1968 may be divided into the geophysical and Stone Age survey of sites and the region in general and the work done on individual sites. Specific sites are reviewed below, progressing from west to east along the reservoir (Cf. map).

The geophysical survey was directed by Dr. Ali Yaramancı of the Department of Applied Geophysics at Istanbul University. During the 1968 season, surveys were devoted specifically to the application of the geoelectric resistivity method. The three localities of Ağın, Tepecik and Norşuntepe were specifically chosen beforehand for their physical peculiarities, their varying sizes and their structural characteristics as sample areas. Later the geophysical team divided into two groups, one to pursue completely routine work, the other to conduct measurements for scientific investigations with the aim of developing methodological results in the application of geophysics to archaeology. In addition to the mounds mentioned above, others such as Haraba, Körtepe, Pertek and Tülintepe were surveyed. This technique gave most concrete results at Norşuntepe, where a large Urartian palatial structure was located on the southern part of the hill.

Outside of this new work in field archaeometry more classical techniques of archaeological field survey were being applied by Professor Kılıç Kökten of Ankara University's Department of Prehistory in his exploration of the district for paleolithic remains. From his work in 1969 and 1970 he was able to draw a map of rock shelters, open-air sites, miscellaneous surface finds, paleolithic open-air workshops and previously unnoticed mounds. These, in addition to the results of his small soundings at Karataş in a cave and a rock shelter, gave the first evidence of habitation during the paleolithic period for this region of Turkey. As a result of this work, as well as exploration and excavation in 1971 and 1972 at Küllününini, Kökten has suggested a general paleolithic stratigraphy for the area.

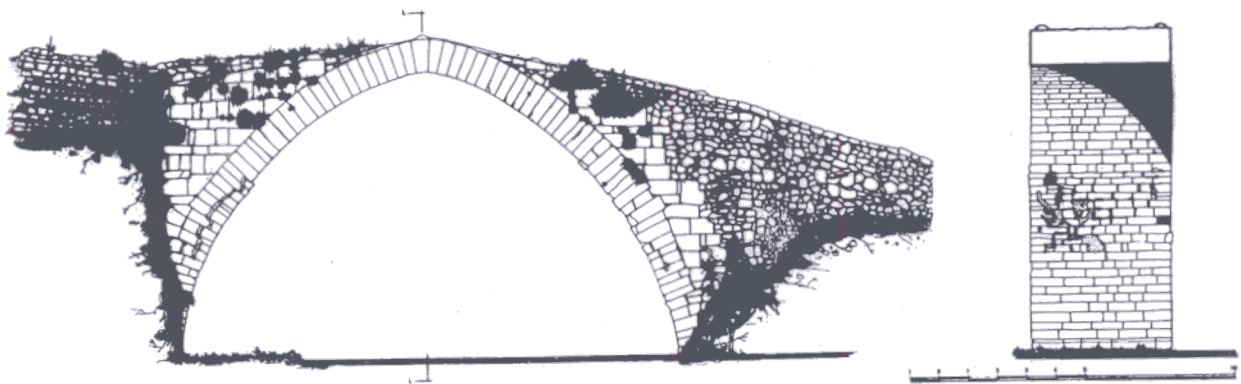
Following the sites along the map the reader will note their proximity to each other and the similarity of terrain. One particularly fortunate benefit of the salvage campaign has been, however, the very different approach each team has used for its site. While each has felt the imminent threat of the dam's inundation of the area in selecting his excavating style, each has employed an individual solution. This gives a broad spectrum from which to evaluate a variety of salvage approaches. It also gave young archaeologists in training unusually rich field experience; close at hand they could compare the results of varying approaches with their own team's.

One approach was to cover as much area as possible before flooding. This was adopted by Dr. Ümit Serdaroğlu from the Ankara University's Department of Archaeology, who organized a sizeable team with Dr. Hayri Ertem and Dr. Atila Tolun. Serdaroğlu thus opened five soundings at the Horşik Area near Ağın, and excavated the necropolis on the north as well as the Kalecik mound in the valley. Simultaneously Dr. Ertem took charge of the Kalaycık mound on the eastern shore of the Karasu which joins the Murat River to form the Euphrates.



Fig. 10. - Recording the Karamağra Bridge prior to transport.

Fig. 11. - Northern face and section AA of the Karamağra Bridge





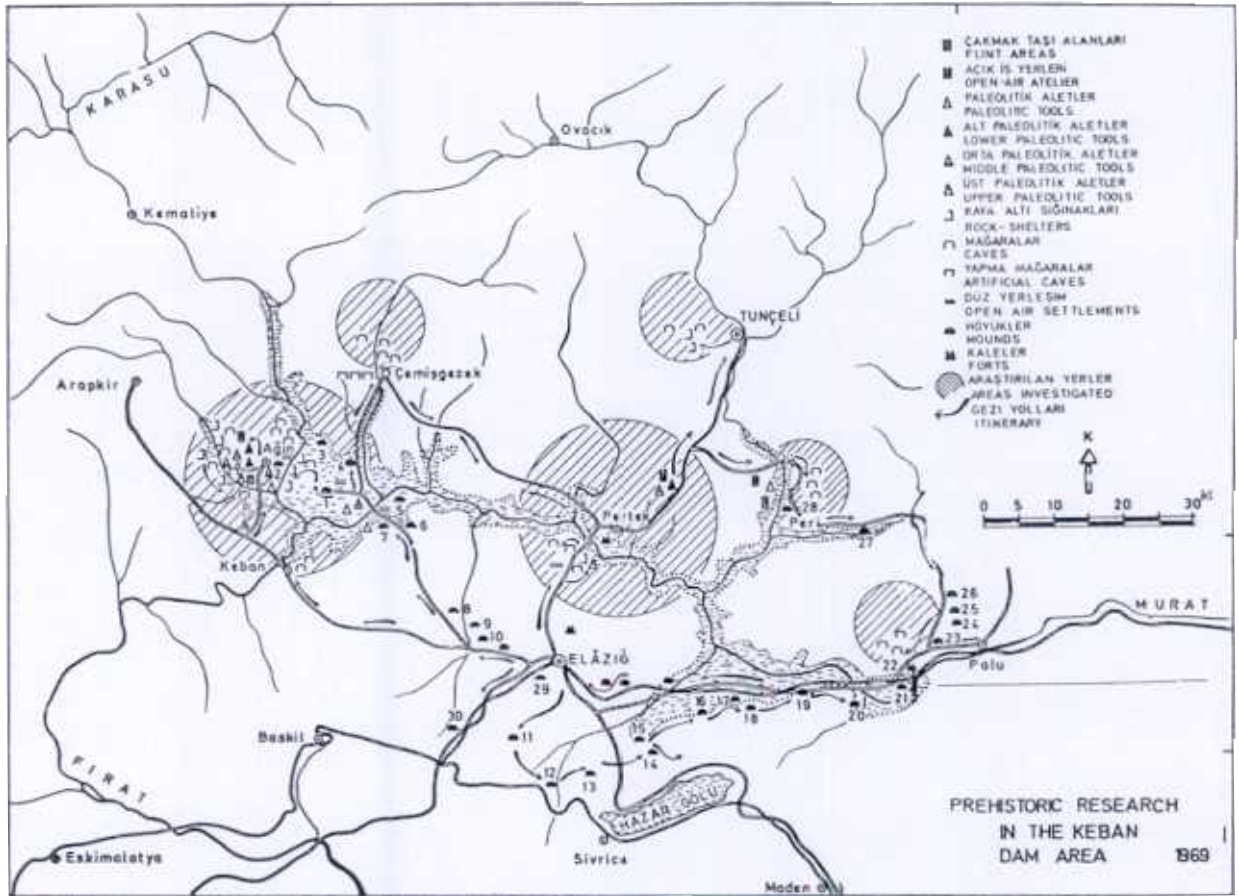


Fig. 1: Prehistoric research in the Keban Dam

This approach yielded an abundance of material. First the investigations in the area of Horşık called (A) revealed the foundations of a large rectangular building built on rock. Three rooms opened into each other and one of these had a mosaic floor. Among a quantity of Roman pottery a silver coin of the 4th century A.D. was found in the middle room. This building was possibly a Roman *granarium*.

Remains of a Byzantine church were recovered in area (E), where geophysical surveys had been done. The finds indicated prolonged use of the building. No definite indications were found for the construction period of the church, though it is probably of the 6th century. Pottery and coins as well as finds from a nearby cemetery indicated that the area had no large settlement after the 11th century A.D.

To the north of Ağın in the valley, excavation of the Kalecik mound revealed the existence of a Byzantine castle used for a relatively long period. Here it was also possible to establish several stages of Roman habitation below the Byzantine level. A large quantity of pottery of the 1st and 2nd centuries A.D. came from a storage area. Under the Roman layers Bronze Age layers were reached.

The *necropolis* situated at the end of the valley was composed of single, double or triple tombs cut in the surface of calcareous rock. The excavation of this Roman necropolis lasted four seasons. Adjacent to the rock-cut tombs, earth and stone tombs were also found. Finds indicated that the cemetery was used mainly from the first to the third centuries A.D. Among the tomb gifts were remarkable pieces of gold jewelry and precious stones, earrings, necklaces, bracelets, pins, finger rings and gold coins. These finds have led Serdaroğlu to believe that the Roman city of Daskusa was near Ağın and not at Denizli as previously believed.

In conjunction with these wide-ranging excavations Kalaycık tepe on the eastern shores of the Karasu was also dug, under the directorship of Dr. Ertem. This excavation revealed a stronghold of the Artukids of the 12th century situated above a Byzantine settlement of the 10th. There was no substantial evidence to prove a Roman occupation of the site. Beneath the Byzantine construction layer was a settlement of the 1st millennium B.C.

In 1969 Serdaroğlu also started on another site, known as Kilise Yazısı, which lies on the western bank of the Karasu

Yapı katları	KAPKAKAK	KAPAKLAR DAMGALAR	MOTİFLÜ PARÇALAR	IDOL	FIGÜRİN	KEMİK ESERLER	TAŞ ESERLER	ok ve mızrak uçları	
KUM-BRONZ ÇAGI									
	II								
	III								
	IV								
	V								
	VI								
	VII								
	VIII								
ERK ALKOL	IX								
	X								
NEOLİTİK	XI								
	XII								
	XIII								

EARLY BRONZE AGE

NEOLITHIC

ANA TOPRAK

Fig. 13 - Diagram summarizing the stratigraphy of the Pulur mound following its excavation



Fig. 14. - An altar from the late Chalcolithic period at the Pular excavation (Level X) as restored in situ before removal to the depôt.

Fig. 15. - Aerial view of the Tepecik excavation area.



opposite Kalaycık tepe. Here meticulous work by Dr. Ertem resulted in the discovery of a fortress of the Roman period consisting in towers and walls surrounding the hill. The complete absence of any Islamic finds, the very small amount of Byzantine material, and the finds of the Roman period indicate that the site was occupied only between the 1st and 3rd centuries A.D. The rooms with pithoi found in the trenches in the south-western area suggest that this section was for the most part assigned to storerooms.

A more confined but thorough approach to a single site was employed at Pağnik Öreni over four consecutive seasons by Richard Harper of the British Institute of Archaeology in Ankara. Situated on the west bank of the Euphrates some 25 kilometres upstream from Keban, the first trenches on the south-western side of the hill revealed poor architectural remains containing pottery from the early Bronze Age. After establishing that this limited occupation was confined to the early Bronze Age, Harper concentrated his activities mainly on the excavation of the Roman fort which occupied a large part of the hill.

From the outset Harper was able to detect that the stone from which the fort was first constructed was largely, if not totally, re-used from earlier buildings. A number of soundings have shown that these were not on the site of the present excavation. A major find of the last season was a part of the building's inscription set up by the Roman cohort; this stone may be dated to the first century A.D. The style of architecture, and especially the form of the towers, made it certain, however,



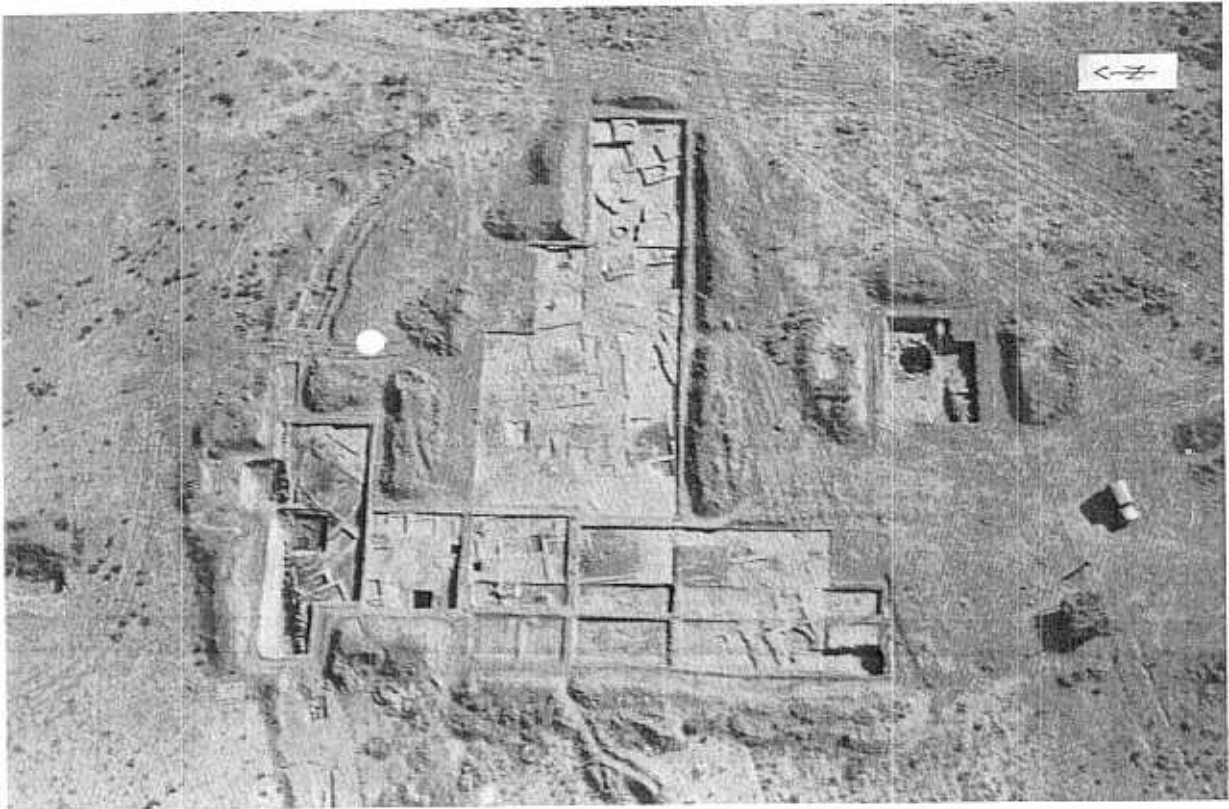


Fig. 16. - Aerial view of the Tülintepe excavation site.



Fig. 17. Aerial view from the east of the Norşuntepe excavation.

that the fort had been built at some date in the fourth century, but no more precise evidence has come to light. A tiny worn coin, probably of Leo I (A.D. 457-474), found in the upper rubble showed that already by the late 5th century the stone of Pağnik Öreni was on the move again to be re-used elsewhere.

A different, more statistical approach was used in 1968 at Fatmalı-Kalecik when Robert Whallon and Henry Wright carried out excavations there for the University of Michigan's Museum of Anthropology. This small mound was selected to test the intensive surface survey which had been done a year before. Whallon has observed that the sounding verified the hypothesis suggested by the intensive surface survey as regards the classification and concentration of material.

Another method of tackling a site was selected by Dr. Hamit Zübeyir Koşay in his excavation at Pular, 45 kilometres north-east of Elaziğ, on behalf of the General Directorate of Museums and Antiquities. As this mound was due to be one of the first flooded he set out to shave it by layers from top to virgin soil. This excavation went down through thirteen levels from early Bronze Age to late Neolithic. The layout of the settlement in its various stages became clear; rectangular houses radiating in plan from an open central area. The most characteristic architectural features were the decorated large hearths, several of which have been preserved and removed to the depôt in Elaziğ. Once the new regional museum which will house these campaign finds is open, the hearths will compose a major exhibit.

In 1972 Koşay also undertook a new excavation site, İkiztepe, identified as Early Bronze Age. An extremely large site of metropolitan character, the limited work of only the first season made it clear that it would produce especially fine examples from the early Bronze Age.

A total ecological approach was adopted by another team from the British Institute of Archaeology under the leadership of the Director, Dr. David French. In this instance the primary aim was to learn of the environmental context of ancient human occupation and activity in the region rather than to recover material data. The team was able to follow the settlement's development in a time spectrum and an ecological setting by working on four different areas belonging to different periods.





Fig. 18. - City walls revealed by the Haraba excavation — view from the southwest.

These meticulous studies in the ancient environment amassed data lacking in this form in many instances in the other digs; without these studies the information would have been irretrievably lost after the dam's completion.

Another mound, Hanıbrahımşah, may be a key to the prehistory of the region. Located at a strategic control point and spread over a wide area, it lay nearly at the centre of the archaeological activities. To judge by its formation and the surface survey, it contains a series of continuous settlements from the Byzantine to the Chalcolithic Age. It is as yet unexcavated, but Dr. Ertem has opened a stratigraphical trench with hopes of another excavating season before the site disappears below the dam's reservoir.

Work at another site, Tepecik, combined many of the approaches mentioned above to produce a different excavation pattern. Under the direction of Dr. Ufuk Esin of Istanbul University the team set about conducting salvage operations as rapidly as possible but with a minimum loss of finds. Dr. Esin tested the efficacy of two methods on the mounds, one archaeological, the other geophysical. She first sank deep soundings in order to identify the stratigraphy of Tepecik and then conducted research with the purpose of identifying "settlement patterns" on the mound and the terraces for all periods.

From these it proved possible to obtain fairly complete information about the stratigraphy of the mound. Thus, it is now clear that Tepecik was continuously inhabited between the

Iron Age (the first half of the first millenium B.C.) and the late Neolithic period (the end of the 4th millenium B.C.). Ecological studies conducted by the Tepecik team will help complement those done at Aşvan. It is most interesting to note that grapes were known at Tepecik from the Early Bronze Age onward.

Another site, Tülintepe, was also excavated by the Tepecik team from Istanbul University. Here the team easily reached Early Bronze Age layers because the upper layers had already been removed, unfortunately, by a railroad contractor. Once they reached the very rich Chalcolithic settlement water rising to a couple of metres below the surface stopped further work.

While Tepecik filled the gap in stratigraphical information on the 1st and 2nd millenium left at Pulur-Sakyol, Norşuntepe made important contributions to the architectural record. Excavated by Dr. Harold Hauptmann of the German Institute of Archaeology in Istanbul, Norşuntepe was one of the highest mounds of the Golden Valley. Under Level IV the old Hittite period, which had sizeable buildings, gave way at Level VI to burnt palatial ones. Of particular interest were the Urartian building with large plaza on the south slope of the mound and the Scythian horse-burial containing tomb gifts.

A joint expedition of the Universities of Chicago, California at Los Angeles and Amsterdam also took part in the Salvage Campaign, digging the largest mound, Korucutepe, for three years. Field director Maurits van Loon reported on the insight this site yielded into the prehistory and early history of Eastern

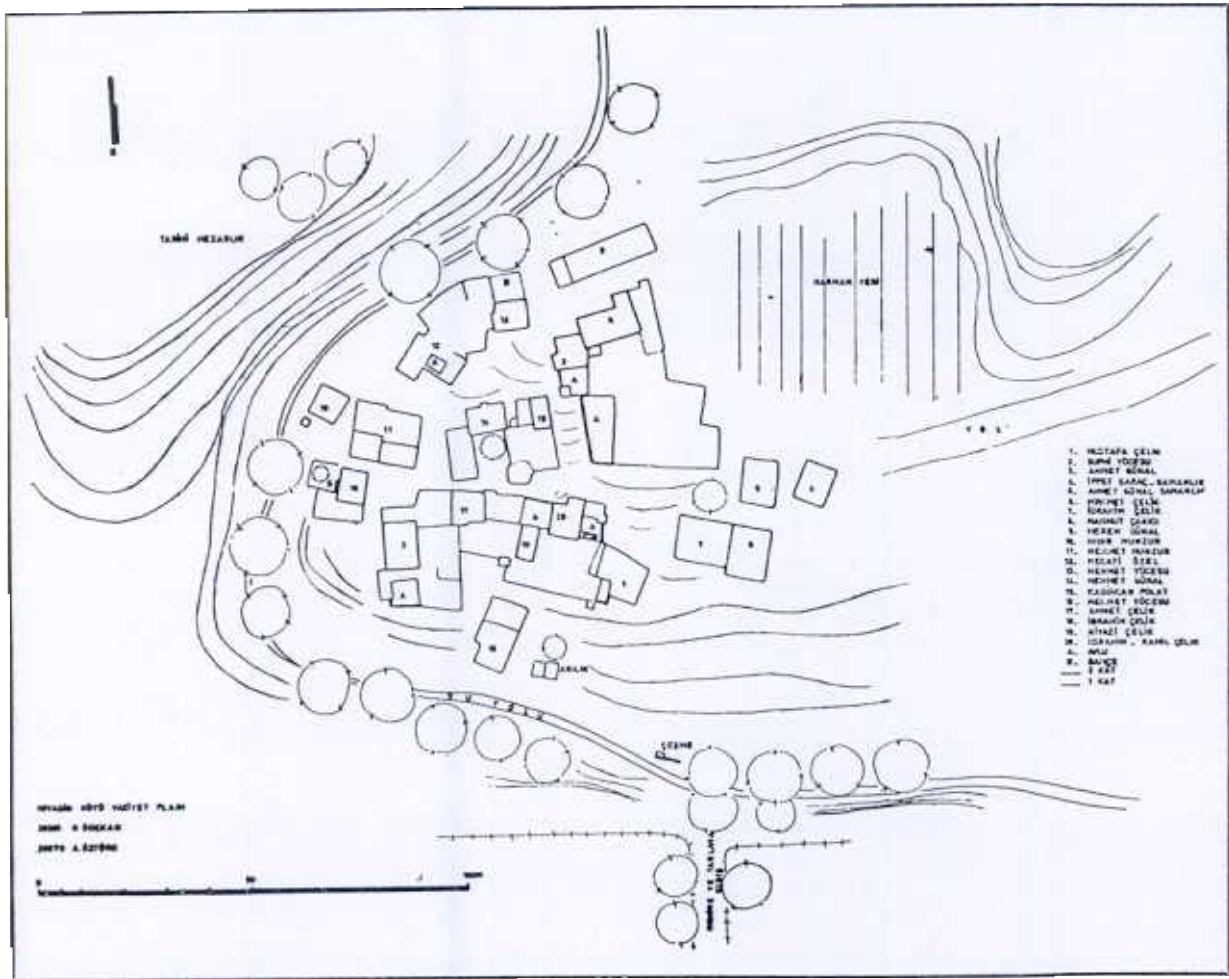


Fig. 19. - Settlement plan of Miyadin village (A. Alpöge).

Anatolia as a whole. Particularly noteworthy were the fortifications dating from 1750-1500 B.C. surrounding the mound, and the retrieval of some 15 *bullae*, or impressions on clay for use as seals. These have been studied by Professor Hans Güterbock. Bullae found the first year bore the name of the King of Ishuwa (Ari-Sharuma).

A final site, Haraba or Şimşat Kalesi, some 75 kilometres to the east of Elazığ, was excavated for two seasons by Professor Baki Ögan from Ankara University. He excavated both in the mound itself and on the lower fortified settlement at its south side. His soundings proved that this lower city was a medieval settlement of the Seljuk period. In the eastern part of the lower city a tower of the Roman period suggested that a large Roman settlement was included in the mound. From this Ögün concluded that the site may well have been Arsamosata or Asmosata. Fortifications on the citadel were of various periods, including the Roman. Soundings yielded Hellenistic pottery and wall remains as well as Urartian and late Hittite walls and sherds of the Malatya type of this region.

This review of the sites excavated during the salvage campaign represents only a thin distillation of the quantity and importance of the finds. Most importantly, taken as a whole they represent a pioneering contribution to the investigation of all the settlements of a region as an integral whole. Through the massive efforts of the salvage campaign participants, the Golden Valley, only six years ago a blank area on the archaeological map of Anatolia, has acquired a prominent place on it. The richness of this area is again thrown into relief when one recalls that these excavations have covered only one tenth of the sites that are being submerged and that the closing date for the dam prevented any dig from being done with the thoroughness of a regular expedition.

## 2. Rural Architecture

The project studies of rural architecture may prove to be important in linking these historical patterns with contemporary ones. The modest structures of the villagers represent a building tradition of several thousand years. These architectural studies were organized by the Faculty of Architecture

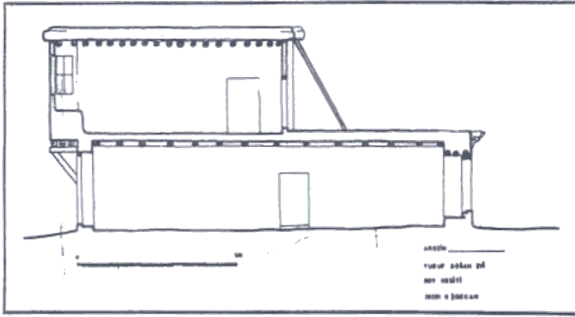


Fig. 20. - Longitudinal section of Yusuf Doğan's house in the village of Arozik (A. Alpöge).

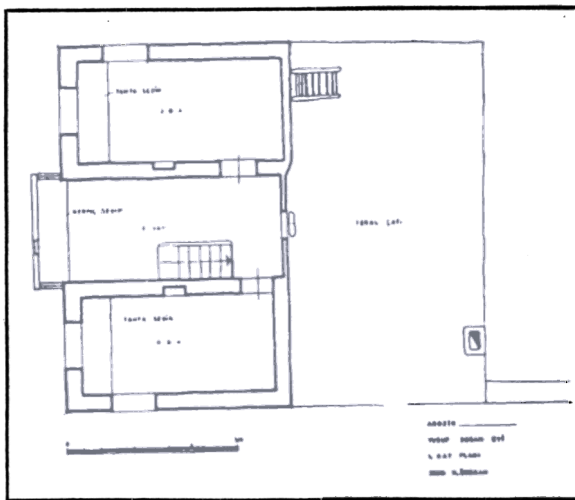


Fig. First floor plan of Yusuf Doğan's house (A. Alpöge).

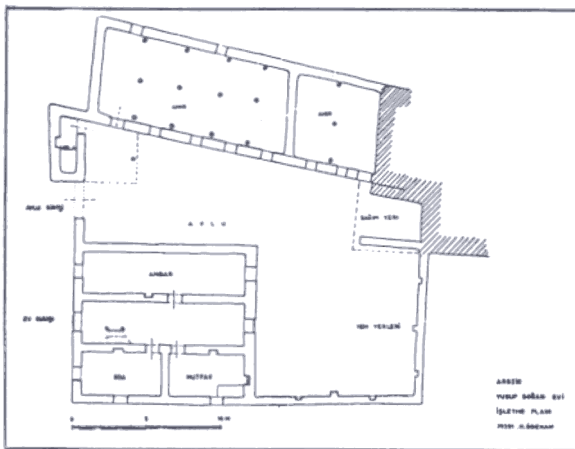


Fig. 22. - Lower floor plan including the courtyard and outbuildings of Yusuf Doğan's house (A. Alpöge).

from Istanbul Technical University<sup>5</sup> with the METU, Aşvan and Norşuntepe teams contributing at the documentation stage.

The settlement patterns in these villages were influenced largely by the topography of the site. They may be classified in three groups, *i*) hillside villages, *ii*) villages in the valley, and *iii*) villages in the plain. Most villages which had originally been on historic mounds tended to move toward more usable flat areas. Changing patterns of regional control and transportation also played a rôle in these shifts.

Individual houses can be divided into two functional categories: *i*) the single-house type, *ii*) the compound-house type. This division in itself is an interesting feature, as it corresponds to the Chalcolithic occupation patterns in Tülin-tepe. The social organization moulding this pattern certainly resulted from the economic considerations which fostered large, extended families; each individual household has its own quarters, but all come together to form an organic housing complex, here called the compound house. Up to seven or more single houses may group together to form a dwelling cluster. The biological and social phenomenon is directly reflected in this interesting architectural form.

The plan of a single-house unit is purely a functional reflection of the limited possibilities of the villager's traditional agriculture. Thus houses may vary in that they will have one or two storeys, but will otherwise conform to similar interior arrangements. The three main elements of these houses are the living quarters, the stable and the storage area. The size of these areas and the number of rooms vary accordingly. Living quarters are formed of several rooms which connect with a main room by way of a chimney; this room serves both as the kitchen and the dining-room. Adjacent to the chimney-room or next to the stable is located the storage room; these then open on a courtyard which serves as the general communication centre. In two-storeyed houses the living and sleeping rooms are usually on the first floor.

Such a strict functional organization leads to one general type of outer configuration: a massive lower part with very few openings and an upper storey with large openings. Building materials are natural stone or rubble, unbaked brick and wood in its natural form; rubble walls generally form a "soubassement" of about one metre. Flat roofs complete the simple cubic mass. From the standpoint of composition the exterior of these houses has a directness of expression and a strong, unfalsified, character.

### 3. Ethnographic Research

Like other campaign activities, ethnographic research represented field studies in the forefront of Turkish Anatolian

<sup>5</sup> Doğan Kuban, "The First Preliminary Report on the Rural Architecture of the Keban Dam Area, 1968", *1968 Summer Works*, METU, Ankara, 1970, pp. 173-182; Ayla Alpöge, "Anonymous Architecture in the Keban Region", *Keban Project 1969 Activities*, METU, Ankara, 1971, pp. 131-138; Ayla Alpöge Ödekan, "Research on Rural Architecture in the Keban Region, 1970", *Keban Project 1970 Activities*, METU, Ankara, 1972, pp. 161; Eckhart Peters, "Lehmziegelhäuser in der Altınova", *Keban Project 1970 Activities*, METU, Ankara, 1972, pp. 173-182.

studies. The Salvage Campaign Committee supported three teams for ethnographical studies of artifacts, folk songs and folk tales, music and language and weaving techniques. All of these represented an oral and handicraft tradition that was in immediate danger of disappearing, not simply because of the dam construction but also because of the rapid socio-economic change that is sweeping Turkey from west to east.

Weaving and knotted rugs belong to a tradition that is especially well rooted among the Turks and in Anatolia, but on which all too little work has been conducted in the field and by Turkish scholars. It is here rather than in the museums of Europe that many of the answers to questions on the tradition of rugs must be sought<sup>6</sup>. In this area the Keban Project's first publication in its ethnographical series on handmade textiles of the dam region<sup>7</sup> presented an exhaustive account of both the weaving techniques and types and the different ethnic and social groups to which they belonged. The author, Yusuf Durul, next studied interpretations of different motifs used in these floor-coverings in order to identify the relation of local tribes to others in Anatolia through cultural interactions. These motifs, as well as the techniques used in production and dyeing, could be traced back to the entry of the first Turkish tribes into Anatolia.

#### 4. Socio-Economic Studies

From the outset the Project was concerned about the fate of the villagers displaced by the dam. METU provided the financial backing for a socio-economic survey to study the problems of resettlement and adjustment to a different environment. Dr. Oya Köymen of METU's Department of Economics and Statistics set out to evaluate the immediate impact of the dam on the 30,000 people who would be forced to abandon their homes<sup>8</sup>.

An intensive study of the 212 settlements immediately affected by the dam made between 1968 and 1971 relied on individual village inventories provided by the Ministry of Village Affairs as well as on interview schedules. The latter were obtained from 1,098 heads of households who had been selected by the METU team according to a statistical sampling method. Findings were exhibited to the public, thus dramatizing this largest public resettlement of internal migrants in the history of the Turkish Republic.

#### 5. Salvage of Historical Monuments

What initially commenced as a field exercise in monument documentation for graduate architects not only initiated the salvage campaign but also led to the actual relocation of selected monuments. By interesting the *Vakıflar* (Foundation for Pious Endowments) and the Highway Department, three of the monuments encountered in the original 1966 survey were saved.

<sup>6</sup> Kurt Erdmann, *Der Türkische Teppich des 15. Jahrhunderts*, Istanbul, 1958, pp. X-XII.

<sup>7</sup> Yusuf Durul, *Baraj Gölü Çevresi Dokuma Sanatları*, (Textile Arts in the Reservoir Region), M.E.T.U., Ankara, 1969.

<sup>8</sup> For a summary see: Oya Köymen, "Keban Sosyo-Ekonomik Araştırma Projesi", *Haber Bülteni*, Faculty of Administrative Sciences, M.E.T.U., Ankara, May 1972, p. 15.

Two of these were the mosques of Eski Pertek. Studies were carried out on constructing a cofferdam around them or on other alternatives such as elevating the structures on hydraulic jacks, transporting them by cutting them into large sections and totally dismantling them.

Selecting an operation depends on well-known factors, such as the availability of financing, skilled personnel, technical tools and the structure's original mode of construction. Transporting a structure by dismantling is one of the least costly operations and requires little in the way of advanced tools or knowhow. The only disadvantage is that the system is limited to structures which have separate pieces that may be lifted without damage. Conditions in eastern Turkey and the general scarcity of technical personnel forced us to choose the dismantling operation.

Dismantling proved easier than expected; the joining mortar was soft enough to work. Although we initially estimated a loss in transit of 30 %, in actual practice it proved to be far less.

These structures were carried to sites designated by the municipality of Pertek. Although the old setting with the adjacent structures in the 16th-century complex could not be duplicated, the mosques will now serve the town and the nearby district. Thus their old function will be restored. While the technique of marking stones was not as sophisticated in this instance as the one used during the Romans' transportation of the Temple of Ares in the Agora at Athens, the transportation as it was proved successful.

Today certain problems remain such as proper roof covering, the filling-in of missing stones, and the replacement of damaged stones, doors and windows, as well as flooring and a heating system. The shape of the minaret's original cone must also be determined from documentary studies. Finally, the use of cement mortar with rough sand may cause the mosque to stand some 15 centimetres higher than it did originally.

As for the delicate Karamağra bridge, dismantling has been completed but its re-use is still a question mark. One other important area, however, is to be re-functioned: the medieval citadel, once a high point in the area, will remain above water as an island in the dam reservoir. The ground around the fort is to be arranged as an island park to reflect regional flora. The walls themselves will house a medieval object museum.

A central museum housing the finds of the Keban Project will open on property donated by the State Academy of Engineering and Architecture at Elazığ. Plans for this museum were prepared by the Keban Project together with the General Directorate of Museums. Foundations for the building are already laid and the museum should open to the public once water fills the reservoir.

#### THE GOLDEN VALLEY IN RETROSPECT

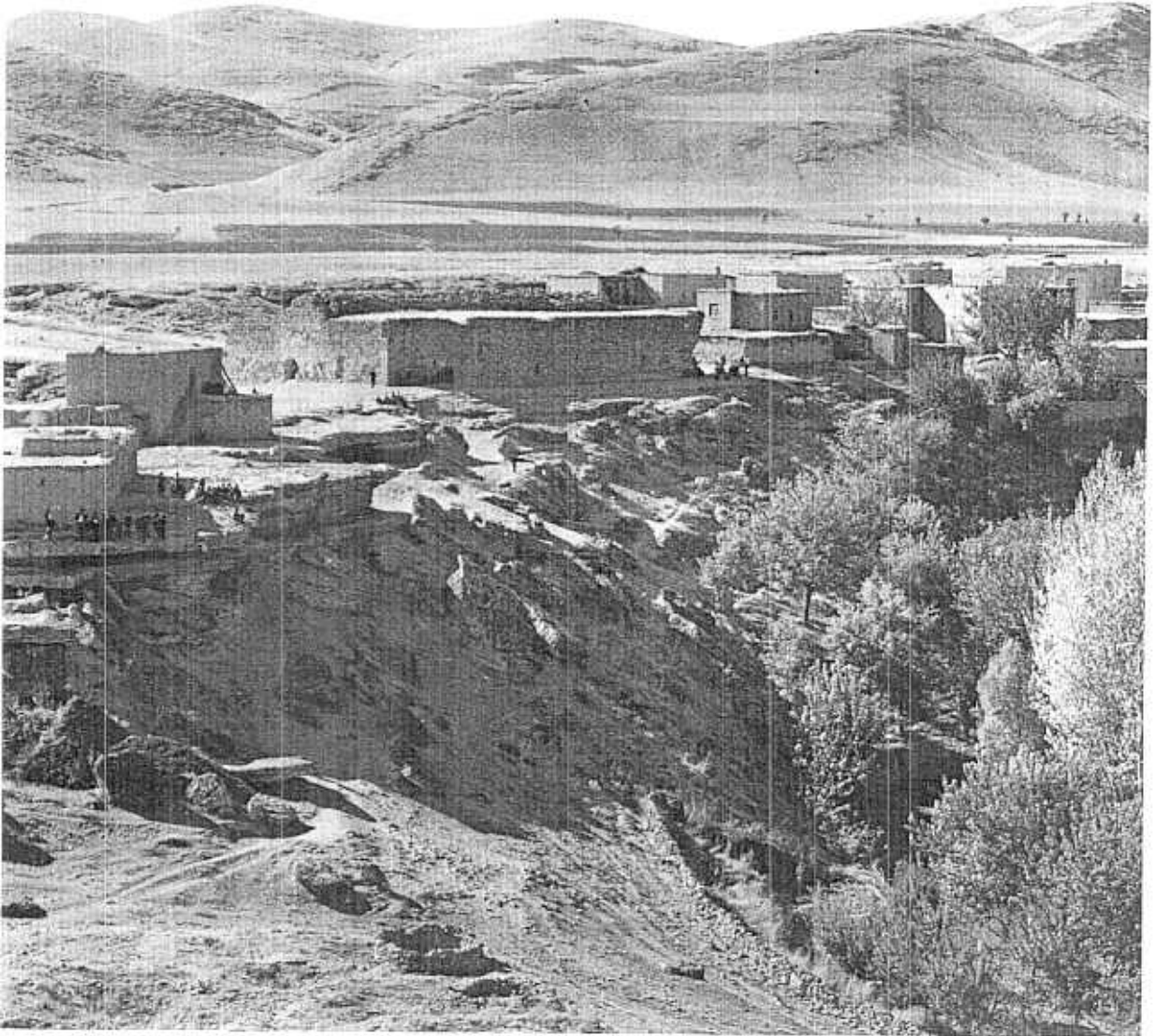
Less than a decade ago the Golden Valley was virtually unknown and unexplored. Today, however, the Keban Salvage Campaign and Project has contributed through the joint efforts of many participants an immense quantity of information to aid us in a basic understanding of the ancient people of Eastern Anatolia. Investigating the problem of recurrent and non-recurrent patterns of exploitation in the area has helped





Fig. 23. - The village of Sakyol and its prehistoric mound (Pulur).

Fig. 24. - Winter section of a XIIIth century caravanserail and the village of Hanibrahimşah.



establish the system parameters of the region's economic and social changes.

Many important questions still remain open for the investigators. Was the Early Bronze Age culture of Eastern Anatolia a direct descendant of the Early Chalcolithic cultures of this region, or did the Early Bronze phase grow out of the cultures brought from the Caucasus or further beyond? How close was the area's contact during the 4th millennium with the urban centres of Syria and northern Mesopotamia? What is the historical explanation for the general devastation that marks the end of the third millennium? What were the details of the ways and manners of the people who lived on its eastern confines and who filled the lacuna left by the collapse of the Hittite Empire?

For the investigator there is the general Paleolithic stratigraphy, followed by a large quantity of information for the Chalcolithic period. The architectural finds of fine buildings have shown that an impressive cultural tradition was represented here at Korucu, Tülintepe, Sakyol, Tepecik and Çayboyu. Korucutepe has also added to knowledge of the artistic tradition with its copper, silver and iron objects from this period.

With the Early Bronze Age (3000 B.C.) evidence emerged of striking architectural achievements in palaces, shrines and houses. Subsequently the Middle and Late Bronze Ages (2000 B.C.) provided strong archaeological data. Forts, palatial architecture, well-organized houses and the seal impressions confirmed the identification of the lower Murat valley as Ishuwa, a buffer state linked to the Hittite Empire by dynastic marriage. Study at Tepecik also yielded settlement patterns for the Early, Middle and Late Bronze Ages.

Findings from the Iron Age were especially impressive for the Urartian period. Information appeared from Haraba and Norşun Tepe on Supa, the land of the Urartian King Menuva (805-790 B.C.), identified by inscriptions found at Palu. The sizeable building complex with its large plaza at Norşuntepe stands as an accomplished example of Urartian architecture. The Scythian horse burials found in a late Iron Age tomb indicate Scythian visits to the area.

Next to the few Hellenistic finds at Ağın, Haraba and Aşvan, the Roman remains at Kalecik, Pağnik, Kilise düzü, Aşvan and Haraba are an aid to the drawing of conclusions on the East Anatolian section of the Roman frontier. Although remains of the Byzantine period and of extensive Seljuk occupation of the 11th to 13th centuries were extensive, their analysis must await interested scholars.

In addition, the survey of modern local architecture, settlement patterns and ethnographical material have woven a pattern of traditional life styles that are rich in texture and detail. This horizontal study in time has been enriched with vertical exploration of regional ecology in the past through plant collection, crop and land-use surveys, and epigraphical and topographical studies, as well as the recording of tools and agricultural practices.

As a result of these we have on record not only the heritage of the people of eastern Turkey but also the rich legacy of man and his environment over the long expanse of pre-industrial living. Finally, the Keban Dam Salvage Project has aided

techniques and science in Anatolia through training and through application or development of new techniques in the field. This interdisciplinary effect of the field participation of architects, engineers, photogrammetrists, geologists, geophysicists, botanists, statisticians, social scientists and economists should leave its mark in the next decade.

## LESSONS FOR FUTURE SALVAGE OPERATIONS

Quite unexpectedly, the dam which appeared to be a threat at Keban turned out to be an unusual benefactor for archaeologists and art historians. This first large-scale archaeological salvage campaign in Turkey should remain as an example of its kind to guide future operations. For success did not come by chance, but through the innovative use of institutions and skills.

Salvage campaigns face peculiar archaeological dilemmas. There is the desire to be thorough, to treat each site with the most advanced and meticulous methods known to archaeology. On the other hand, participants are pressed by the constant awareness that they are in the thick of a race against time. How thoroughly can they investigate each layer, is it possible to learn about the ancient ecology of an area in any one period — a process involving wide-ranging thoroughness and precision — with the knowledge that below lie perhaps many other unexcavated layers; does one take widespread soundings, concentrate on a small area and do it neatly from top to bottom, aim for one layer that seems promising and ignore all others? And what about the treasure-trove objects that keep a campaign going in the press and the funds flowing in; how far can one ignore this activity for more thorough if less flashy activities of greater historical importance?

From the Keban Salvage Project we have examples of every possible approach to salvage archaeology. In each case something was forfeited. Nevertheless, the close location of each site to the others enables important cross-classification of levels and finds from which to hazard a guess about the missing aspects of each site.

Organizational elements of the Salvage Project with implications for other such campaigns may be divided into four categories: monitoring, public relations, fund-raising and disbursing, and the administrative network.

## RECOMMENDATIONS

### *I. Monitoring Organization*

In the absence of an actual campaign there is need for a monitoring organization that follows current projects. Such an office, presumably small and perhaps part of a larger organization concerned with antiquities, can maintain contact with technical organizations and experts. It is aware of new developments in the field and is in a position to tap individuals most qualified and ready to respond to survey and analysis needs. Since speed of response is a prime element of success in a salvage operation, the monitoring organization must play a key rôle in spotting areas that need salvage operations and in starting the chain reaction needed for a campaign.



Fig. 25. The village of Aşvan.

Two groups quite by chance assumed this rôle in the Keban Project, the METU Restoration Department with its initial monuments survey and public exhibitions and the Istanbul University archaeological survey team. In the future Turkey cannot leave this rôle to chance. Too much has already been irretrievably lost this way.

### *II. Public Relations*

Effective public relations launches a campaign once the need for salvage is recognized and the monitoring organization has moved into action; public exhibitions, the news media, and personal meetings are the stock-in-trade. Those involved in the public relations aspect negotiate with those in charge of construction for an amicable stay of operations or field cooperation. This is an area sensitive in the extreme. Engineers and planners are reluctant, understandably, to admit anything that will delay implementation; it means financial loss to them. Less understandably, however, they underestimate or are ignorant of the value of their own historical heritage; this keeps them from quantifying the social benefits of salvage operations in their financial accounting.

When public concern is aroused, those in charge of construction become more amenable to preserving their public image. If such pressure proves ineffective the public relations group must be in a position to seek political and, if need be, legal backing.

In the Keban Salvage Campaign the Executive Committee under the direction of President Kemal Kurdaş took up this rôle. Again the Salvage Project was fortunate, this time because it had as its prime mover a chairman deeply concerned about Turkey's antiquities and with long experience in positions of responsibility with the Turkish government, universities and international finance. Such leaders are rare but determine success or failure.

### *III. Financial Organization*

One aspect of the financial organization, fund-raising, goes hand in hand with public relations, while the other, the disbursement of funds, belongs to the project administration. It is unusual to find in developing areas administrators with financial expertise who are also concerned about history and willing



Fig. 26. - A view from Asvan of its mound.

to devote time to archaeological and monument salvage; they are indispensable, however.

First, only they can effectively set up a bridgehead between the project and financial sources. Second, their guarantee of funds frees scholars and technicians to concentrate on the project itself with the assurance that financial backing is forthcoming. All too often the archaeologist finds himself as both field director and fund-raiser, with the almost inevitable contradictions involved; if he finds the funds he has no time for archaeology and if he has no gift or opportunity for fund-raising he has time for reflection but no material to reflect upon.

In the Keban Salvage Project field directors were spared the time-consuming responsibility of fund-raising but were given assurance of financial support. The Executive Committee took charge of obtaining funds for the whole project; these were then distributed among applicants.

#### IV. Project Administration

Once the salvage campaign is off the ground as far as public relations and funds are concerned, there should be an administrative organization that oversees and coordinates all activities while giving the participants a maximum of independence and backing. Above all it must be responsive to new developments and free of unnecessary administrative tangle. Those areas it can most effectively handle are *i)* team selection, *ii)* accounting, *iii)* field facilities, *iv)* publications.

Team selection is best done by a group of noted scholars in the areas touched by the project. In the Keban Salvage Project the Executive Committee as initially formed took this responsibility. In addition there was a full-time administrator to ensure continuity and carry out decisions in detail <sup>9</sup>. The committee may also include administrators and representatives of related government agencies to advise in administrative matters. These committees, except for an administrative core, should be organized on an *ad hoc* basis as necessity arises.

An accounting office to disburse funds is a central mechanism that must be kept streamlined. It acts to disburse funds to each participating team at the beginning of the work season, to keep

<sup>9</sup> At first Nejat Erem and then Ekmel Derya, both from METU's Faculty of Architecture, took this post for the Salvage Project.

accounts over the whole year, and to cover ongoing expenditures. Accounting methods should keep the necessary field books at the minimum needed for proper control, thus freeing the field directors to concentrate on the job at hand.

Field facilities can be maintained for the length of the project, always with a view to their refunctioning within the region at the close of field operations. Their primary purpose is to expedite the movement of teams into the field, to supply services and material during the work season, and to house equipment and finds over the slack season or until museum facilities are made available. On the site or in the salvage region a central meeting or depot site, with guest quarters for visitors and participants when in transit to and from their sites, forms the centre of the facilities network. These should be arranged with some existing local organization, since the temporary nature of the project usually does not warrant the investment in permanent quarters. Such local cooperation may also help spawn off some ongoing regional activity such as a museum for the finds and local re-functioning of monuments removed from the salvage area.

At this centre the core also maintains a crew with jeeps and communication and spare equipment facilities within easy response distance for all teams when in the field. At Keban the Academy of Engineering and Architecture in Elazığ gave the space for the core in field operations. Within easy access by air from major cities Elazığ lay at the centre of road and overland links for the reaching of individual sites.

Editing and publication are the final area of the centre's competence <sup>10</sup>. This should not infringe on each individual team's right to publish independently. Rather it should provide a service for rapid and polished publication of field reports in more than one language. The publication office has a scholarly editing staff to see the bound volumes of field reports through to press, preferably before the beginning of the next season. In addition, others must work with public and financing groups to present each seasons' progress through the mass media in a form more interesting to the general public.

Such an organization is not a pipe dream. With the Keban Salvage Project just such an organization appeared, operated from start to finish of its intended programme, and will shortly close its offices with the flooding of the reservoir area. This achievement can be repeated, elaborated and improved upon elsewhere if scholars, administrators and financiers are prepared to pool their skills in the service of their cultural heritage <sup>11</sup>.

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<sup>10</sup> The Salvage Project's editing office was handled by Irem Acaroğlu and later by Sevim Pekman.

<sup>11</sup> All the presidents of METU have encouraged and liberally supported the project as chairmen of the executive committee. To former presidents Kemal Kurdaş, Professor Dr. Erdal İnönü and retired General Şefik Erensu, as well as to the present president Professor İsmet Ordemir, we owe our deep appreciation.



## RESUME

La rapidité des progrès techniques a créé un problème qui, dans le monde entier, se pose en ces termes aux archéologues, aux historiens d'art et aux conservateurs : peuvent-ils poursuivre les recherches qui les intéressent, selon leurs programmes pré-établis tandis que disparaissent autour d'eux maints vestiges importants ou bien doivent-ils toujours marcher derrière les bulldozers ? Les fouilles de sauvetage sont devenues un problème important qui se fait sentir de façon aiguë dans les pays en voie de développement. La vitesse des changements techniques actuels, le manque d'information et de sensibilisation de l'opinion publique ainsi que la grande diversité des vestiges archéologiques et monumentaux y donnent à ce problème une acuité plus grande que partout ailleurs.

La Turquie, toutefois, vient d'être le cadre d'une opération de sauvetage d'une remarquable efficacité, dont l'initiative et la direction ont été assumées par la Turquie seule, pour préserver le patrimoine historique d'une vaste région, à l'est de l'Anatolie, qui allait être recouverte par les eaux du lac du barrage de

Keban. En 1975, une zone de 680 km<sup>2</sup> a été submergée sous les eaux de ce nouveau lac, qui mesure 125 km de long. 212 agglomérations, de différente importance, ont été noyées et plus de 30.000 personnes ont dû être déplacées. De plus, l'écologie de la région qui semblait être restée presque constante durant des siècles a été profondément altérée. Les eaux du lac ont englouti une cinquantaine de monuments historiques et une centaine de sites archéologiques.

Cet article a été écrit alors que ce barrage sur le haut Euphrate venait d'être terminé et que le niveau de l'eau commençait à monter dans la zone condamnée; on pouvait alors faire un bilan et recenser les éléments qui ont contribué au succès de l'opération de sauvetage dans la zone du barrage de Keban. Les leçons tirées de cette expérience pourront servir pour trouver les moyens de faire face, de manière toujours plus efficace, aux menaces que les grands travaux publics font peser sur la conservation du patrimoine historique, non seulement en Turquie mais dans bien d'autres pays.

Fig. 1. - La position de la future retenue du barrage de Keban, repérée sur une carte de la Turquie.

Fig. 2. - Les sites archéologiques explorés dans la zone de la future retenue du barrage de Keban.

Fig. 3. - Les lieux habités qui seront inondés lors de la mise en eau du barrage.

Fig. 4. - Les sites de la zone du barrage ayant fait l'objet des relevés du Département de Restauration.

Fig. 5. - La mosquée de Baysungur à Eski Pertek, datant de 1572, avant son démontage et sa reconstruction, vue du nord-ouest. Le terrain entourant la citadelle que l'on aperçoit au fond formera une île émergeant de la retenue.

Fig. 6. - Minaret de la mosquée Çelebi Ali (1567-1573) à Eski Pertek, démonté en prévision de son transfert.

Fig. 7. - Mosquée de Baysungur en cours de reconstruction sur son nouvel emplacement à Yeni Pertek, vue du sud-est.

Fig. 8. - Mosquée Çelebi Ali après reconstruction à Yeni Pertek, vue du sud-est.

Fig. 9. - Le pont de Karamağra, dont une inscription permet de situer la construction au VIII<sup>e</sup> siècle après J.-C., sur son emplacement d'origine, enjambant l'Arapkır.

Fig. 10. - Exécution de relevés en prévision du déplacement du pont de Karamağra.

Fig. 11. - Face nord du pont de Karamağra et coupe transversale en AA.

Fig. 12. - Fouilles préhistoriques dans la zone du barrage de Keban.

Fig. 13. - Tableau résumant la stratigraphie du terre de Pular, révélée par les fouilles.

Fig. 14. - Autel chalcolithique tardif provenant des fouilles de Pular (niveau X), restauré in situ avant son transfert au dépôt de fouilles.

Fig. 15. - Vue aérienne de la zone des fouilles de Tepecik.

Fig. 16. - Vue aérienne du chantier de fouilles de Tülintepe.

Fig. 17. - Vue aérienne des fouilles de Norşuntepe, prise du côté est.

Fig. 18. - Murs d'enceinte mis à jour par les fouilles d'Haraba, vus du sud-ouest.

Fig. 19. - Vue en plan du village de Miyadin. (A. Alpöge).

Fig. 20. - Maison de Yusuf Doğan dans le village d'Arozık — coupe longitudinale (A. Alpöge).

Fig. 21. - Maison de Yusuf Doğan — plan du premier étage (A. Alpöge).

Fig. 22. - Maison de Yusuf Doğan — plan du rez-de-chaussée avec cour et dépendances.

Fig. 23. - Village de Sukyol avec son tertre préhistorique.

Fig. 24. - Les locaux d'hiver du caravansérah du XIII<sup>e</sup> siècle, et le village d'Hanibrahimsah.

Fig. 25. - Le village d'Asvan.

Fig. 26. - Le village d'Asvan vu de son tertre.

## RESUMEN

*Turquía ha sido el marco de una operación de salvaguardia para preservar el patrimonio histórico de una extensa región al este de Anatolia. La iniciativa y la dirección se deben a la sola Turquía.*

*En primer lugar, un equipo tomo fotos e hizo el inventario de los monumentos que debían ser sumergidos por las aguas del lago - 680 km<sup>2</sup> y 125 km de largo - que debía formar la presa de Keban sobre el Eufrates. Esta operación permitió la publicación de inventarios que revelaban la existencia de terremotos correspondientes a sitios de poblaciones antiquísimas.*

*En paralela, un equipo de arqueólogos de la prehistoria hizo levantamientos y sondeó la superficie de 30 % de la zona de inmersión.*

*Después fue creado un Comité de Salvaguardia de los Bienes Culturales de la Zona de Presa que lanzó una subscripción nacional que fue muy bien acogida en todos los ámbitos sociales, hasta mismo por los campesinos y las escuelas primarias que también subscribieron. El gobierno también participo.*

*Esto permitió la reunión de 12 equipos turcos y extranjeros a quien se dio gran autonomía y que se repartieron 5 sectores de investigación: arqueología - arquitectura del campo actual - etnografía - estudios socioeconómicos - salvaguardia de los monumentos.*

*Los trabajos permitieron el desplazamiento de 3 monumentos: 2 mezquitas de Eski Pertek, que fueron desmontadas y reconstruidas y que continúan a servir a los fieles; el puente de Karamağra del siglo VI que no está todavía reconstruido. Una*

*ciudadela que dominaba la región fue consolidada y acomodada para servir de museo en medio de un parque que se ha transformado en reserva y conservatorio de la flora regional.*

*Los estudios socioeconómicos han tenido por objeto los 212 pueblos que habían a ser anegados. En vista de reasentar las 30 000 personas que allí vivían se entrevistó a 1 098 jefes de familia y se hizo una exposición de los resultados obtenidos. Se construirá un museo para recibir las colecciones reunidas.*

*En total, dado que se trataba de una región que no había sido estudiada anteriormente se han podido llevar a cabo estudios estratigráficos sobre los épocas del paleolítico, del calcolítico de la edad de bronce, de la edad de hierro (sobre todo de la época de Urartú), época helenística, romana, etc. Además, la documentación recogida permitiera ulteriormente aclarar numerosos problemas que pueden ser: el tránsito de una cultura a otra, las relaciones de una civilización a otra etc.*

*Los estudios ... ecológicos y arquitectónicos han permitido conocer la evolución del marco de vida durante los numerosos siglos que precedieron los tiempos industriales.*

*La lección que se puede sacar de todo esto es que, dada la rapidez de los progresos técnicos el problema de la salvaguardia y de la conservación no pueden quedar pendientes de milagros producidos por la buena voluntad de algunos, sobre todo cuando se plantean en los países en vía de desarrollo, hay que tomar medidas para alertar y informar la opinión pública, al no ser que se quiera que los arqueólogos y los especialistas se cuelguen tras de todos los bulldozers.*