THE SITE PLANNING OF AN ARCHAEOLOGICAL SITE IN LYCIA A PROPOSAL TO ARYCANDA

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RESTORATION

MIDDLE EAST TECHNICAL UNIVERSITY

by

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ABSTRACT

THE SITE PLANNING OF AN ARCHAEOLOGICAL SITE

IN LYCIA

A PROPOSAL TO ARYCANDA

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The subject of this study is the site planning of the antique city, Arycanda. The city was established by the Lycians in the 5th century B.C. After the Hellen and Roman periods, the city was shifted towards the south, and has been continued until now.

This thesis has been prepared to investigate where, how and how much, can be approached to an archaeological site within the restoration rules, and to bring a suggestion about the site planning. While working on the site planning, the data of the antique city and the possibilities of today, the topographic conditions and the tour routes, are tried to be adapted.

Beside the research on the history and the location of Arycanda and Lycia, there made a study about the city planning. Also the special problems of Arycanda were pointed out.

As a result of these studies, it is tried to bring out some suggestions about the site planning. The protection study of materials is mentioned by only general criterions. Also a research made about the refunctioning buildings.

. In the first part, the methodologic studies are discussed.

. In the second part, the conservation problems of archaeological sites in Turkey are mentioned.

. In the third part, an information is given about Arycanda.

. In the fourth part, the city planning, and the development of the city building in the antique age, is included.

. In the fifth part, the conservation problems of Arycanda are examined and restoration principles are recommended.

Key words: Archaeological site, Arycanda, conservation ,excavation, restoration, site arrangement

ÖZET

LİKYA DÖNEMİNDE BİR ARKEOLOJİK ALANDA ÇEVRE DÜZENLEMESİ ARYKANDA İÇİN BİR ÖNERİ

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Bu çalışmanın konusu, Arykanda antik kenti çevre düzenlemesidir. M.Ö. V. yüzyilda Likyalılar tarafından kurulmuş, Yunan ve Roma dönemlerinden sonra, Bizans çağında yerleşim, antik kentin güneyine kaymış ve bugüne kadar süregelmiştir.

Bu tez arkeolojik bir sit alanına, restorasyon çerçevesinde nereye, ne kadar ve nasıl yaklaşılabileceğini araştırmak ve çevre düzenlemesi konusunda bir öneri getirebilmek amacı ile hazırlanmıştır. Çevre düzenlemesinde antik bir kent verileri ile bugünkü olanaklar, topografik koşullarla gezi şemaları çakıştırılmaya çalışılmıştır.

Kentin ve yörenin tarihi, konumu, yerleşim şemaları incelenmiş, antik çağda kent planlamacılığı araştırılmış, ayrıca kazı alanlarının ve özelde Arykanda'nın sorunları irdelenmiştir.

Bu çalışmaların ışığında öneri getirilmeye çalışılmıştır. Malzemeye yönelik koruma çalışmaları sadece genel kıstaslarla belirlenmiştir. Ayrıca yapıların işlevlendirme olasılıkları da araştırılmıştır.

Birinci bölüm metodolojik çalışmayı anlatmaktadır.

İkinci bölümde Türkiye'deki kazı alanlarının sorunları incelenmiştir.

Üçüncü bölüm Arykanda hakkında bilgileri kapsamaktadır.

Dördüncü bölüm, antik çağda kent planlamacılığının ve kent yapılarının gelişimini anlatmaktadır.

Beşinci bölümde ise Arykanda'nin koruma sorunları ve öneriler bulunmaktadır.

Anahtar kelimeler: Arkeolojik alanlar, Arykanda, çevre düzenleme, kazı alanları, koruma, onarım

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This thesis is dedicated to Emre Apaydın.

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1. INTRODUCTION

1.1.Aim of The Study :

No archaeological site is exactly like to each other. Each has a seperate history, physical context, and conservation potential. There for every excavation is a new experiment for the unknown conditions.

In Turkey, it is hard to say that the remains contributed to the world culture and civilizations are well protected.The conservation problems of archaeological sites are tough and carries various aspects.

Archaeology has been considered as for only last 50 years. Also the scientific approaches have developed within the same period. Conservation and restoration, especially conservation in archaeological sites, are the new developed facts. Therefore, the stabilization has not been completed, and a good system has not settled down yet in a view of approaching archaeological sites. Beside this, archaeologists have not agreed among themselves and not constructed an overall view about approaching excavation fields, using techniques and size of conservation and restoration.

T. C.
Yükseköğretim Kurulu
Dokümantasyon Merkezi

Archaeological problems of Turkey may be given in two headings : Administration problems and archeaological conservation problems.

Administrative problems : State cultural policy, state approach, and regarded laws are the important subjects. These allow to determine financial situation. Since archaeology is a cultural investment, no financial aids flow through. Archaeological sites need to spent so much work and time. Money returns after a long while. For that reason, state support takes an important place. But in Turkey, it is hard to talk about interest of the state to the archaeological fields. Archaeological finds obtained by efforts of a group of interested people and by their intension.

Archaeological conservation problems : are the principle subjects of this thesis and carries various subjects inside. Every excavation is considered as a destruction. Any object burried in the ground, will have reached virtual equilibrium with its surrounding environment. When any object is exposed to the air, the deterioration process immediately starts. The aim of excavators must be to minimize the environmental shock to be applied to remains when they are uncovered, recorded, and transported for movable objects.

Archaeological conservation is conserned with both sites and objects, and tends to be different

specializations; each with its own practitioners, technical literature, and training methods. Conservation of small objects is out of this study since it is another specialization field. In contrast to movable objects, architectural remains are fundamentally and naturally defined to be preserved at site, and to be informatively restored.

Appearance of archaeological remains requires a site planning and arrangement. Though one period of a site may be emphasized, by no means should a site be cleared of all subsequent archaeological evidence. The key features of a site should be readily noticable to the scholar and to the visitors.

The excavations have been successfully continued since 1971 by Prof. Dr. Cevdet Bayburtluoglu in the antique city, Arycanda. Especially, the official buildings have been uncovered. Beside excavation, restoration and site arrangement work have been trying to complete by the resources in hand.

As a result of increase in number of visitors, new possibilities have been come out for the antique city and the towns around. Also some new requirements have arisen.

Arifköy is the new settlement place in the south of the antique city. By time passes, the new inhabitants have realized the importance of antique city since the economical importance has been noticed.

As Arycanda has been located onto a hilly region, hard to distinguish all the parts wholly. The uncompleted site arrangement has caused not to be able to visit some parts as desired. Site arrangement has become more important since no publication has been printed yet. Also solving some problems sourced from the geographical conditions, is so important for the protection of the city.

All the archaeological fields carry some paculiar problems. One rule which has been applied, may construct a base to any other.

The aim of this study is to examine the problems of antique cities in Turkey, and specifically to seek for a solution about the archaeological conservation and restoration problems of Arycanda. Finally, preparing a detailed study about the site arrangement of the antique city.

1.2. Scope of the Study

A well organized team work and detailed study of the various subjects are required to obtain a good solution about the conservation and restoration problems. This study is limited only by the site arrangement problems, the possibilities and the proposals. Since the excavations have been continued, it has not been determined the exact solutions of the parts under the excavation. Therefore, it has proposed some solutions regarding to the possible

selections.

In the beginning, it was planned to work in the site planning, and then to shift into more and more details, step by step. Since the scientific studies of Arycanda have not published, the detailed informations would have not been achieved. By only working on the site planning scale, the suggestions could be constituted.

1.3. Methodology of Study

It was participated to the Arycanda excavations in June 21st, September 1st, 1986, and August 12th, August 30th, 1987, under the execution of Prof. Cevdet Bayburtluoğlu. The problems of the excavation field, the working conditions, and the specific problems of Arycanda were investigated within those intervals. Beside that, it was tried to become familiar to the city buildings one and one by joining the documentation studies. Also the site arrangement problem was investigated by participating the excavation and conservation studies.

The site plan has been completed by the architect, Paul Knoublach. His drawings have been as a base by the permission of Prof. Cevdet Bayburtluoğlu.

The general characteristics of the site and its topography, the site planning, and the buildings, were all examined when joined into the excavations. The problems of the site, the structural conditions of the buildings, the

path of the tour routes were researched during this period. The other informations about the field were taken from Prof. Dr. Cevdet Bayburtluoğlu.

Documents concerning archaeological fields are rarely found in Turkey. Also existing documents are scientific resources of archaeologists and art historians. Also, it is hard to obtain concerning statistics, documents and researches. Books about antique cities are usually printed for only turistic purposes. So little documents exist based on applications. Articles written about this subject are few. Most are already interested about the conservation of small pieces.

Generally, site arrangement is not under a program or under a control of any projects in Turkey. Primary point is excavation, and site arrangement takes a secondary place. It is considered that the site arrangements are careless and in a temporary form in the visited various antique cities.

The study is based on the analyses of the documents, the observations, and the specimen of applications. The following steps are performed during this study :

Description : It is defined in two parts; the first part includes the general problems of archaeological sites which is defined as administral problems and archaeological conservation problems. The second includes the special problems of the antique city, Arycanda.

Documentation : These are obtained from written resources, verbal resources, and physical data and applications. In the collection of the knowledge about Arycanda, the great help is sourced from Prof. Dr. Cevdet Bayburtluoglu. The physical data and applications are collected from the antique cities - Ephesus, Priene, Miletos, Pergamon where the extensive applications have been seen about conservation and restoration.

The tables are prepared by the evaluation of documentation. They are classified as conservation problems of buildings, relationalship of buildings with each other, and the resources of buildings. The site problems, the problems of buildings, and materials problems are classified. The advantages and possibilities of refunctioning of the buildings are analysed.

Recommendation : As a conclusion the tables of intervention and usage are prepared. The general features of the site arrangement of Arycanda is achieved. The alternatives of refunctioning of the buildings and areas are recommended.

2. CONSERVATION PROBLEMS OF ARCHAEOLOGICAL EXCAVATIONS IN TURKEY

The science of archaeology is appeared because of the senses about learning the past of the humankind, collecting the memories. and the works of art, and to carry these heritage to the later generations.

In the 16th century, plenty of visual remains belonging to the various civilizations have been noticed in Anatolia by the travellers. Anatolia is one of the rare regions which the remains of the cultures from the prehistoric ages up to now could be observed without any interruption, and the cultural evolution and archaeological order could be followed harmoniously in a scientific manner.

At the end of 18th and the early 19th centuries, by the publications of European travellers like Texier, Fellows, Hamilton, Perrot, all kinds of remains at Anatolia have been begun to introduce and investigate(1). Although the unconsernity of Ottoman Empire causes a plunder of this curiosity, an interesting development was experienced by the clearence of "the treshold of the civilizations" as Anatolia not Greece(2).

At the beginning of the 20th century, the foreigners were entirely dominant on the archaeology at Anatolia. During this period, archaeological procedures were seemed as a hunting of ancient pieces and monuments. The principle of "understanding the past of human kind by the help of works achieved at the ancient areas" was pushed to a side and collecting the products for the museums of Europe(3). Many remains of the old civilizations were destroyed by the modern heirs. On the other hand, the attitute by Ottomans was very insensitive; "we have more than enough stones in our country"(4). As a result of this approach, the attitute was in a conniving manner by giving the ancient pieces and monuments sometimes as a donation or selling as a contribution to the budget.

The first Law of Ancient Monuments, originated in 1874, was performing the obligation about the ancient pieces taken out to the abroad, on taking a share of ratio about 1/3 (5).

In 1881, Osman Hamdi Bey had been the director of the museum, and in 1884, the regulations of ancient remains were declared and called with the name of "Asar-ı Atika Nizamnamesi", which has been applied with the main lines for a long time. This was the first serious step on the subject. As a result, the archaeological excavations in Anatolia were put in order by this legislation, and it was forbidden to take the ancient pieces abroad(6).

After the declaration of the legislation of ancient works, Osman Hamdi Bey took the lead on establishing the primary museums and systematic publications of these museums. (1881-1908) (7).

Meanwhile, in order to avoid the smuggling of ancient works of arts, Osman Hamdi Bey maintained that, Turkish teams had to excavate our own archaeological sites, and in 1883, he formed the first Turkish team for the archaeological excavation at the mountains of Nemrut. The works of arts found in the excavations at Sayda, the Cemetery of kings in 1887, caused to the construction of a museum and coming of the visitors from abroad(8).

In 1917, "Eski Eserleri Koruma Kurulu" was established. Its work was to protect the ancient works of arts and monuments standing out of the museum.

During the Turkish War of Independence, Ataturk began to give importance to the ancient works of arts and the museums. After the establishment of the Republic of Turkey, he inquired investigations of our national culture and the relevant documents. He also demanded the museums to be dealed with the modern methods.

Afterwards, to enable rising Turkey to the developed countries, like in many other subjects; instead of realizing the main elements (establishing, printing scientific publications, giving necessary education etc.), copying them or occupation of people from the different

professions (generally curious amateurs) intervene the progress of archaeology in Turkey up to the time of the republican period. This progress started by the contribution of Atatürk at that period.

By establishing "Türk Tarih Kurumu (1931)" and the chair of archaeology at the universities, Turkish excavation teams started to excavate at various sites.

After 1956, excavations have been started to be executed according to the international principles in the archaeological sites, which are admitted by UNESCO(9).

Today, many native and foreign excavations are (App.C) achieved at various regions of Anatolia, and the investigations are presented at The Symposium of Excavations, Surveys, and Archaeometry(10).

Though the opinions and the knowledge about the ancient works are widespread nowadays, words of a minister in 1980s about sending the Roman monuments to Rome, Greek monuments to Greece, indicates that we are still undeveloped(11). In the days, very close to 21st century, while working on rescuing and restoring the ancient monuments on the other hand, demolitions are going to despite of laws with a mentality of "I demolish and suffer in spite of punishment"(12).

The conservation problems of archaeological sites in Turkey could be considered in two headings; one of ,them

is administral, the other is archaeological conservation of sites and objects.

2.1. Administrative Problems

2.1.1.Policy

Turkey has not constructed any consistent cultural and educational policy in general. So, it is too hard to talk about a policy which protects archaeology indeed. Government policy has existed instead of states' own. Every changing government has brought a new view to the world of archaeology in Turkey. Also this has caused to a daily policy instead of a stable and consistent state policy. Unfortunately, the state of Turkey has not attached the necessary importance to the archaeological finds. Most of the works have been achieved by the individuals. The related laws have not helped indeed, and even have caused to some difficulties.

An excavation in an archaeological field requires so much time, work and money. Since no consistent and continuous policy exist, no future projects and works can be planned as desired. Only rescue projects are prepared when a dam, or a road, or an irrigation project is planned as a demand of scientists. Especially, construction of a dam comprises many archaeological sites, which requires much more time and money than the others to rescue all of them. One of them; the rescue project of Keban Dam was started in 1966 by METU, Faculty of Architecture,

Department of Restoration. It was spent about six years to determine and to rescue all the sites which will be sunk in Firat. But, unfortunately only 20 sites rescued out of 50 at the end(13).

Though the antique city, Phaselis, has been involved by the "Güney Antalya Turizm Projesi", the excavations have been stopped in Phaselis by the reason of lacking funds.

The other side of the cultural policy is to approach to the works other than Turkish and Islamic with an antogonist behaviour. It is not clever to consider only last several centuries while the land of Anatolians has a history consisting thousand of years. The last unfortunate example of this behaviour is proved in a TV program about the antique sites which will be vanished as a result of "Güney Anadolu Projesi".

The six parts -out of ten- were rejected since they are not consisted "enough Turkish culture and history" inside.

In addition to demolitions occured as a result of rapid and planless urbanization, also development of tourism has begun to cause similar effects. One of the sharp examples has been observed in Side. The antique city has stucked in big blocks as many others. Also some archaeological sites have been diminished carelessly and some touristic investments have been constructed on.

2.1.2. Financial Problems

Preliminary objectives for preserving, presenting, and maintaining a site should be agreed upon, and budgeted as early as possible.A principle reason for this that the excavation can then be carried out with site preservation and presentation.

The funds obtained for conservation, and the publication needs (staff, facilities, materials, printing, etc.) must be sufficient. Some budgets and grants spent before for the excavation as post-excavation and publication may cost higher than those of the field work. The recurrent costs of site maintenance and storage of finds also have to be calculated and budgeted.

The financial aid for an excavation is supplied by the societies as Türk Tarih Kurumu, Eski Eserler ve Müzeler Genel Müdürlüğü, universities, or by the semi official societies, as Eski Eserleri Sevenler Derneği. This established fund is used to cover all the expenditures of excavation to pay labor wages, to purchase the necessary equipment, and to provide any kind of services. Every expenditure must be announced to the nearest fiscal offices. Thus a series of the bureaucratic problems occur.

The Ministry of Culture and Tourism does not supply any financial resources even in providing excavation house, transportation vehicle, or excavation equipment;

but carries out the intervention duty.

In some cases, the related laws hinder the works and preventions immediately to be done, or fortunately cause only postponements.

After an excavation is completed, excavation field is connected to the local museum and left to the responsibility of director of museum. Since the sufficient amount of fund has not been supplied to the local museums to make periodical maintenance, the destruction process rapidly initiates.

2.1.3. Smuggling of Archaeological Materials :

2.1.3.1. Official :

In the 18th and 19th centuries, some archaeological institutes from various countries had the necessary permission to excavate some of the important archaeological sites in some parts of the Ottoman Empire. Their goal was to contribute to the science of archaeology! Indeed, obvious aim to carry all the precious and beautiful works of art and history to their own countries and museums.

On the other hand, while the Ottoman Empire was falling, had not any wish to spend money, time and labor force to claim the archaeologic finds among the economical problems and the wars. Most of the historical remains were

plundered officially under a permission of emperor's as: "gold is mine, stone is yours". This is very painfull that even a financial aid had been made to the European museums by the sign of the Ottoman Emperors, Mahmut II and Abdülhamit II. As an attractive example, Mouseleum of Halikarnassos was sent to Germany by financing its transportation. Now, many beautiful and precious antique pieces of Anatolia adorn the most famous museums of the world.

The first law of ancient monuments was declared in 1874 to prevent the plundering of the ancient pieces. But, transferring of the archaeological finds abroad was prohibited by the Asar-i Atika Nizamnamesi in 1884.

2.1.3.2. Unofficial :

But it is hard to say that transferring the archaeological pieces are prevented. Many precious and beautiful archaeological finds originally belonged to the land of Anatolians, have been smuggled abroad by illegal ways. Most of them are exhibited at the famous museums of Europe and the U.S. now.

High prices and easy smuggling of the small pieces of archaeological finds attracts the people for an easy income. Even provides a means of living to some of the Anatolians in many regions. Especially in the eastern Anatolia, it has been destroyed many antique cities to

obtain Urartian finds which can be easily sold with high prices. Also, in developed regions of Turkey, as Cremna close to Bucak, district of Burdur, or Cadyanda very near Fethiye, peasents have joined to the cladestine excavations and worked in smuggling of archaeological objects. Therefore those antique cities have been destroyed heavily.

The number of smuggling archaeological materials has risen to the ten thousands in the last 30-40 years. This is only visible side of smuggling. The greatness of problem has been realized fearfully, if the unknown world of smuggling has taken into consideration.

2.2. Archaeological Conservation of Sites and objects :

The problems of preserving and presenting archaeological and architectural remains in-situ are among the most difficult faced today by archaeologists and architectural conservators.

The conservation of archaeological material must begin in the field. Though the excavation and other archaeological techniques have developed rapidly in the past fifty years, the standarts of conservation of excavated material have not generally improved as much as the other archaeological techniques. The two must be considered together to transmit the maximum information, and the finds for future generations.

The proper conservation of structures and objects during an excavation, is best assured by having a professional conservator as a full time member of the excavation team. This is rarely achieved, however, for lack of qualified conservators.

In many cases, similar treatments can be used to extand the life of remaining buildings; however, the problems of any two sites are never exactly alike. Climatic situations alone affects the preservation, presentation, interventions which can be used in the archaeological sites (structural stabilization, reconstruction, and sheltering).

In the event of excavation, the techniques of conservation are applied to the excavated remains during, and immediately following their exposure. This is a field of the archaeological conservation seperated from the archaeological conservation in laboratory.

2.2.1. Superstructure Problems :

The first necessity of excavation field is an excavation house which can be later adapted to become an information center and museum for the site. Beside being a house for the excavation team, this should also include some parts for storage, inventory, drawing, maintenance, and restoration purposes. The Ministry of Culture and Tourism has not saved any funds for the requirements of the excavation houses. But the ministry helps to take the

necessary permissions from the related institutions. If it is necessary to rent an excavation house, money is supplied from excavation fund. If a school is appropriate for this purpose, the necessary permission is taken from the Ministry of National Education by the helps of the Ministry of Culture and Tourism to use this building during excavation period. If an expropriated house exists in the archaeological site, this may be used after the necessary permission is taken by the ministry.

As a result of proceeding excavation, some other problems have arisen. For instance, entrance should be taken under control, and the required constructions should be completed for a watchman and an information office. Also there is needed an exhibition house to present excavation finds. These additional buildings which are located just near or inside, or indirectly located a little far from the excavation field, have great importance to provide nice integrity. But, the necessary attention has not paid generally.

The applications may vary even in the same excavation field as in Sardis. Though some pretty buildings were constructed like the excavation house (Fig.1) which provides nice integration with its environment, also some ugly and careless buildings were constructed in the same place like the watchman house and the buffet.(Fig.2,3)

Fig.1. Excavation house, Sardis

Fig.2. Control gate, Sardis

Fig.3. Buffet, Sardis

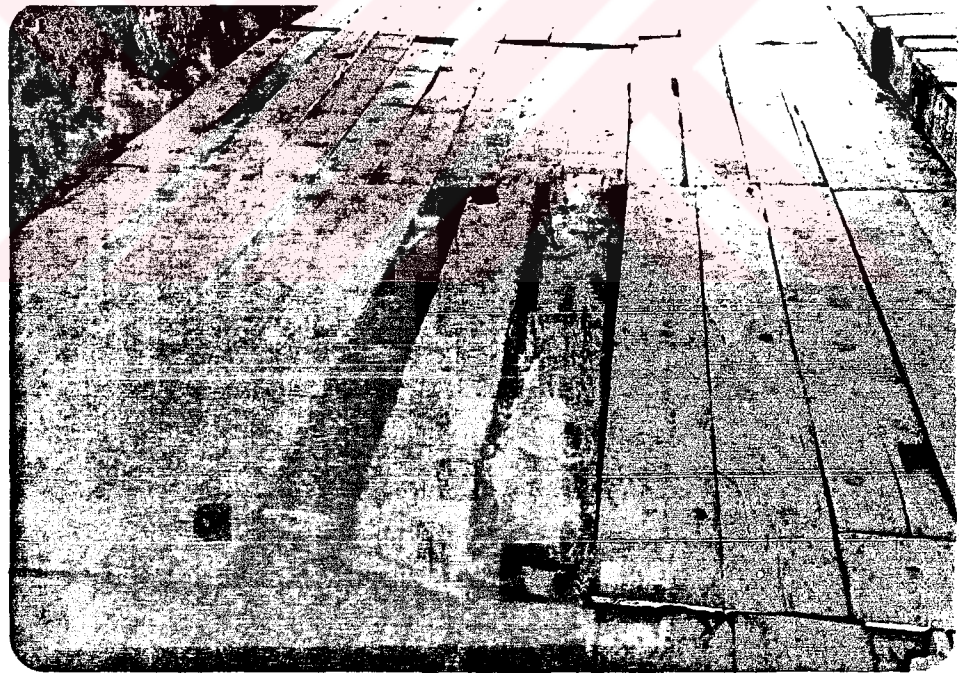


Fig.4. Protective covering of the pavement, Sardis

Shelters are considered as another superstructure necessity which protect some archaeological remains. They are used to cover a stone , or a pavement (Fig.4), or a piscina (Fig.5). Sometimes larger examples of sheltering can be observed like in Sardis-Palaestra- (Fig.6) and Miletos -Synagogue-(Fig.7). Though some of the shelters are temporary, they may remain several months or even a couple of years. This proves the importance of the problem from the esthetical view of point.

Beside the architectural quality of museum-exhibition house, there should be paid great attention about illumination and organization of exhibition, and also presentation of explanatory information. Insufficient and incorrect illumination, disharmony of exhibition house-museum, and insufficient explanations create big injustice to all the works spent.

2.2.2. Infrastructure Problems

In Turkey, it has not yet solved the infrastructure problems of archaeological sites, except the ones which are located in inhabited areas. Some of the archaeological cities have some advantages as being located onto flat land, being worked for a long time, or being very close to new settlements(e.g. Ephesus, Pergamon, Kaunos, Didyma etc.). Some others are unlucky (e.g. Labranda, Pinara, etc.), which are located in hilly regions and far from the new settlements. If the quality of the roads are not

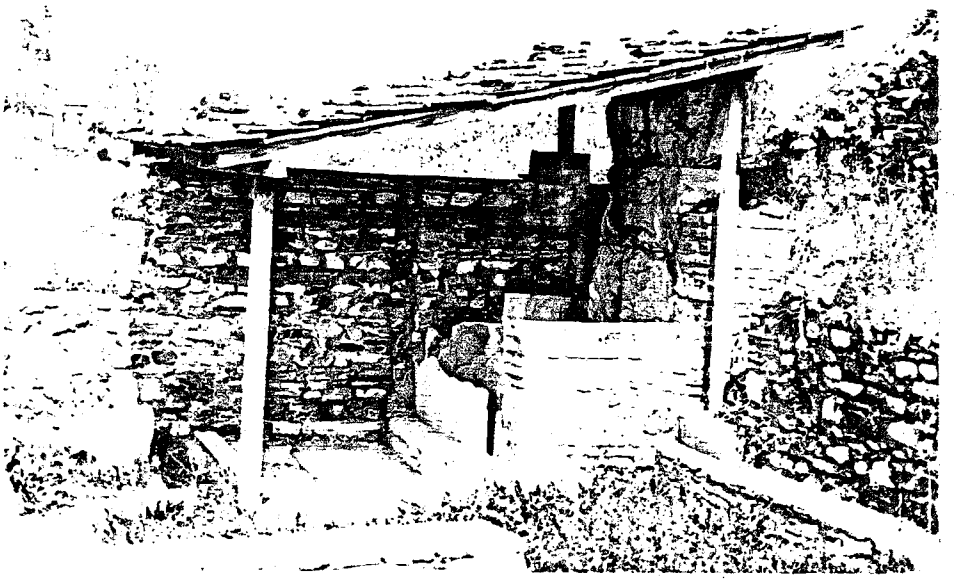


Fig.5. Shelter on the piscina, Sardis

Fig.6. Shelter at the palaestra, Sardis

considered (as asphalt, stabilized etc.), there may be accepted the transportation problem of antique cities solved compared to the others.

The similar optimistic opinion can not be carried for the remaining problems. The necessary services are supplied by the related institutions after the demands of excavation chiefs. The ministry only provides coordination between them. But, the necessary aid is again taken from the excavation fund. Some cuts must be necessarily done to hold the cost low without any consideration to the esthetical view of solution.

It has not applied proper site lighting in most of the antique cities. Even some of those have not been electrified yet. Therefore, lack of the electricity has obstructed the restoration works (e.g. Arycanda). In the cities that own the electricity, tall towers have been used for the transmission purposes. This has caused to distruction of the esthetical views of site(Fig.8).

2.2.3. Preliminary Documentation of objects :

Always taking good record is so important during the excavation. Unlike many specific experiments, an excavation cannot be repeated. An excavation means destruction of archaeological remains which can only be survived as drawings, notes, samples and artifacts.

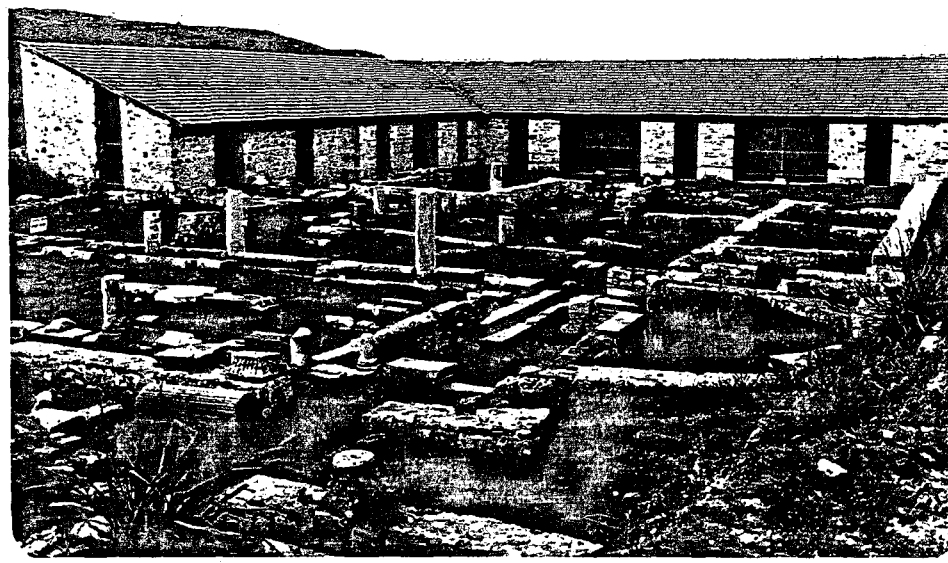


Fig.7. Synagogue, Miletos

Fig.8. Electric towers, Asklepion, Bergama

The fundamentals of recording a site, its layers, features, and finds are ordered for a series of fixed points to which every measurement can be related.

Photographs of all important features from various angles should be taken as an integral parts of the plans. If these are available to compare with the drawn plans, later no error can occur. Photographs do not replace drawings, but complete them.

Documentations should be done in different forms according to the quality and scale of the building in each case. Being carefull and correct is very important in documentation.

Generally, photogrammetric documentation techniques are very useful when classical techniques become insufficient. This makes the work very easy, rapid and sensitive, for the architectural documentation of especially sites.

2.2.4. Conservation Techniques :

For a successful conservation, good communication among archaeologists, conservators, curators, architects and site protectors is particularly important.

The conservation measures will be either preventive (active maintenance) or remedial (Cleaning and treating to reduce the rate of deterioration). Rarely restoration will be carried out, and only for presenting purposes the

identifiable completion of a space on objects, are the anastylosis of dismembered monument on sites.

After excavation an objective and general evaluation of a site should be made on assessing all the problems, An initial question might be that; should the site be presented at all.

A second question might be that; what level should one intervane in preserving site and its structure. There are therefore certain criteria to be considered, involving(15):

.Technical conservation,

.Scientific information, and

.Esthetics.

Special measures, beyond pure conservation interventions are almost always necessary after the basic decision is made to keep an archaeological excavation open and accessible.

In excavations the didactic element complements the scientific one. It depends on various conditions of a cultural, ideological, political and economic nature how the two elements supported on the archaeological and architectural remains.

The well equipped and illustrated excavation site, which its urban and architectural monuments and the museum with presentation of movable finds, complement each other

and create an inseperability at whole.

The manner, degree and extent of restoration should be oriented to the scientific standarts and at the same time may clear the degree of our scientific knowledge about the site as a whole and its monuments. Therefore one will decide between(16) :

.Display of architectural examples (partly anastylosis),

.Anastylosis,

.Reconstruction,

.Clearing and conservation of the site and its arrangement for the visitors.

The measure should be taken appropriately to the significance of the find so that the values of the site will become clear to the visitors.

2.2.4.1. Display of Architectural Examples (partly anastylosis) :

For informative didactic treatment and for the effective protection of building components, architectural elements that form a unit should be correctly assembled, and placed in a clear relationship to the monument which they belong. The presentation should correspond to the extent of scientific knowledge of monument and make this quite clear.

A reduction in scale is not advisible though many excavators have thought that it is a good method for presenting the upper part of a building when the lower part is missing (Fig.9). A pretentious objective character should be maintained in the presentation of the finds. Display of architecture can also be used to emphesize significant features inside the excavation site and to serve indirectly as a guide to visitors.

2.2.4.2. Anastylosis :

Anastylosis is a strict sense can only be the identical re-erection of a dismembered historical building or one part of it in its original position. In such anastylosis, which is only possible when most of the original building elements are preserved, every element should take up its original position and structural role.

As a rule this is possible only with cut stone architecture with its characteristic technique.

Such anastylosis represents an ideal case as much in the sense of scientific research as in the actual work of a historical monument.

The integrity of the monument is the first goal. Every modern intervention made it to be realized and remain in the background.

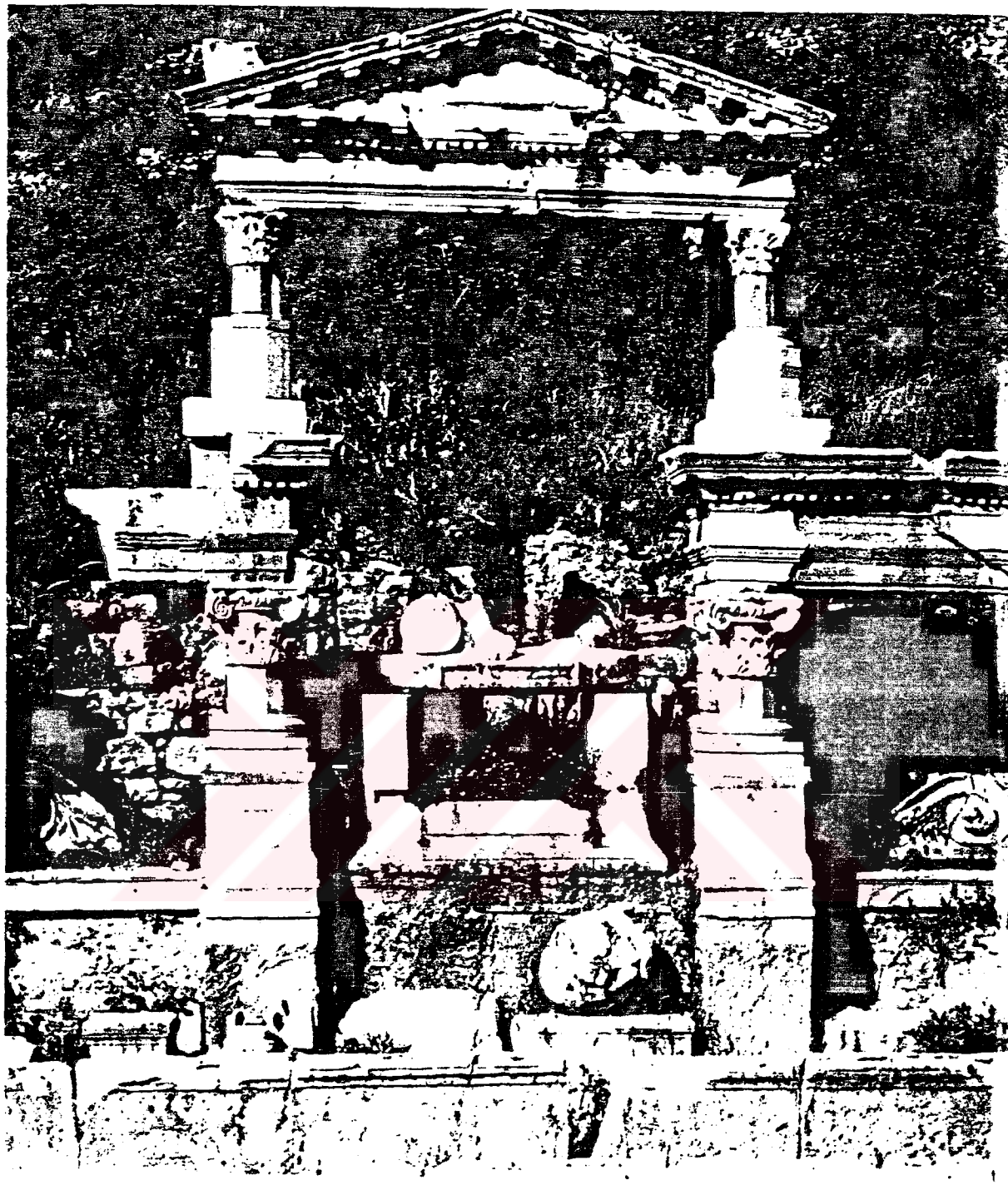


Fig.9. Traian fountain, Ephesus

2.2.4.3. Reconstruction :

Reconstruction is clearly to be distinguished from anastylosis. For ancient stone architecture with its inherent logic of form, it is frequently possible to make scientifically correct reconstructions on paper although comperatively little of the original building survives. But even where a surviving building element can be placed successfully in its original position, the character of the modern reconstruction always remains dominant if too few of the original elements survive, as an example of gymnasion of Sardis (Fig.10). Its erection on the original foundation in ruined excavation site is always problemmatical.

The only logical situation where complete reconstructions might be undertaken when there is a complete or very nearly complete archival or archaeological evidence. Like Celsus Library in Ephesus (Fig.11). Otherwise, reconstruction should be limited to anastylosis.

2.2.4.4. Clearing and Conservation of the Site and its Arrangement for the Visitors :

Planning for the preservation of archaeological remains and their interpretation is a result of site planning. Visitor circulation and its control should, where possible, be guided by inherent circulation paths inside the site. For instance, site access for the modern

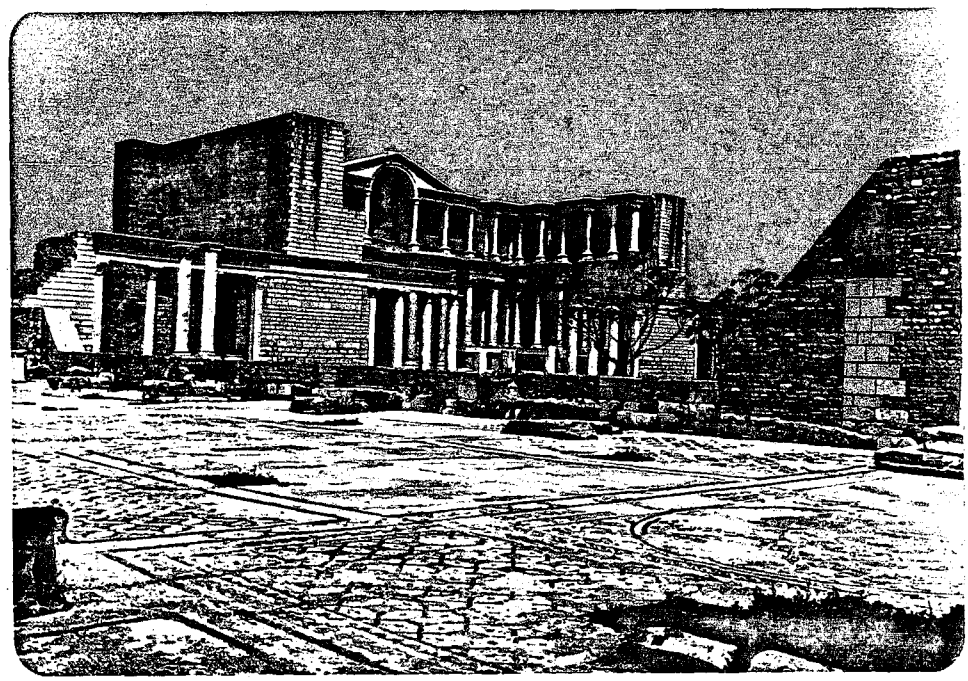


Fig.10. Gymnasium, Sardis

Fig.11. Celsus library, Ephesus

visitors should be from the same direction as that of an original inhabitant.

Obviously, the first task is planning of facilities (protective fences, paths etc.) to reduce the risk of danger to visitors as well as danger to the monuments caused by visitors. At this stage, the didactic element can already be effective, for example, by carefully designing paths instead of natural tracks.

Second task is planning of facilities to form an harmony in the general view of archaeological finds. It is hard to harmonize such a site which is surrounded by barbed wires as it is seen in most cases like Sardis (Fig.12). Informative, warning, and regulatory signs that contain sufficient information must be designed and arranged properly (Fig.13,14).

Sometimes a ruined monument is so important, famous, or expressive with its monumentality that is in fact desirable to preserve it as a ruin without any alteration. But in most cases, there are visible technical precautions to take in a certain harmony with the surrounding landscape of ruins. These will become more definite, the more restricted the extend of the original remains, that is the less of original form of the ruin is recognizable. So many means of technically necessary interventions one will aim for an explanation of the monument.

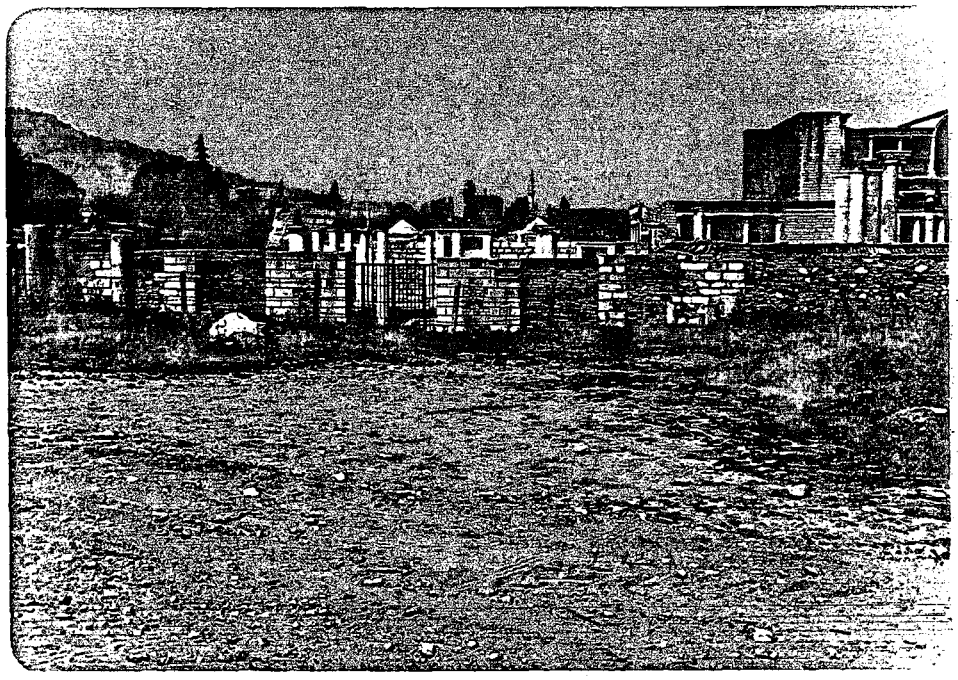


Fig.12. Barbet wires, Sardis

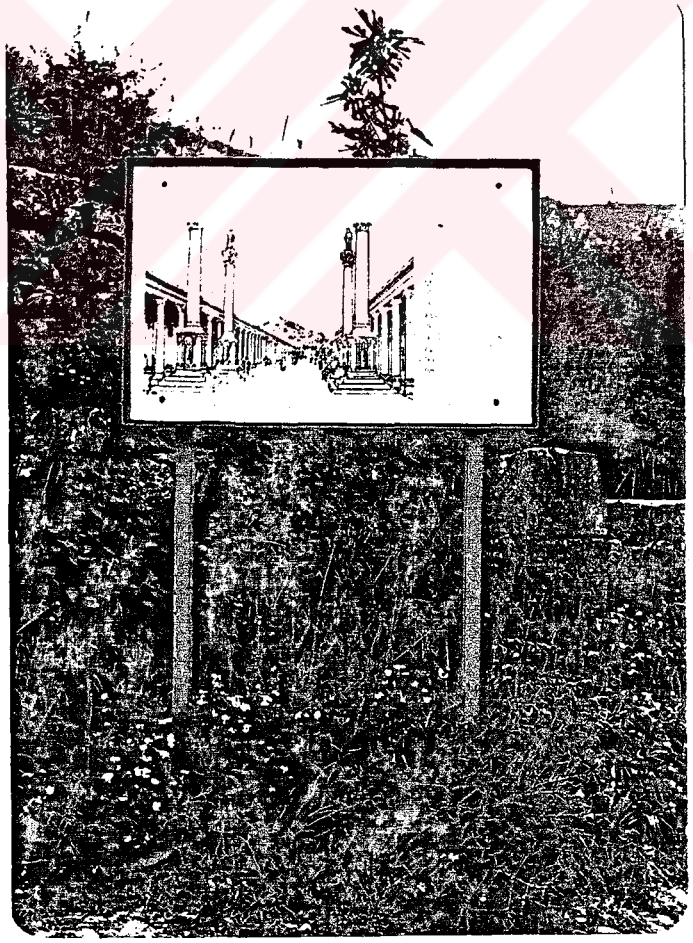


Fig.13. Informative sign, Ephesus

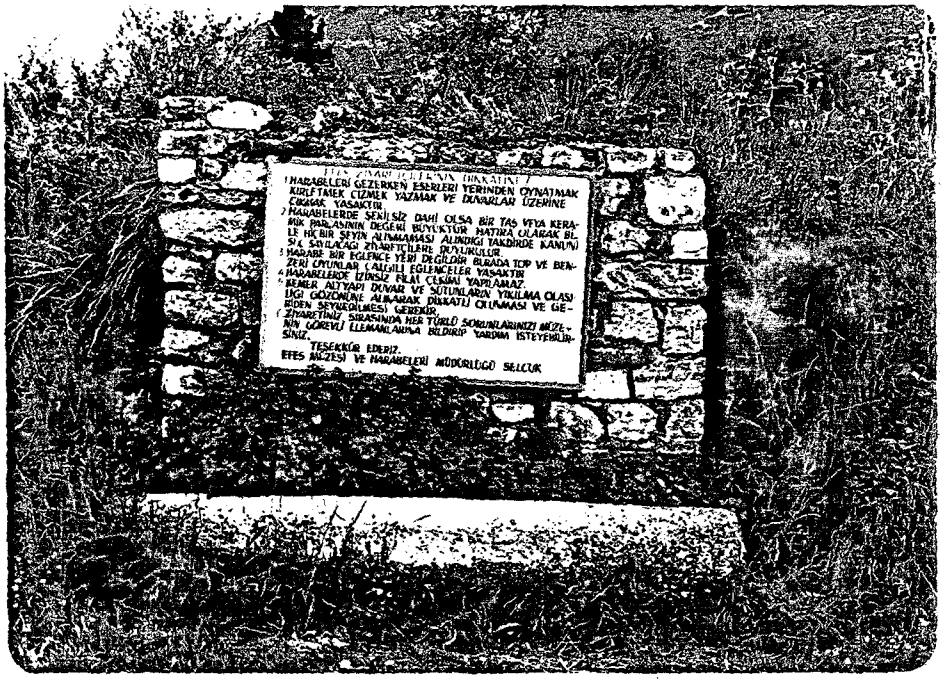


Fig.14. Warning sign, Ephesus

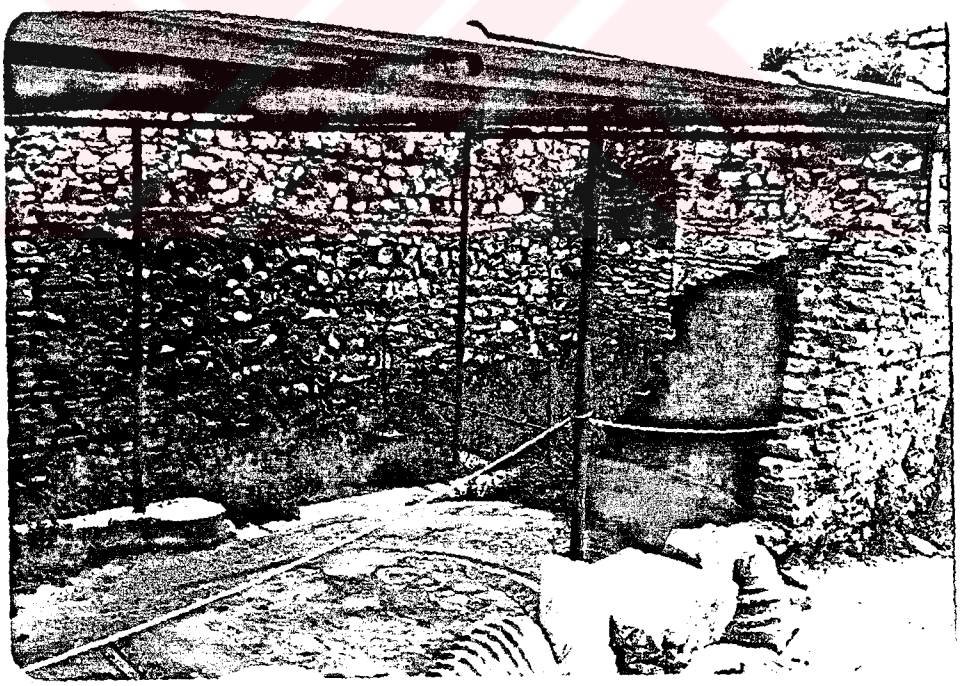


Fig.15. Shelter, Ephesus

Sites under excavation an open exhibition for short periods, can be easily and economically enclosed in any several types of temporary structures. Such a structure actually serve to protect both the excavation and the excavators from direct sunlight or later uses protect the excavation from rain water (Fig.15,16).

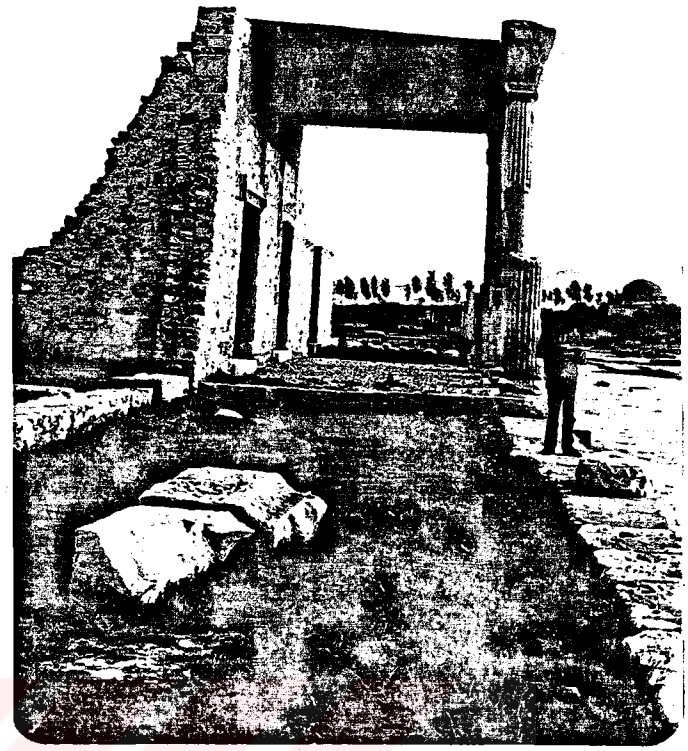
There are many examples of sheltering and protecting in-situ archaeological remains. It is possible to intervane simpler, most practical which are also be more technically and theoratically complex.

For example, for presenting mosaic pavements,a walkway bridges could be erected. The visitors walk elevated walkways with carefully located footings for viewing. While mosaics are conserving in-situ, it may be applied to the method of laying carpets in closed space to provide protection (Fig.17).

Fibre-reinforced membranes can stretch over light-weight structural frames which can span over 20 m. Ducts and directional rain leaders send water away from excavated portions of site. Ruined wall tops could be consolidated by capping (Fig.18).

The functional sheltering system effectively protects the excavated areas from direct sunlight and rain, and its color and low height are sufficiently neutral so as not to change significantly from the natural character of side. The structural system and roof of the

Fig.16. Shelter, Miletos



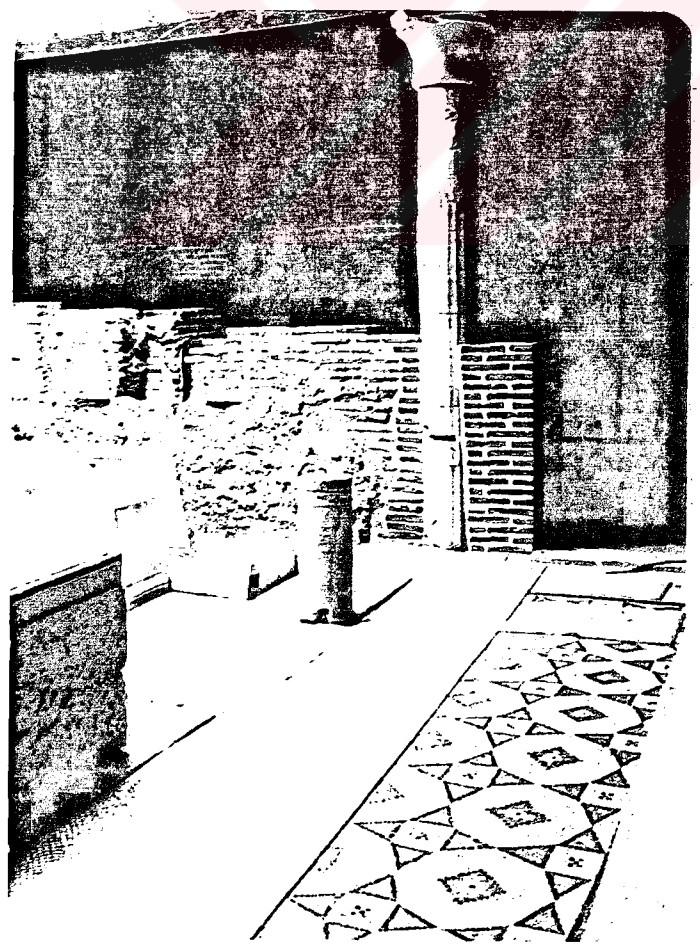


Fig.17. Protection of mosaics Ephesus

Fig.18. Capping, Houses of Bronzes, Sardis

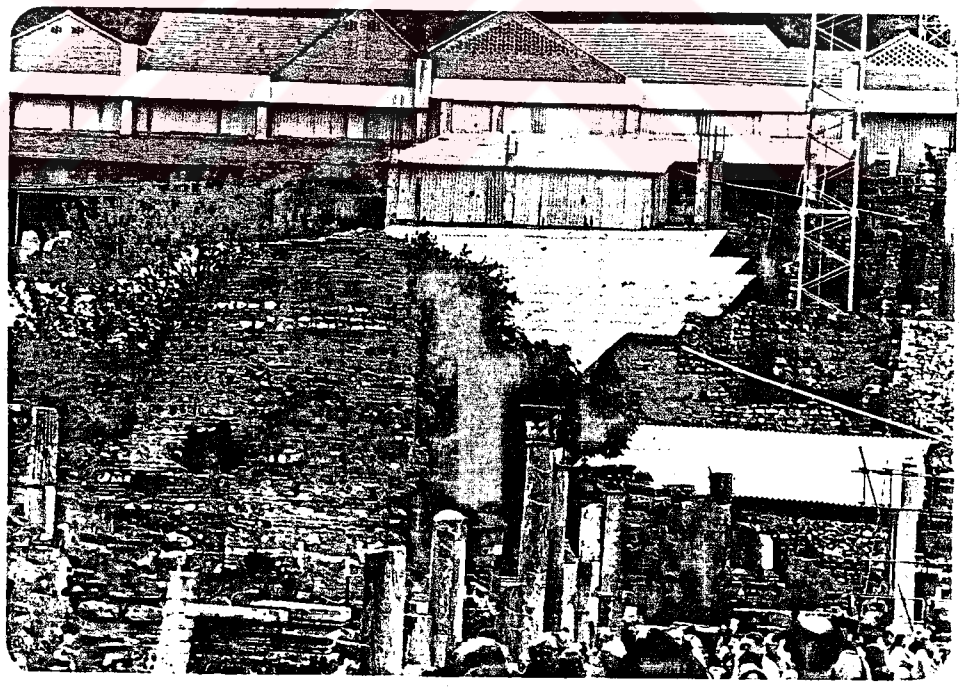


Fig.19. Terrace Houses, Ephesus

shelter should not appear monumental in relation to the site (Fig.19).

More durable features at the site such as standing stone walls or stone road have been reconstructed the date of restoration work was occasionally sharped into the newer mortar work (Fig.20).

2.2.5. Landscape Restoration :

During the presentation of consolidated architectural remains, the well kept grounds have restored landscape features, and presented as an archaeological park (Fig.21).

Restoring landscape features based on archaeological evidence, can be highly effective in site presentations. Restored gardening elements such as trees, gardens, and flowers can offer the practical advantages of shade and windbreaks while also directing visitor flow through a site (Fig.22). Only native plants should be used, and should be carefully placed with preservation of the site.

Restored water features can also contribute great effectiveness to the site presentation. Reactivating stationary water displays such as fountains and restoring water bodies and edge conditions, can add a pleasent vitality to the stillness frequently found at uninhabitant sites (Fig.23). In some cases, original water collection and distribution system can be activated.

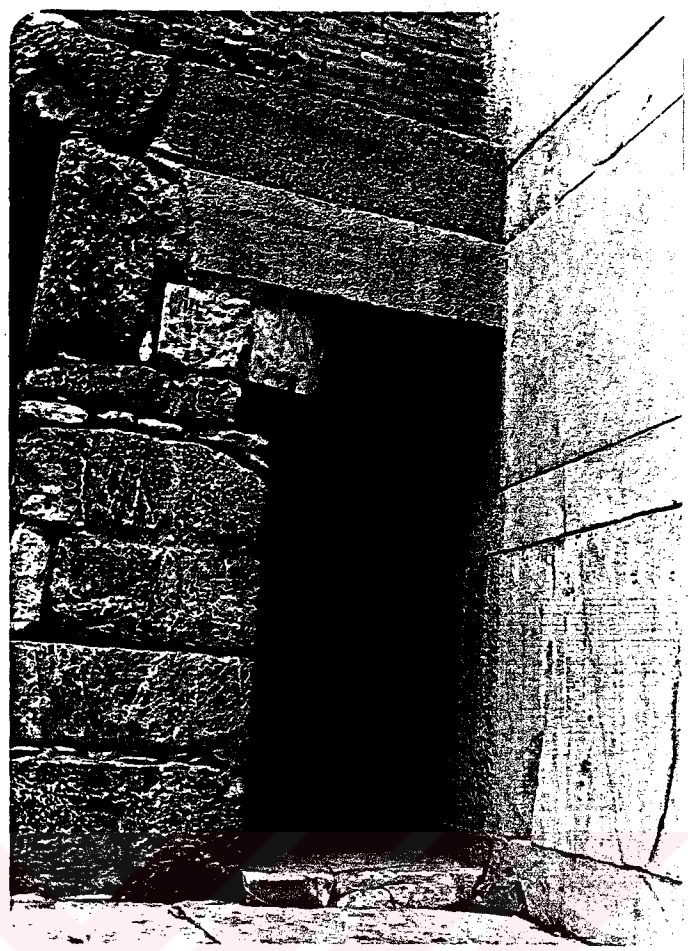


Fig.20. Concrete usage, Ephesus

Fig.21. Synagogue, Sardis

Fig.22. Entrance, Ephesus

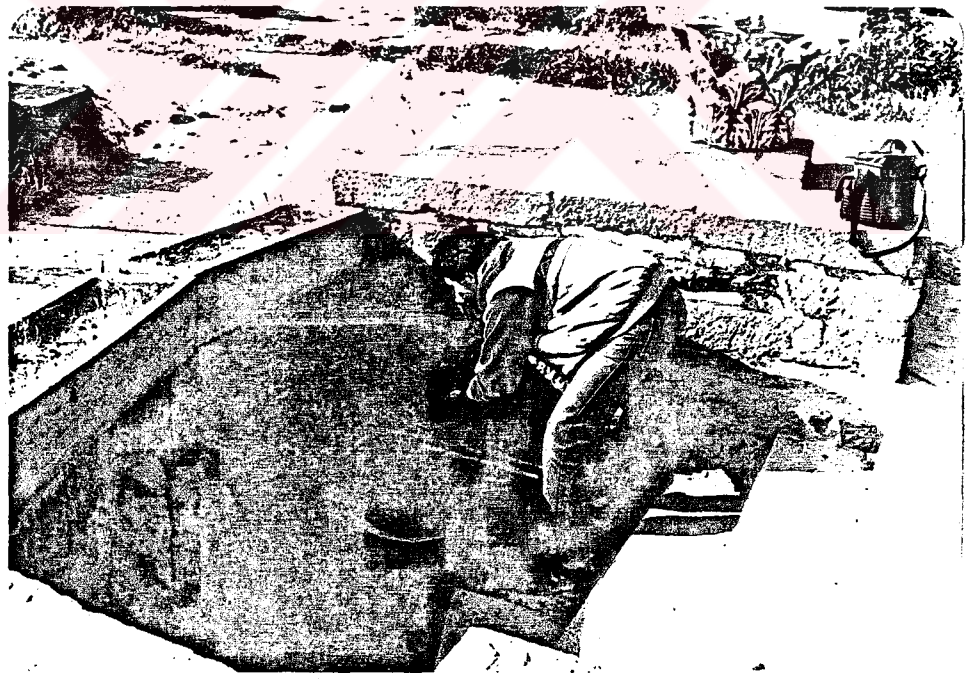


Fig.23. Holly pool, Bergama

The presentation of sites is primarily a question of landscape restoration, as in cases where original landscape elements, and occasionally complete gardens, remain. A less horticultural example would be the restoration of a battlefield consisting mainly of earth-works. This sort of presentation usually requires practical revisions.

2.2.6. Publication of Excavation :

By definition all excavations are kind of destruction. The precission taken in records and in conservation are not the end of the archaeological work, but are only steps along the way towards the interpretations of the site and its publication. Publication is not a selection, it is a necessity. Many discussions and arguments had included in publications of excavations; the degree of detail, the quality of illustrations, the seperation of observations from interpretations.

2.2.7. Site Storage of Finds :

For storage of material at the site, it is difficult to make any valid generalization since conditions vary too much. Many long term excavations have the help of a local museum with permanent equipment including storage facilities, also providing the possibility of better conservation conditions.

The storage of finds which could be used whether temporary or not, should be chosen with the greatest care. It is generally recognized that their suitability for this purpose affects not only the correct conservation of finds, but also directly or indirectly, the whole life of the excavation and its related activities, from the first conservation measures to preliminary documentation work so on.

2.2.8. Maintenance of the Re-erected Monuments :

In most cases, the result of anastylosis retains ruined or episodic character, the building is rarely covered and the roofing elements seldom survive. Additional protective measures are necessary, usually in the form of waterproofing. This should be part of the normal maintenance of a restored excavation site, as the control of planned growth, the drainage, the regular painting of metal support constructions, the maintenance of footpaths and replacement of signs.

2.2.9. Final Remarks :

Experience at preserved and presented sites has proven that stabilization and restoration efforts can never be permanent measures in themselves since deterioration is a never-ending dynamic process. At exposed sites, a long-range commitment is needed, so to keep the resources unchanged as to mitigate the effects of the time. Therefore, it must be accepted that maintenance

is essential part of preservation. New developments in science and preservation practise must always be involved in the efforts for conserving sites.

To sum up, one must keep in mind that every intervention presents an opinion and an interpretation which is always the expression of its own time. In the interests, maximum objectivity, all interventions should therefore be avoided whenever possible or at least be sufficiently recognizable. In all cases, any measure beyond simple safeguarding of the remains must always be alterable and easy to move.

3. GENERAL OUTLINE OF ARYCANDA

3.1. Location

If it is drawn a straight line from Antalya to Fethiye, Lycia remains below the region is now called Teke Peninsula; and took part in the southeast of Anatolia. There were borders of Pamphylia in the east, Caria in the west and Pisidia in the north (Fig.24).

Arycanda, one of the Lycian cities, is located in the northern part of the East Lycia and in the midway of the Finike-Elmalı roads which was one of the important roads of the antique age (Fig.25). Arycanda is settled down in Arifköy the district of Aykırıçay, and at the bottom of Şahinkaya.

3.2. Transportation:

The only transportation to Arycanda is supplied by road. Most of the remains can easily be noticed from the Finike-Elmalı road at the 35 th km. By following "Arycanda 1" sign in the Aykırıçay district, then by turning to the stabilized road beside Orman İşletmeleri Müdürlüğü, it is arrived to the city after 1.5 km. The other remains seem arround the spring Başgöz/Aykırıçay

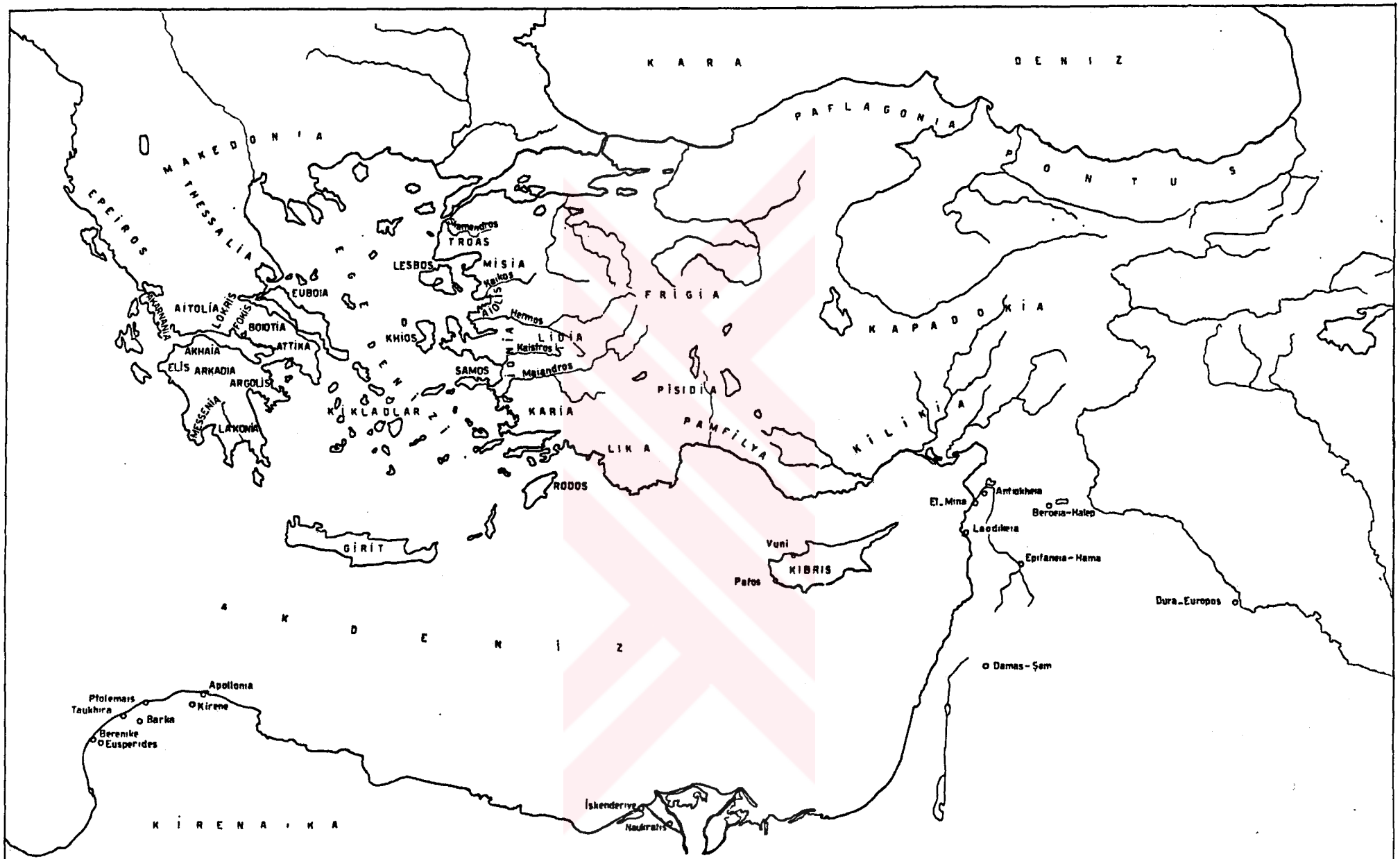


Fig.24 Map of Eastern Mediterranean at Antique Period
(Aşkıdıl Akarca, Şehir ve Savunma)

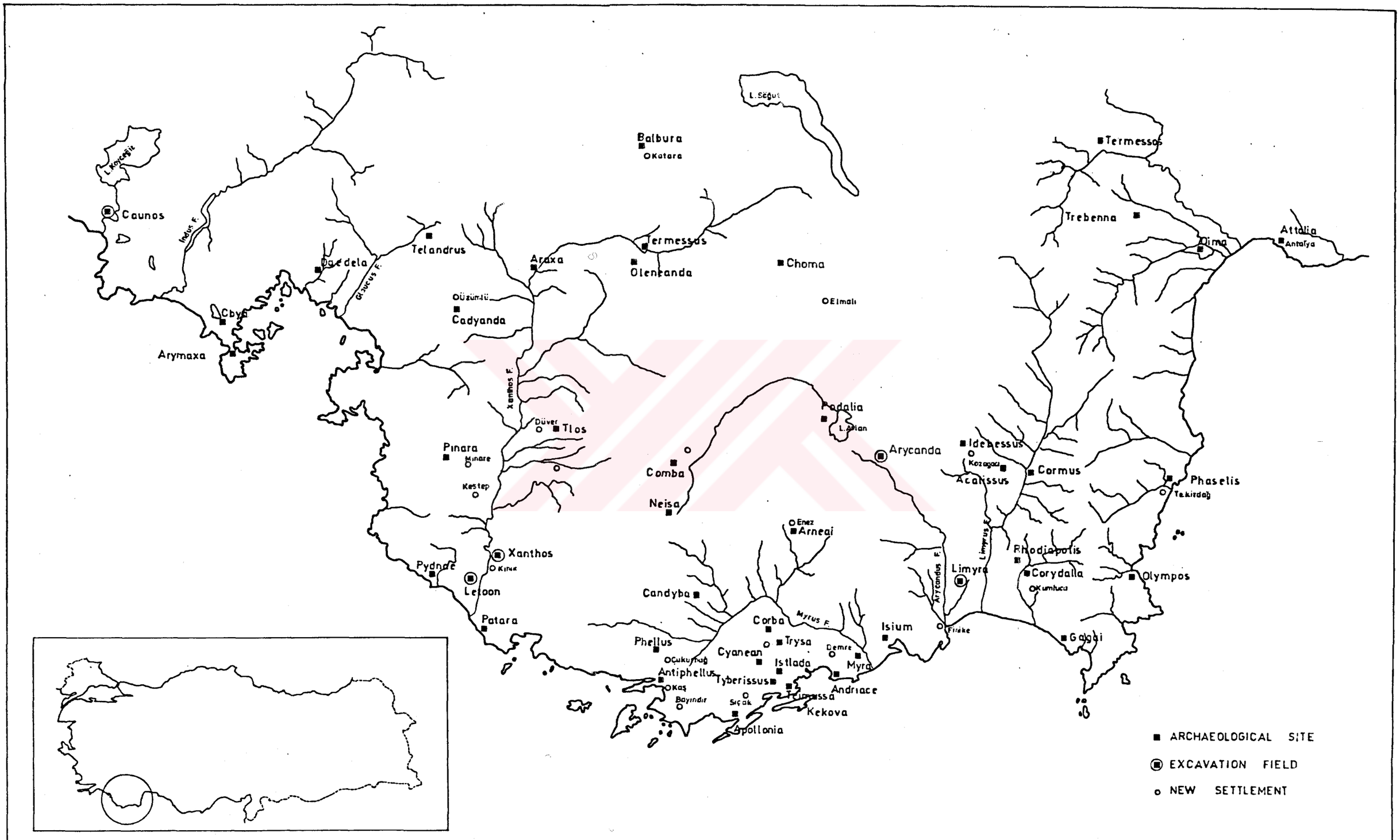


Fig.1 Map of Lycia (Oktay Aksit, Likya Tarihi)

(Arycandus), if it is not turned from the Finike-Elmalı road, and keep going a couple of hundred meters more towards Elmalı.

3.3 Climate

The climate of Lycia is predominantly Mediterranean, hot and dry summers with temparature around 30C and mild, rainy winters, with temparatures rarely below 10C.

In the hilly parts, the Mediterrannean climate is not effective any more and to be faced with condinental climate which brings cold winters and hot summers. Snow never falls at the coast, but appears in the mountains.

3.4. Vegetation

The cedars of Lycia were very famous in the ancient age. Now, the land of Lycia is very rich with various pine trees which are seen in the upper regions. Lycia is a fertile land and Elmalı plateau is one of the important agriculture land.

3.5. History of Lycia :

The systematic excavations have been continued around Karataş/Semahöyük -near Elmalı- by Prof. M.J. Mellink since 1963. It has been obtained important finds about the prehistorical ages during the excavations.

These archaeological finds support the philological evidences to prove the settlement in Lycia since the third millennium B.C.(18).

Lycians were called as Luggu-Lugga-Luwga in the Egyptian Tel-el-Amarna inscriptions, as Lugga in the Hittite sources(19), and as Lykioi (Lykios) in the Greeks beginning from the time of Ilias(20).

Lycians were one of the strong naval nations-mentioned as "People of the sea" in the Tel-el- Amarna archives-, during the Ageon migrations between the 14th century and 12th century B.C.(21).

Lycians joined into the Kades War as an ally of the Hittites against the Egyptians in 1295 B.C. According to Ilias written by Homeros, the second time Lycians appeared in the Troy Wars at the side of Troians, and fought heroically with their army(22).

During the age of colonies,Lycians kept their strong forces. Only Phaselis was lost in 696 B.C., and became one of the Greek colonies in the east cost of Lycia. Also in the colonies period, the name of Lycians was seen in a record which lists the countries that paid taxes to the Attik-Delos naval union. After a while, Lycians left the union, and nobody could resist their decision(23).

In the 7th century B.C., the attacks of the Lydians began to appear. But no remains left behind Lydians in the lycian country to our age(24).

The first remains left from Lycians belongs to the 8th century B.C. but non of these are original works of

Lycians. Most of them were imported from Corinth and Athens. The original works of the Lycians appeared about the 6th century B.C. such as the rock tombs. Also the alphabet was shaped by the influence of Greeks' and the Fenikian's at the same time(25). During this century, the Lycians were in a close relationship with the Greeks, and the effect of the Greek art is generally seen on the found remains.

So many names of princes, and various coins found from the 6th century B.C., indicate the existance of the city states and the principalities(26).

In the year 546 B.C., all over Anatolia-including Lycia- was occupied by Persians.

By time passes,the straight and merciless Persian rules became loose. As a result, all city states joined together and became one of the allies of the Greeks. Though these, the influence of the Persians was observed on the art works of the Lycians.

Lycia was devoted to the Persian satrap of Caria until the end of the 4th century B.C. While the country was governing by the capitol of Caria, Halikarnassos, all the Lycian states were tried to be unified by the prince of Limyra, Perikles. Though he reached to the farthest state, Thelmessos, could not be succeeded about his purpose(27).

Lycia was again occupied-this time by Alexander the Great-in 333 B.C. No resistance was occurred by the city states. Though there was small changes occurred in the time of the governor, Nearkhos, in the field of governing the country, the influence of the Alexander's period was distinguishable culturally.The Lycian alphabet was quitted after this period by the unknown reasons.

After the death of Alexander in one of the Asian attacks, his commanders began to fight for the countries left behind, and the empire was divided into small pieces. After this event, owners of Lycia started to change frequently. Firstly, Lycia was ruled by the country, Ptolemaios, in 310, secondly by Lysimakhos in 301, and then by Seleukos in 296. Finally, Ptolemaios reigned in Lycia one century long. In this period, Lycia had begun to Hellenize. This observed particularly in the art and the culture. These cities adapted to Greek styles. After a while, Seleukians reoccupied and started to ruling the country in 197 B.C. but their sovereignty ended as a result of the Magnesia battle. After the Apamea treaty in 190 B.C., the eastern cities were controlled by the Rhodians, and the western ones by the Pergamon Kingdom. The reaction arose against Rhodians,helped to accelerate the establishment of the Lycian union, and this was achieved by Lysanias and Endemos in the early years of the second century(28).

Finally, the union was entirely established in the middle of the second century B.C.

The freedom of the union was ended by the Romans, and Lycia was left to the control of Rhodians. As a result of the Rhodians' pressure, the Lycians and the Carians were set free by a decision taken in the Roman senate. But Lycia was occupied like the other parts of Anatolia, by Mithradate I in 88 B.C. After Sulla defeated Mithradates I, also Lycia became free. In the same century, some disorders were seen in the eatern Lycia. Olympos and Phaselis constructed new ports. The east of Mediterranean-including Lycia-were plundered by the pirates under the command of Zenekites. The pirates and their commander Zenekites were defeated, and Olympos-which was one of the ports of pirates-, was punished by Sauricus I. Thus the danger was overcame.

After the murder of the Cesar in the first century B.C., a big fight was seen between the commanders; Antonius and Brutus.

In the first century A.D., Lycia and Pamphylia were seen as one of the Roman provinces. This Roman period was started by Augustus. Beside the administrative changes and organizations, Lycia became rich in this period.

First known earthquake in the Lycian region was in the period of Agrippa about the first century A.D. After this one, there recorded many others. During the periods

of Trajan and Hadrian, the big developments and reconstructions were started to appear all over the Lycian country. Unfortunately, many of the new constructions were damaged by an earthquake occurred in 141 A.D. To reduce the effects of this earthquake, great helps were made by the richmen of Rhodiapolis(29).

While Lycia was a province of the Roman empire, increase in the number of the cities indicated that the lands of Lycians widened. The social situation of Lycia was not too bad as it is understood from the establisment of too many cities (30). At this time, Lycia's population was estimated about 200000(31). Also the concession of printing coins were given again to the city states by Gordianus III(32).

The location of Lycia has been considered very important by the Christian world. The roads of Lycia were used by Saint Paul and Saint Pierre while they were travelling in Anatolia. In addition to these, one of the famous saints, Saint Nicola (Noel Baba), was borned in the Lycian city, Myra. By time passes he becomes the Myra bishop works as a metropolit, and joins to the council meetings.

In the fourth century A.D., the cities again separated. An increase in the number of pirates resulted to weaken the cities of Lycia.

In the Byzantine period, there were not seen any important events between the fifth and the seventh century. During the Arabian attacks which were done to capture Istanbul, the cities of Lycia were destroyed, or abondoned in the eight and the ninth centuries(33).

3.6. History of Arycanda:

There has not been found any archaeological evidence and written sources, relating to the first settlement. But, since the name of Arycanda is local, it may be considered that the settlement is very old. The antique writer, Anthaneos, tells about a monumental place called Embolos near Arycanda, and Pausanias gives information about Arycanda as a city at the border of Lycia-Kibine(34). The oldest finding is a coin from the fifth century. After this, there exist coins from the fourth century of the local prince Akuwami, and the prince of Lymira, Perikles(35). Another important finding is an inscription panel, which carries two Lycian letters on it; if the disappearance of the Lycian language is taken into consideration after the occupation of Alexander in fourth century(36).

There are not many historical materials about Arycanda in hand. The history of Arycanda is considered with the own history of Lycia, and shortly summarized as: The acception of the Pers domination in sixth century, the occupation of Alexander the Great in fourth century

without any resistance, and continuous changes after the death of Alexander the Great. When it was reached to the second century B.C., seen that Lycian Union was established,by Lysanios and Eudemos; and Arycanda started to print her own coin. But the Lycian Union was ended in 43 A.D., and Lycia became one of the Roman provinces.

The name of Arycanda had appeared more in the various sources after the second century A.D. The coins distributed under the name of III. Gordionus in the third century A.D. There became a great damage when an earthquake occured in 240 A.D. But the city reconstructed by the help of Rhodiopolisian richmen.

During the age of Byzantine, the name of the city changed to Akalanda in eighth century A.D. From the remains and Byzantine sources, it is understood that the settlement had continued until eleventh century. In the late Byzantine period, Arycanda was started to abandon, and to move towards the south where exist some middle age remains now(37).

3.7. Lycian Art and Culture

An effective and national civilization was created by Lycians. When the other nations occupied country, during peace or fight, their effects adopted to Lycian culture. But in the time of Hellens, Hellenistic culture was held beyond the national culture.

3.7.1. Art:

Lycian art is limited by only tomb monuments, and reliefs(Fig.26). The clues of Lycians are determined by the plastic arts appeared on the tombs and reliefs. The remains which are left from Lycian architecture may be mentioned as: The tombs are carved into rocks, which reflects the original wooden houses(Fig.27), Lycian sarcophagi, multi floor buildings, and pieces which carries influence of the Greek, Persian and Egyptian arts(38).

Also the tomb inscriptions are important remains reached to our age.The inscriptions were started by the names of death people, and ended by a curse. Tombs are protected by "Mindis" in later times by the city (39).

3.7.2. Social Life:

Before Roman Period, pancreatium and wrestling which were the popular sports of Greeks, were also popular in Lycia. Name of city founder were commonly given to races. After being a Roman province, the sports of Romans were imported and became popular among Lycians. Traditional Roman, gladiator fights, wild animal fights, hunts were started to organize for the citizens of Lycia by richmen. Also,the original Lycian names were changed by Roman ones(40).

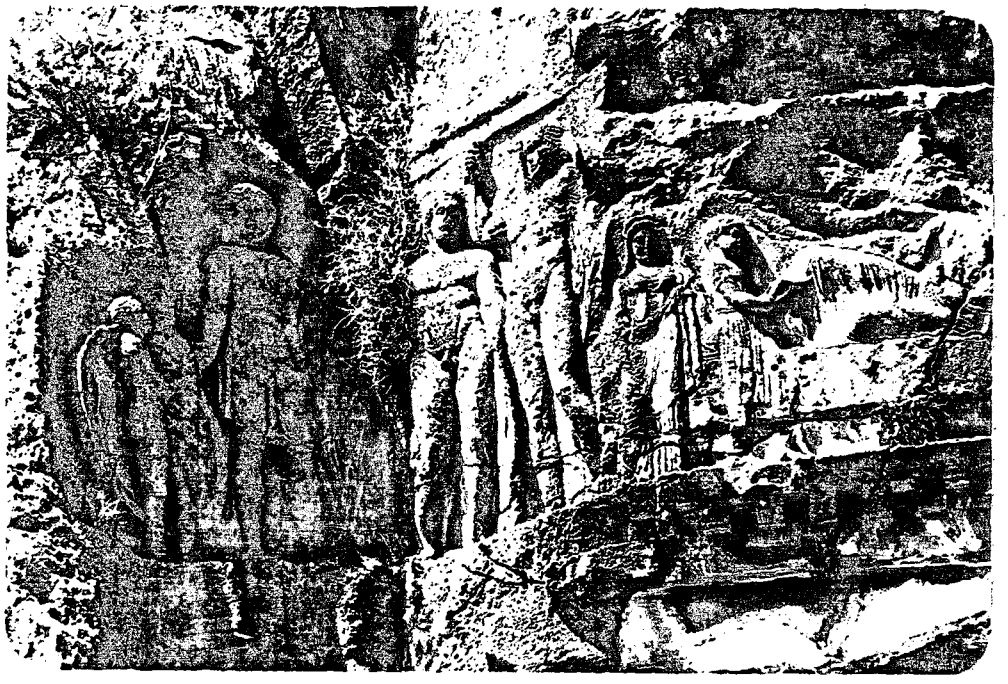


Fig.26. Relief on top of the rock tomb, Myra

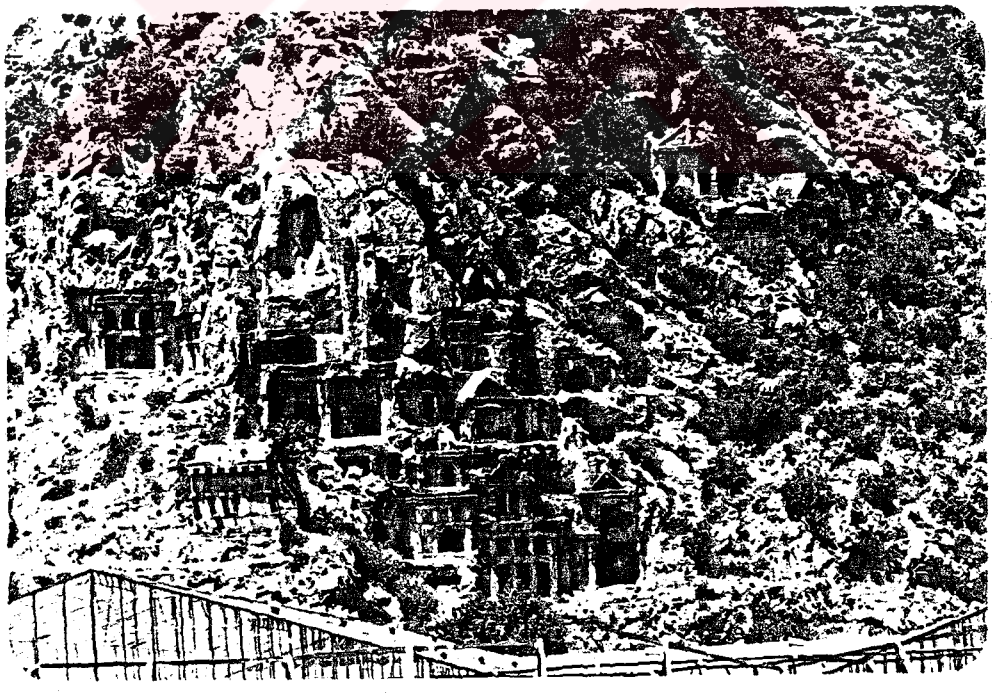


Fig.27. House tombs, carved on the face of rocks

3.8. City Planing of Arycanda :

Arycanda is located onto hillside and can be considered as a "terrace city" (Fig.28).The city planning of the Arycanda is very similar to Priene's . The only difference between two: the stadion is at the top in Arycanda, and at the bottom in Priene. As it is usually observed in the Greek cities, the main streets move from the east to the west, and the secondary streets with stairs intercept these in the north-south direction. Another property of the city, the tomb buildings and the civil buildings were arranged all together as it has seen in all Lycian cities.The tomb buildings were constructed with a great care more than the civil buildings, and were placed towards the panorama regarding to the religious beliefs. Also some spectacular terraces were added. Most of the buildings belong to the age of Romans except the rock tombs, the water channels, and the uncovered terrace houses during 1986 and 1987 excavations. The building construction and the city planning in Arycanda, were influenced by the Anatolian traditions, and also by the outer adopted cultural effects.

All the Lycian cities were located in a form of having the ability; protecting the preceding cities, and containing watching towers which were separated from each other by certain distances. Arycanda was settled at the bottom of Şahinkaya (Fig.29), and had a natural protection system; like no passage allowed to pass

P park
I terrace houses
II saraphane
III naltepesi a-blacksmith b-bath
IV small bath
V temple-basilica-church
VI bath-gmnasion complex
VII tomb buildings a-temple tomb
VIII stadion
IX theater
X odeon
XI stoa
XII state agora
XIII bouleuterion
XIV stoa
XV upper bath
XVI nymphaion

site plan 1/1000

is based on P.Knoblauch's plan

0 5 10 20 30 40 50 100

height
slope
walls
traces of walls
carved rocks
pieces of rocks
vehicle road
pedestrian road
footpaths
steps

Fig.28. Map of Arycanda

towards the north. By constructing some fortification walls at the south, at the east, and at the west, there was obtained a safety settlement place. The defence system completed by adding the observation towers to the east, to the west, and to one of the highest points of the city.

3.9. Buildings:

Arycanda ruins begin from the spring of Aykırıçay, and become dense at the bottom of Şahinkaya. Most of the official buildings of the city are located on the terraces (41).

3.9.1. The Rock Tombs:

In Arycanda, the great number of the remains from the Lycian age are spreaded around the spring of Aykırıçay. These can be considered a few when compared to the other remains. Arycanda has less rock tombs from the other Lycian cities. The rock tombs of Arycanda form the western necropol, and extends until facing with the western walls. There is found a Greek inscription on only one of the tombs. The channels which supply water for the city, also stand near to the spring of Aykırıçay on top of the rocks. Some of these channels are carved into the rocks, and some of them are supported by the walls. Also the rock-carved channels with smaller diameters, and quarter circle form, exist at the spring of water. Now, all stand in a good manner.

Fig.29. General view of Arycanda

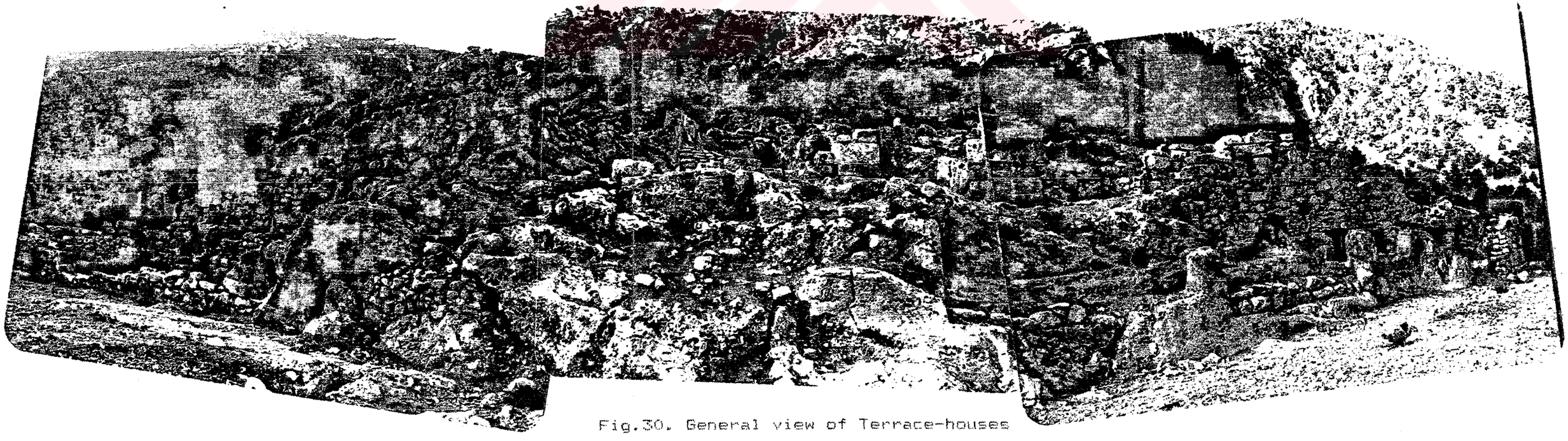


Fig.30. General view of Terrace-houses

3.9.2. The Terrace Houses:

After coming down from the spring, and turning to the stabilized route beside Orman Müdürlüğü, first city ruins begin to appear after taking 1 km. These are the buildings of the Lycian age, and are placed 50-60 m. above from the ground. Though the excavations have been continued since 1986, only a small amount of the Lycian buildings has been uncovered (Fig.30). Since the evaluation of the excavation has not been done, there has not existed any detail information about these buildings.

Three big and one small rooms are uncovered in the completed part of the terrace houses excavation. There exists a large terrace in front of them. At the west, a podium is located, and believed as a sacred place. At the east, it is seen the original stone pattern of the Lycian period. The streets -which are connecting the houses- are carved into the rocks in a form of large stair steps (Fig.31). The coverings coming from the Roman period are partly seen around. The streets with steps extend in the north-south direction. The channels in basements, and in between the houses, indicate the big development in the Lycian engineering.

It is known that Lycian houses have two floors. First floor is used for the purpose of production, and second one for the purpose of living. Though there are not seen any evidences from second floors, standing parts

as small channels and base remains (Fig.32), give the impression that first floors are used for olive oil and wine production. In the proceeding periods -late Byzantine time-, these places are used for more functional purposes like; a barn, a workshop, and an house since the people become poorer. The skeleton found in one of the small rooms indicate that the people as poor as can not effort to build any tombs.

The buildings are carved into the rocks, indicate a proper workmanship. The front walls of those are constructed from wood or stone. There also appears door and window remains. In the buildings, the big blocks are used for construction, and in the later periods the houses are divided by the masonry walls. In the late Roman age, the buildings become some like a "gecekondu".

The second part of the terrace houses II, -excavated in 1987- , is a Roman villa with an atrium plan. The atrium is paved with limestone plaques. The rooms surround the atrium, has rich mosaic paremens.

3.9.3. Saraphane:

There is no information obtained about the building which is located in the south, below the route level, after passing the terrace houses a couple hundred meters. There can be reached to the remains found in the eastern room by crossing the room in the middle, with two steps. The traces found on the flour indicate that this building

Fig.31 Streets with Steps Between Houses

Fig.32. Interior View of Houses

may be used as a production house (Fig.33). Now, this not well-defined house is called as "Şaraphane", and the building is just next to this is known as Naltepesi.

3.9.4. Naltepesi-Heroon:

This building had been planned as a heroon during the first construction (Fig.34). In the later periods, it was turned to a bath (Fig.35). The location of Naltepesi is effective on the defence.

At the east facade of the building, elaborate workmanship could be followed. The spaces at the north side are well protected, and they have collected blocks (Fig.36). Mentioned place has a visual appearance like a frigidarium.It was paved with the proper plates; the niches at the long north and south walls, the piscina at the west end. The system of hyphaost used at the vaultedspace in the southwest of the building, indicates that the heroon was changed to a bath at the second usage. As a result of finding of the torsoses, it is supposed that the niches were ornamented with the sculptures.

By a passage in the middle of the frigidarium, it is possible to pass to the tepidarium which is located in the south. (Fig.37).

The calidarium consists of two square rooms in different sizes. The base of this space is covered with the square plaques of baked earth, and the hypocaust

Fig.33 Interior View of Saraphane

Fig.34 General View of Naltepe

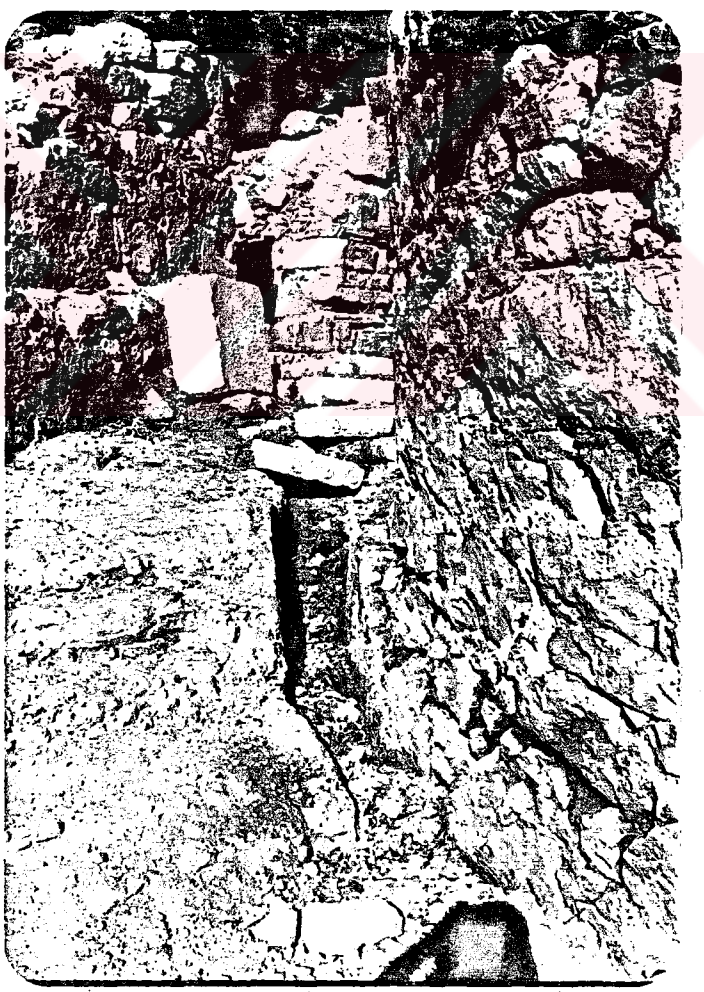


Fig.35 Channels of Bath, Naltepe

Fig.36 Front View of Naltepe

Fig.37 Interior View of Bath, Naltepe

bricks are placed over them. The real base of the calidarium is protected partly only at the bottoms of the walls, or under the vaults.

The building collapsed by an earthquake, is functioned as a blacksmith workshop in the later periods. During this time, the northwest and the west sections are used. It is entered into the blacksmith workshop by the sound door, or by the false one at the west. From the point of view of the wall workmanship, the workshop looks like a shanty, but it is rich with full of remains. The investigations indicate that the building is left after an accident, or a fire. The time of usage of the blacksmith workshop is dated into the sixth century A.D.

The wide route in front of Naltepesi is separated into two. First route extends towards the east, and the first stop is the small bath.

3.9.5. The Small Bath:

The bath is constructed from the collected stones, has three sections (Fig.38). It may enter into the bath from the west part of the frigidarium. The floor is covered by the well preserved limestone plaques. At the north wall, there are three "pilaster"s with the semicircular sections. The late Roman and the early Byzantian coins are all found here with some small findings from the fourth century A.D.

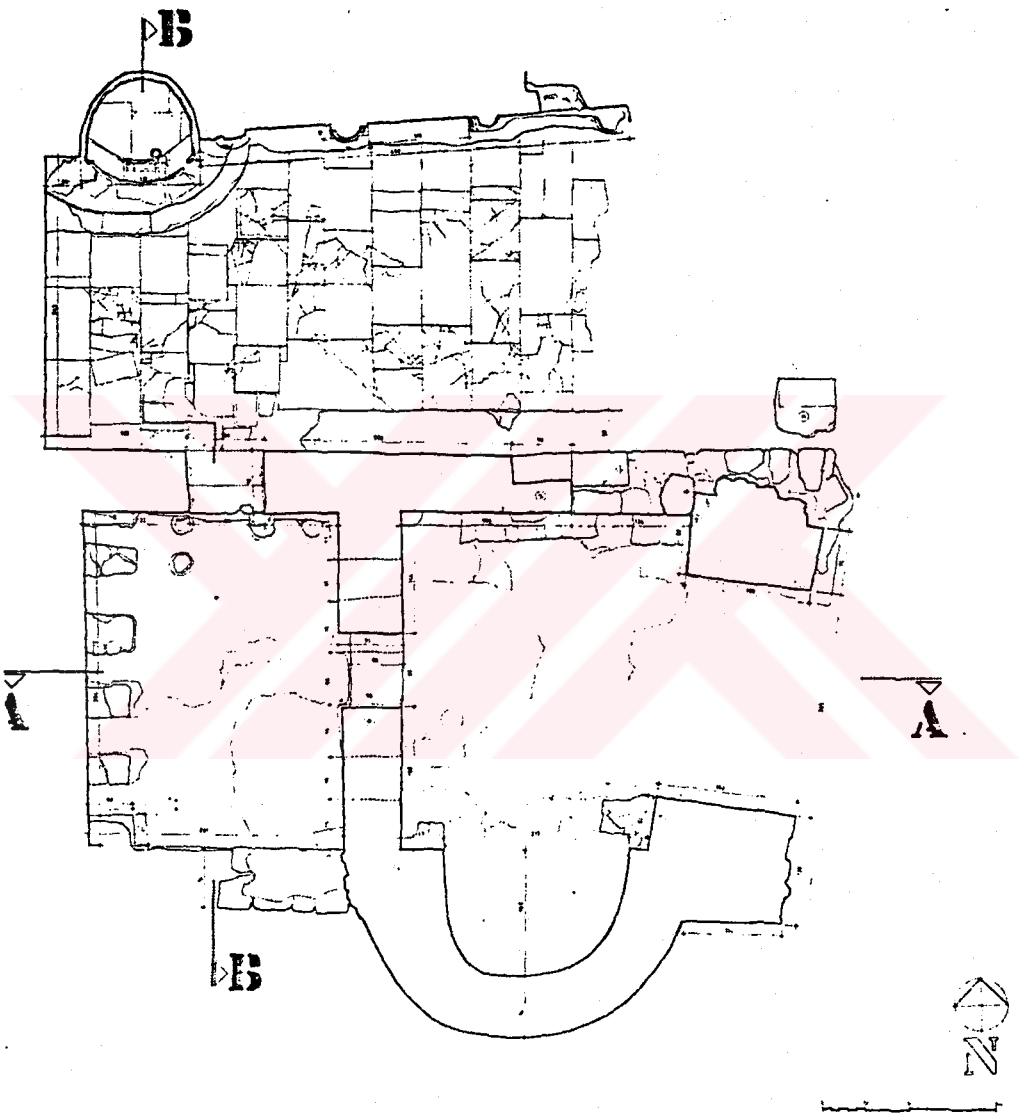


Fig.38 Plan of Small Bath (Cevdet Bayburtluoğlu, VI. Kazı Sonuçları)

It can be entered to the tepidarium by a door at the south wall of the frigidarium (Fig.39). The floor of this part is approximately at the same level with the frigidarium's base, and there exist in-situ hypocaust bricks. The "tibulies" that buried into the wall,indicate that heating is also provided by the walls. The south wall looks like an absidal with a shallow niche, which is supposed to have big view windows. On the wall which separates the two parts, there are seen many inscription pannels brought from any other places.

At the east of the tepidarium, the calidarium takes place where the east wall is demolished. In the places which are near to the adjacent parts of the tepidarium wall, in-situ hypocaust bricks are found, and a dense layer of ashes is cleaned out. Beside these, the base is not proper here, and there exists a slope towards the bank of flood. So the evidences indicate that this part is used as "furnio" by the usage of the level differences. However, damages caused by the flood water do not allow to get definite informations on this subject.

As it was mentioned, the route has already separated into two. If it is not turned to the one which passes from the small bath, there may be arrived to the temple-basilica-church triple at the left.

3.9.6. The Temple-Basilica-Church:

The temple-basilica-church are placed on a rectangular space (Fig.40) at the south side of the route which is lying at the east-west direction (Fig.41). There exists a big apsis at the east of the building. At the south-west corner, two different techniques and levels of the floor mosaics indicate that the building had been used for many periods. By the evaluation of the remains, three main periods are determined:

3.9.6.1. The Late Period Church:

The church contains the cella of the temple, and the central aisle of the first basilica. The north and south side walls, stay inner more from the previous period walls, and have an original structure with the walls of the temple, the previous church, and the ornamentation elements.

The late period church which takes place as the central aisle of the basilica, has also three aisles. The niche of the central aisle, is wider than the others. There are not seen any pavement remains. The simple, or the ornamented walls which belong to the early walls, are randomly placed in order to build the side walls, and are covered with a thick glazed plaster. The traces of the colorful rectangular ornamentation, are easily observed on the serrated facades of the preserved plaster. The floor mosaics are seen on the late period church, belong

Fig.39. General view of small bath

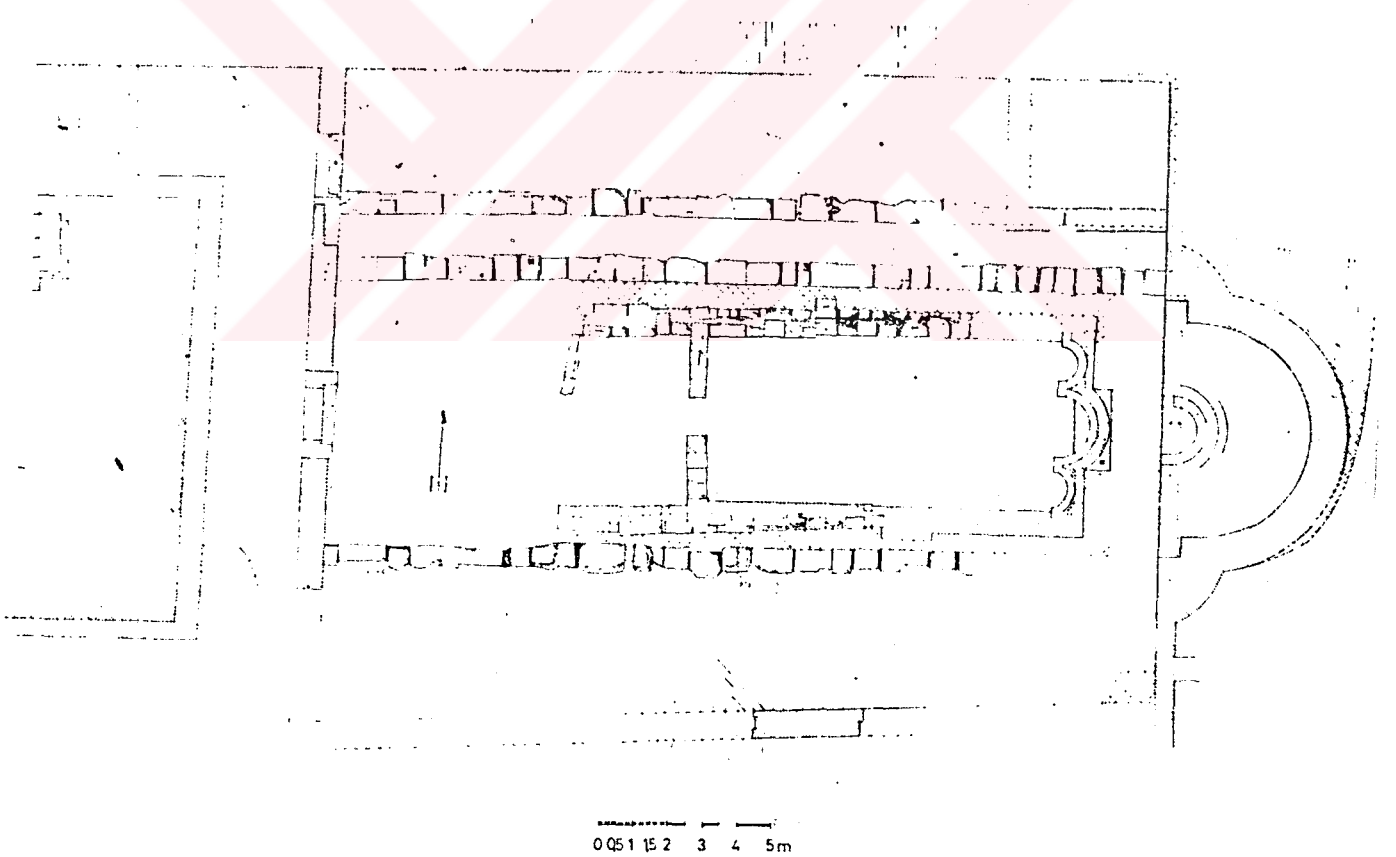


Fig.40. Plan of temple-basilica-church triple

to the early period church. There is no information about the time of this late period church, and the time of abandoning of the church. At the Byzantian period, after most of the people abandoned the city, this small and poor quality church had been used probably by the ones who were as poor as could not leave the city. By time passes, it was possibly changed to a residence. The narthex part which had been added in the second period, was cancelled in this period, and the entrance part of the central aisle, was used as a narthex.

3.9.6.2. The Early Period Church or Basilica:

The base carrying the walls with the antae of the temple, and with the column row, form the framework of the construction. When the early period church is considered with the mosaic pavement which surrounds the construction, it covers a wider area than the first period temple does.

The architectural remains belonging to this period: the apsis of the central aisle, the east wall -which is placed above this abscissa-, the frames of the door -which provides an entrance into the church at the west-. The two layers of the mosaic pavement which are 0.15 m. deeper than the other found on the base of the church, cause a suspicion about the presence of another layer. Both the construction techniques, and the used colors and figures, cause to the first period mosaics to be dated in

the fifth century A.D. -late Roman period-. The second floor mosaics seen at the east, at the west, and at the south of the church, lie upto the front of the stair which connects the construction to the route at the north.

3.9.6.3. The Temple:

Because of the later additions, the stylobat level is changed completely, and most of the blocks are disappeared. As the columns and the block row which carry the walls with the antae, are always usable elements, they are preserved in the later periods. Antae capital which is one of the architectural pieces, found around scattered, gives information about the order of the construction as a corinthian style.

One terrace down from the temple-basilica-church, there are seen spaces used as a store and a residence with a poor quality workmanship. The southern terrace wall of the temple-basilica-church is limited by a stoa which has three steps.

If it is kept moving on the same route, it is arrived to the bath-gymnasion complex.

3.9.7. The Great Bath-Gymnasion Complex:

The bath has the greatest close space in Arycanda (Fig.42). It forms a complex with the neighboring gymnasion and plaestra (Fig.43).

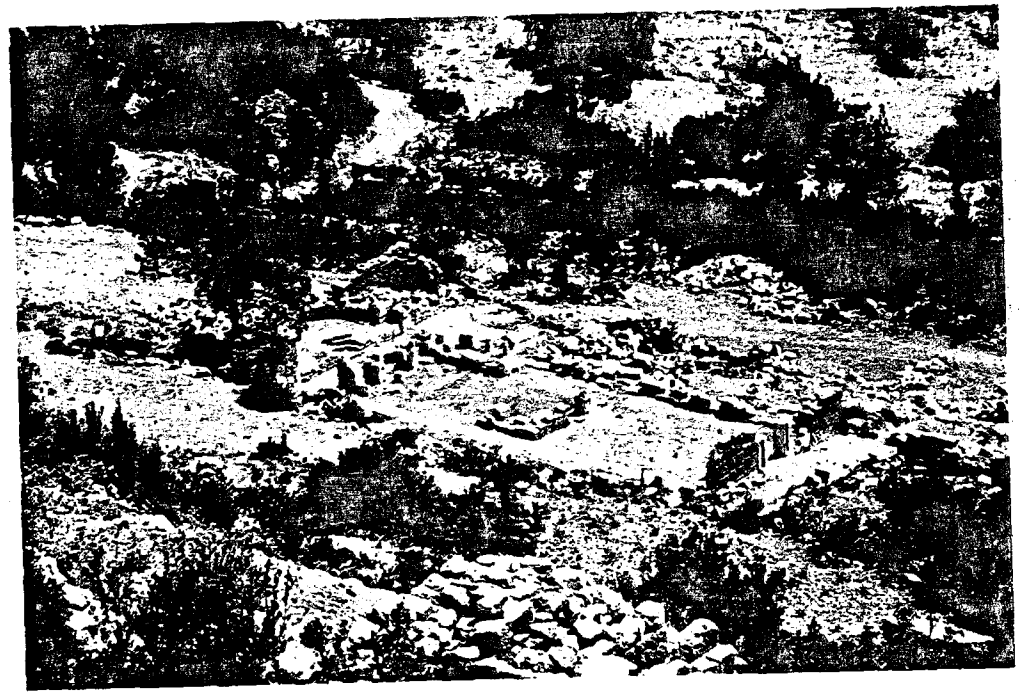


Fig.41. Top view of temple-basilica-church triple

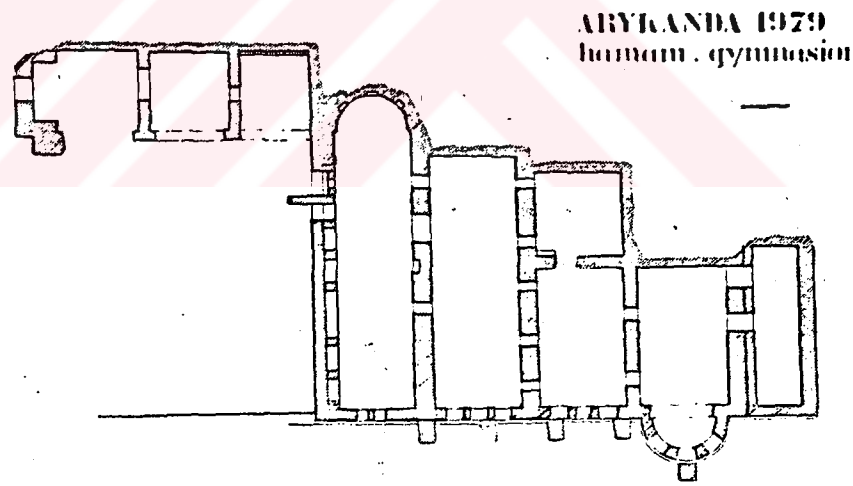


Fig.42. Plan of bath-gymnasion complex

3.9.7.1. The Bath:

The space at the near east of the Gymnasion is used as a frigidarium. There exists a piscina at the northern apsidal part. The water requirement of the piscina is supplied from the niches on the walls. These niches are also used as stands for the statues.

The base of the frigidarium is covered with the rectangular limestone plaques. On the walls of the frigidarium, covering plaques are used like the other places. Especially at the interiors of the niches, the marble imitation plasters even exist today.

By the two doors at the east wall, it is entered into the tepidarium, or a place used for a similar aim. All along this wall, there are three niches probably placed as statue stands.

From the west wall of the frigidarium, it is possible to pass through gymnasion by a door which is located at the side of the apsidal pool.

It may entered into the calidarium -which is located in the east of the frigidarium- by a door with three steps. At the north wall, there is a seat one meter high from the base. Since the room at the south of this place has in-situ hypocaust bricks, it is supposed that the room is used as a "pre furnior".

The room at the east end of the bath is the tepidarium. There is seen no pavement in this part, and the hypocaust bricks exist in-situ. There are two big niches at the east wall of the room, and the south wall of the place is in the form of an apsidal niche. The windows on these walls are used for the purpose of watching panorama (Fig.44).

The last part of the bath is connected to the calidarium and the tepidarium by the two different doors, and has a passage to the tepidarium about two meter high. This narrow and long part is perpendicular to the others. The vault system is also spanned perpendicularly to the other vaults. The two holes at the facade of the eastern wall provide a passage for the water ducts towards the other parts. This room which does not have any pavement or similar elements might be used as one of the "halvet"s that the tepidarium and the calidarium are used both together.

3.9.7.2. The Gymnasion:

The gymnasion is placed at the north of the frigidarium by neighboring to the west wall. At the connection of these places, there is a passage to a vaulted space with a circular staircase. The floor mosaics starting in front of this staircase and lying parallely to the south wall of the gymnasion, are well preserved. These mosaics indicate the late Roman age by

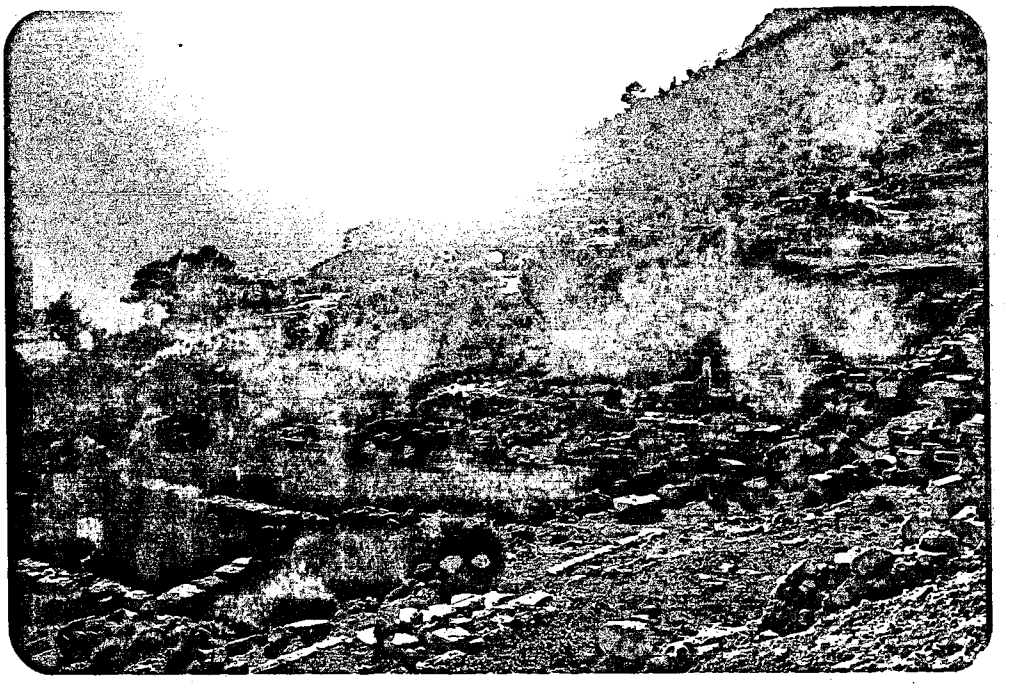


Fig.43 Top View of Bath-Gymnasion Complex

Fig.44 Front View of Bath-Gymnasion Complex

the great "tesserae", and by the way of ornamentations. At the southern wall of the gymnasion, there are seen the finds of a wooden porch which covers the mosaics.

The semicircular projecting part of the room of the gymnasion at the bottom of the north wall on the frigidarium side, might have been constructed as a fireplace or an oven at the latest periods while the building was using as a residence. The seat at the north east corner of the gymnasion might be used as a greasing part.

It may be entered into the second room by passing an arcaded door. There is no information found about the usage of this room.

There is a semicircular planned projecting part at the south wall of the third room. A door in the deep niche at the west, is used as a passage towards the bank of flood.

Though there are too many stands of statues found both in the bath, and in the gymnasion, there are not seen any statue remains here. The coins found in the bath, indicate that the building had used until the end of the fifth century A.D. Except the spanning elements, most of the architectural features of the bath and gymnasion complex, are still standing today.

3.9.7.3. The Palaestra:

The palaestra -which is at the south wall of the gymnasion- is reached from the west by a door which provides an entrance from the side of the flood bed. The wall is being at the south part of the palaestra, is supported by three shores and mostly destroyed. The wall at the west could only reach upto the center of the palaestra. The baked earth water ducts for running out the collected water at this terrace, are lying all through the frigidarium wall, and ending at the south terrace wall.

After the bath-gymnasion complex the route reaches to the eastern necropol by moving towards to east.

3.9.8. The Eastern Necropol:

The necropol covers an area much bigger than the other official and private buildings existing in Arycanda (Fig.45). When entered into the necropol area, the first faced building is a temple planned tomb with a podium (Fig.46). Most of the antique writers had supposed this tomb as a temple for many years. The writers were indeed right; since the monumental aspects, the sarcophagus ornamented reliefs, the corinthian configuration, and the in antis plan, are all observed around. This temple-tomb -which is constructed from cut stone-, is small and pretty with its own pronaos and cella. Beside these, the column pieces and the antae are still standing. Also, in

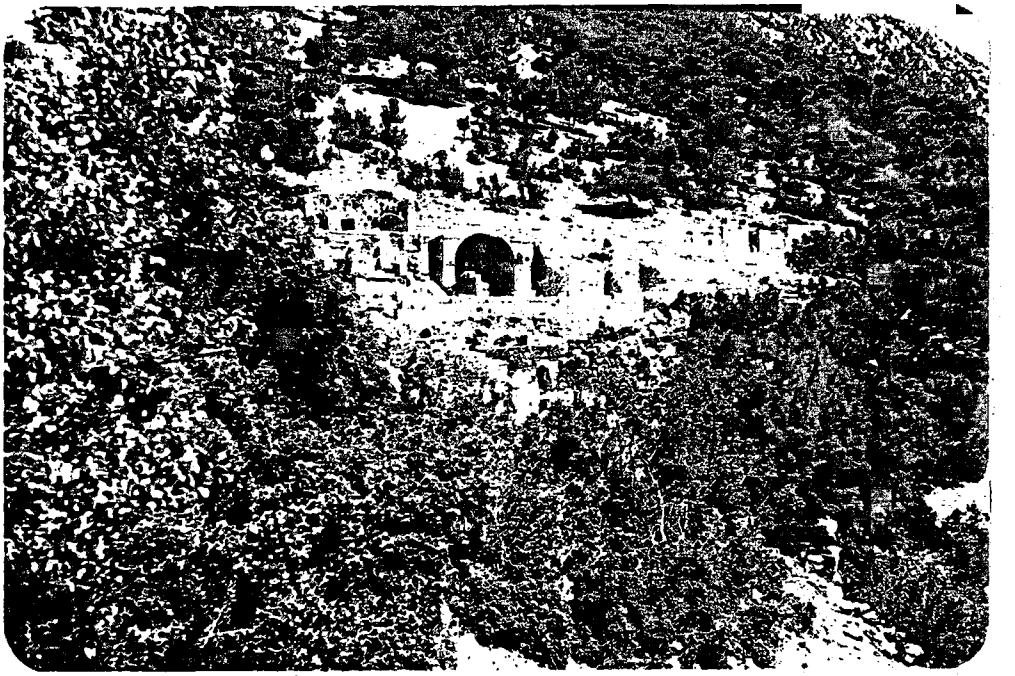


Fig.45. General view of eastern acropolis

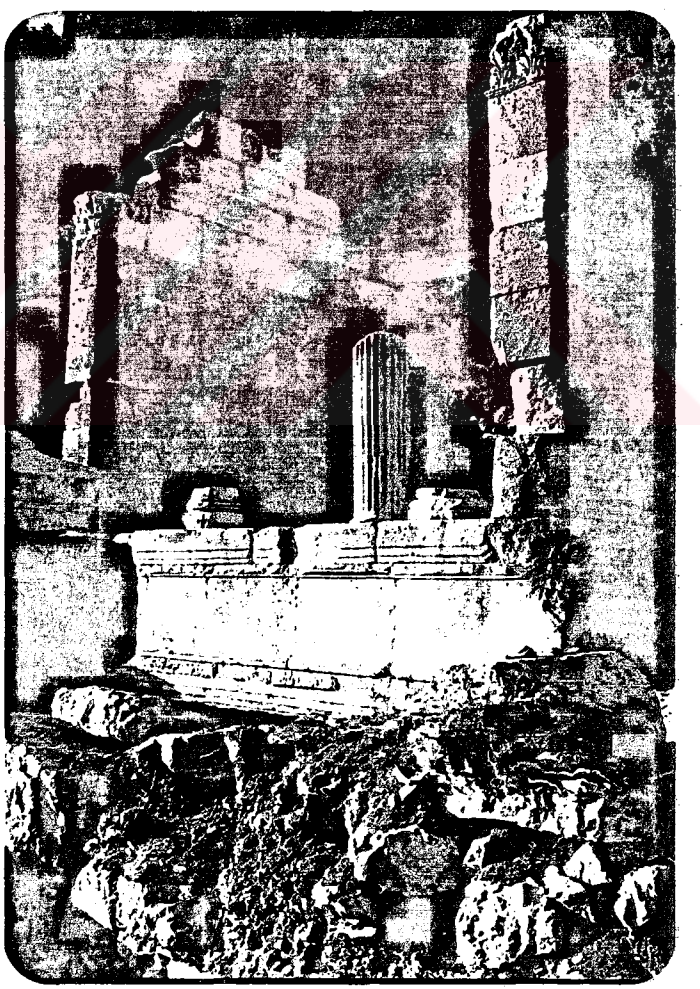


Fig.46. Temple tomb No.1

front of the temple-tomb, there are no evidences indicate any steps or entrance. It is entered into the cella by passing an ornamented lintel door from the pronaos. The other tomb buildings are spreaded out of the temple-tomb building. In addition to the tombs covered with vaults (Fig.47), there is met to sarcapagi in side (Fig.48),in front (Fig.49), or beside of the tomb rooms separately. The tomb buildings are located such an order forming a terrace to each other (Fig.50). Only a small portion of the tomb buildings, are uncovered beside the eastern street, and at the various terraces (Figs.51,52,53,54).

There are seen stone pavements partly on the street which is passing in front of the eastern necropol. The great bath-gymnasion complex is located at the south of this street (Fig.55).

If it is kept going on the street passing beside the temple without turning to the eastern necropol, can be reached -in an order- to the agora, the stoa, the odeon, the theater, and the stadion (Fig.56). There are sometimes seen original steps on this street (Fig.57), and can be arrived to the top terrace where the stadion located on.

3.3.9. The Stadion :

The stadion has a half length of the usuals. The racetrack begins to shape in a form of trapeze after moving forwards. Also the stadion is connected by a stair

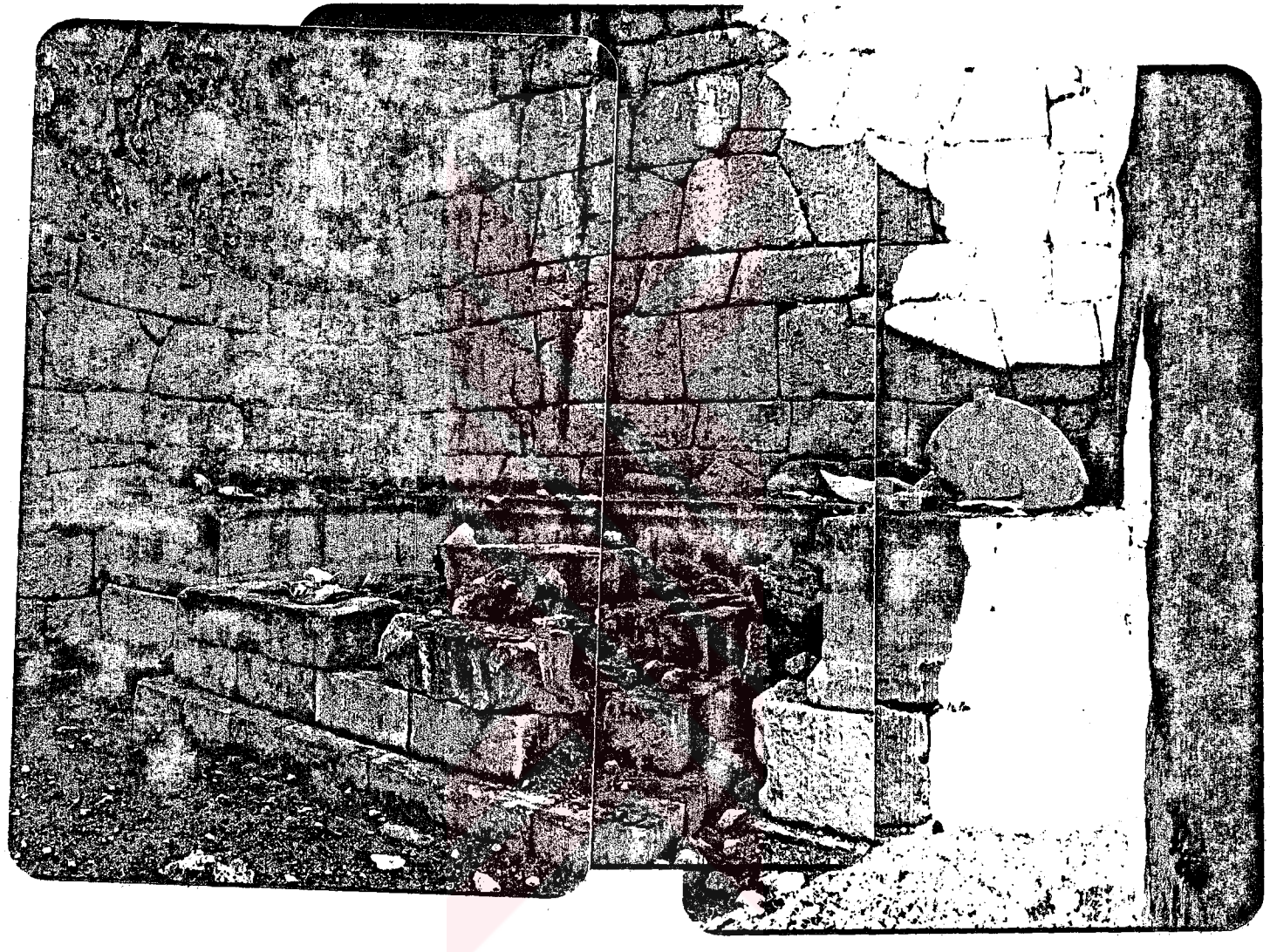


Fig.47. Interior view of a tomb building

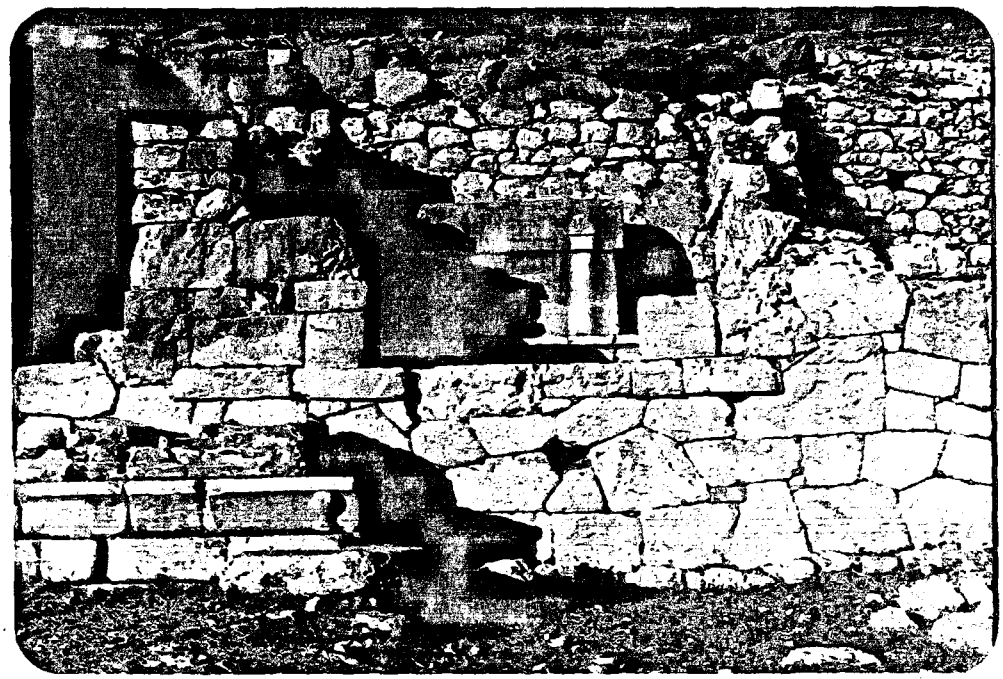


Fig.48 Front View of a Tomb Building with a Sarcophagus

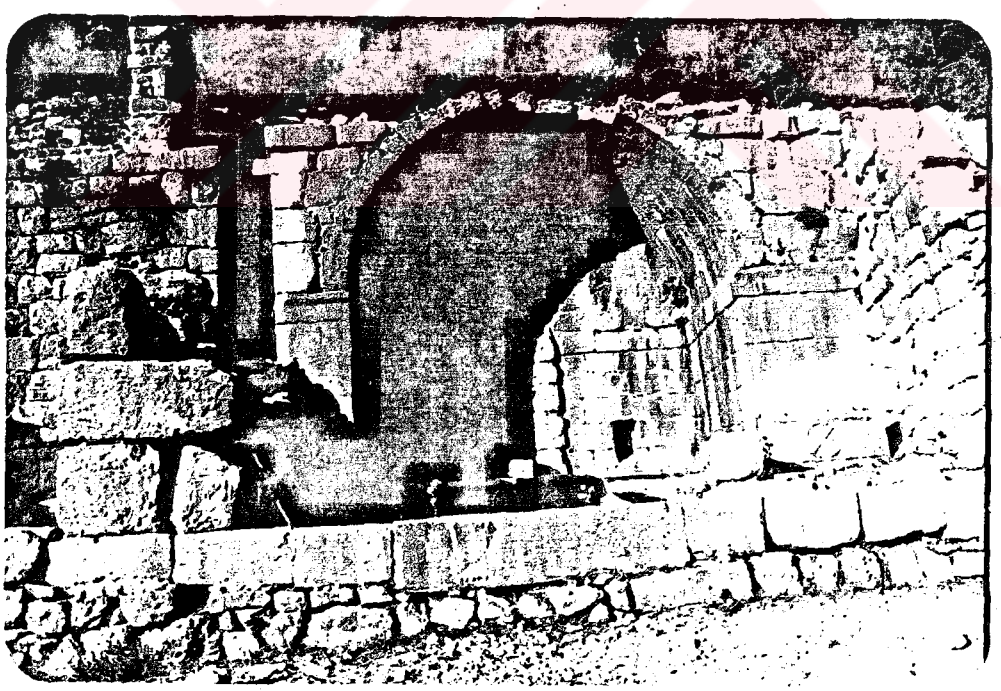


Fig.49. Front view of a tomb building with sound top covering

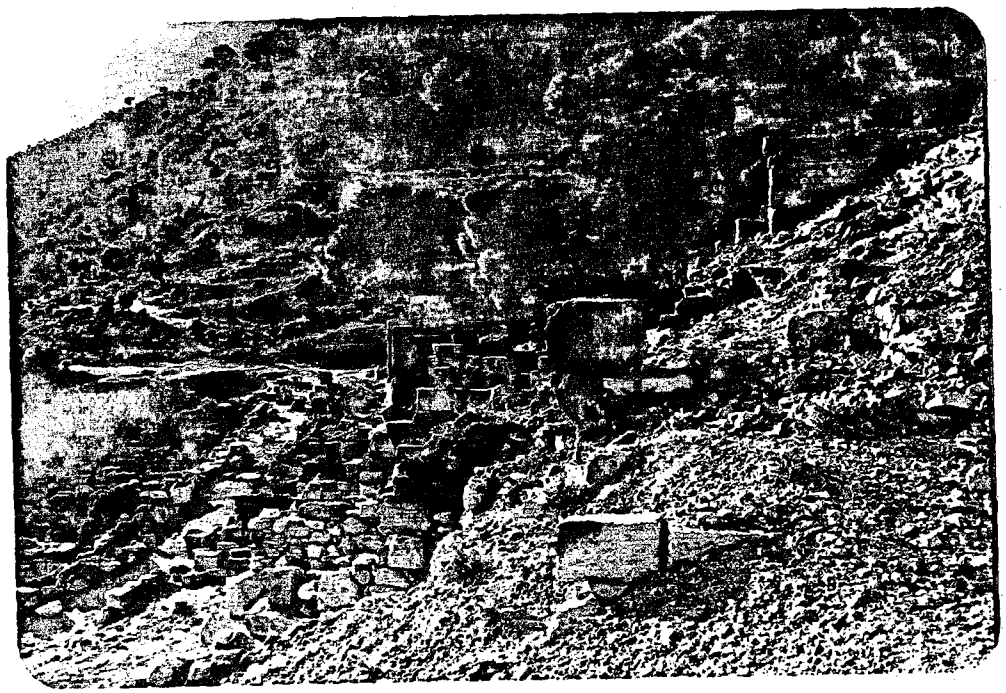


Fig.50. Terraces of the tomb buildings

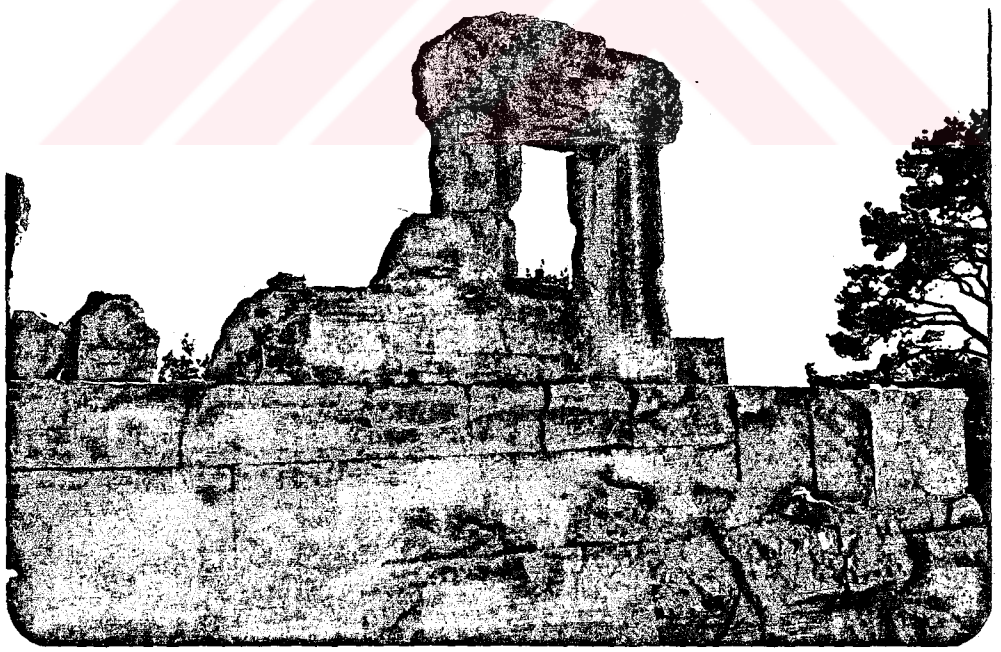


Fig.51. Door of a tomb building

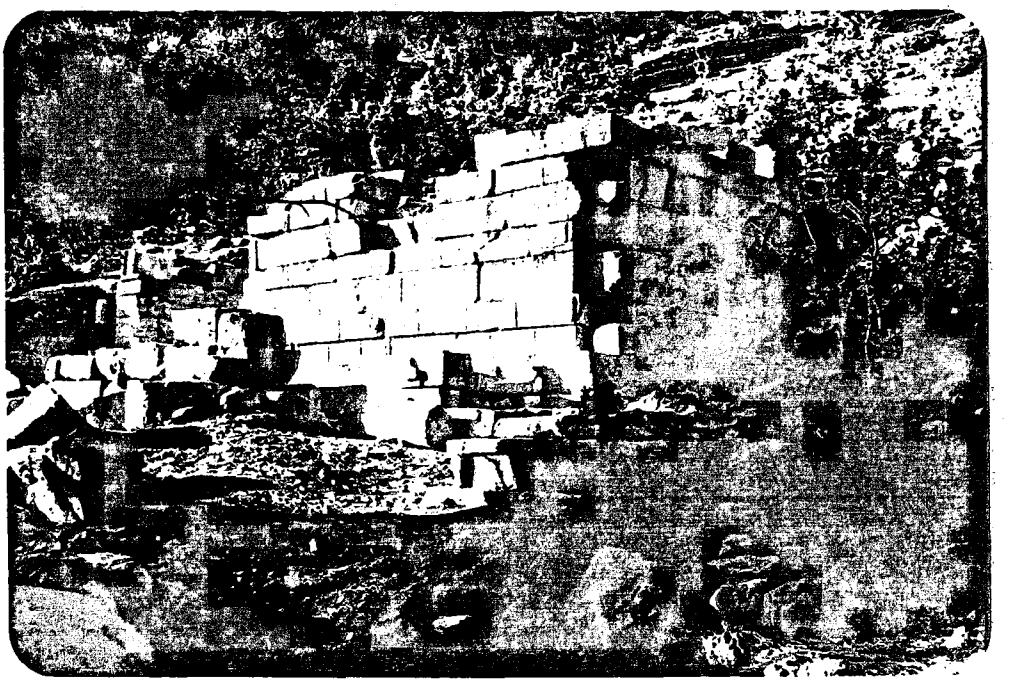


Fig.52. Tomb buildings

Fig.53. Tomb buildings

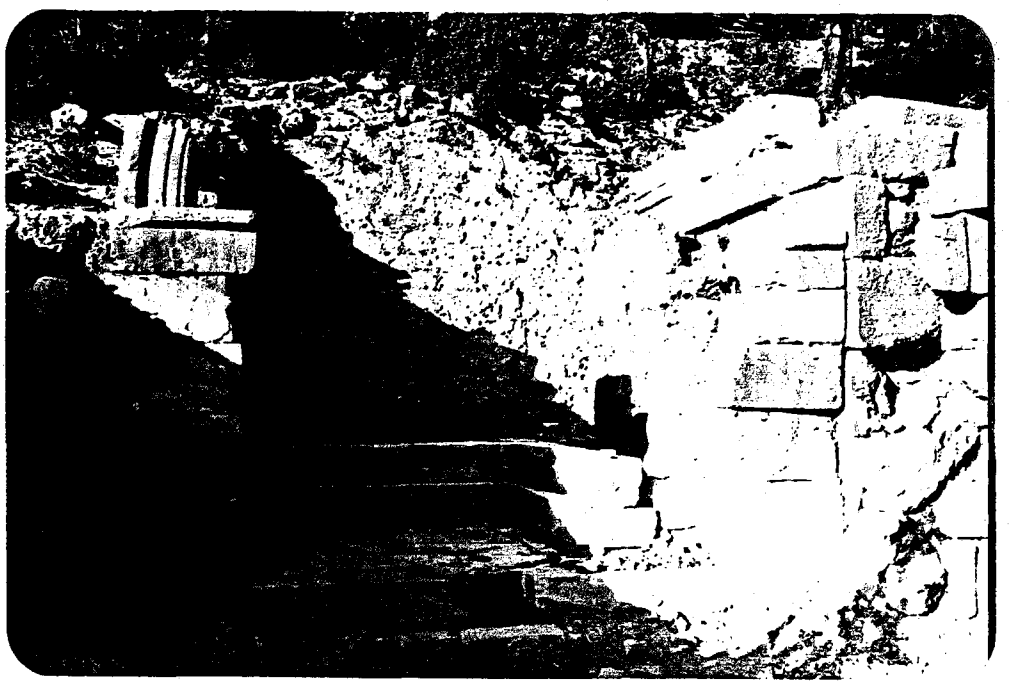


Fig.54. Front View of a Tomb Building

Fig.55. General View of Bath-Gymnasion Complex and Eastern Necropolis

Fig.56. General View of Agora, Stoa and Theater Terraces

Fig.57. Streets with Steps to the Theater

in the middle, to the lower terraces. The sitting benches one-sided located, and 3-4 rows are found at the north part of it (Fig.58). The wide of the stadion is 16 m., and it is not easy to determine the length exactly since the west part of it covered by the fallen stones and the soil pieces.

3.9.10. The Theater:

The small and well-protected theater is located onto a very high place from the ground at the bottom of the southern terrace wall (Fig.59). The cavea is carved into the natural slope, and the theater has 7 cuneiforms and 20 sitting benches. Beside these, the retaining walls have ashlar and polygonal masonry, and the analemma walls are smooth-faced ashlar. It is supposed that, the architectural ornaments on the skene, were completed in the second century A.D. This is understood from the Greek planned theater which has the shape of bigger semicircle. The Greek inscriptions can be easily read from the cornices of the two top sitting rows. The long and rectangular plan of the skene building is very clear, and the doors in the front and back walls, are still standing. The entrance is provided from the eastern and western paradoi.

The stage building has 5 rooms . The proskenion narrows both from the east, and the west ends, and forms like a parodoin shape since not all the remains cleaned

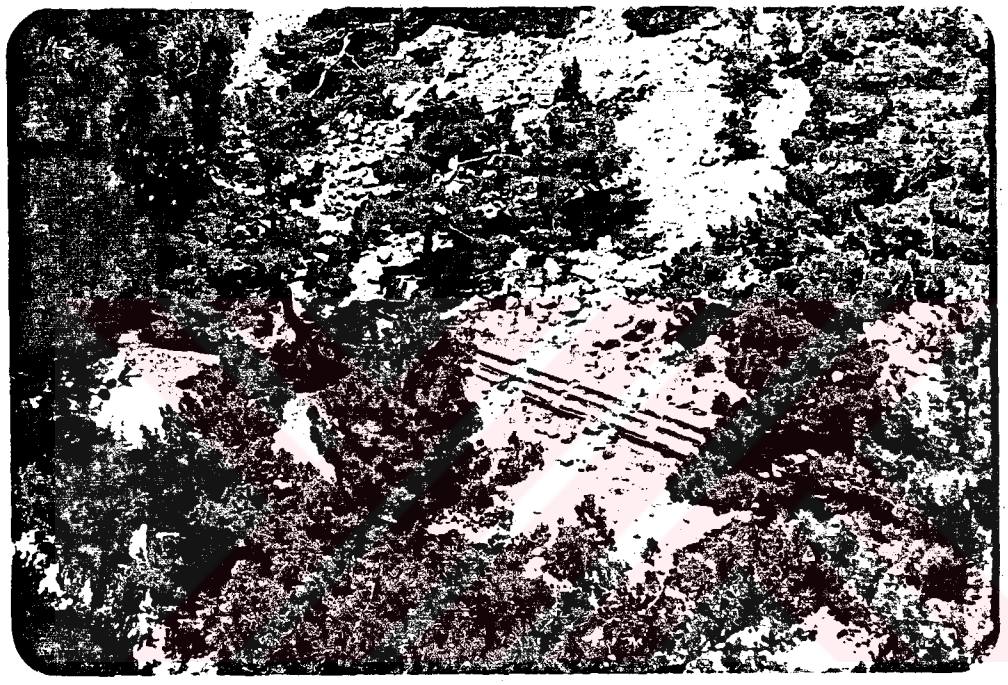


Fig.58. Top View of Stadion

Fig.59. General View of Agora, Stoa, Odeon, and Theater

up.

3.9.11. The Odeon :

The odeon is located one terrace below the theater, and is connected by a street with steps. There exists a portico with 75 m. length, 8 m. wide, and can be entered from the south by three doors (Fig.60). The orchestral part is covered by the square plaques. It is supposed that the sitting benches and the walls are covered by marble, and a frieze with its cassettes exist 1 m. above the doors. The masks and the god figures are placed on this frieze. There is a possibility of entering into the odeon from behind by the doors which are opposite to the corners formed by the northern and the eastern, and western walls. The eastern wall is connected to the stairs by a slope route which comes from front of the terrace of the theater, and also by a door opens out the east of the doors around the portico. Also the west wall is connected to the stairs bordering one side of the agora.

3.9.12. The Stoa :

The stoa, in front of the odeon, surrounds the agora in form of a sharp edge U (Fig.59). It is also connected to the western street with stairs, by a passage comes from the middle (Fig.61). Since the northern rooms of the stoa, next to the odeon, are not cleaned, no information is found.

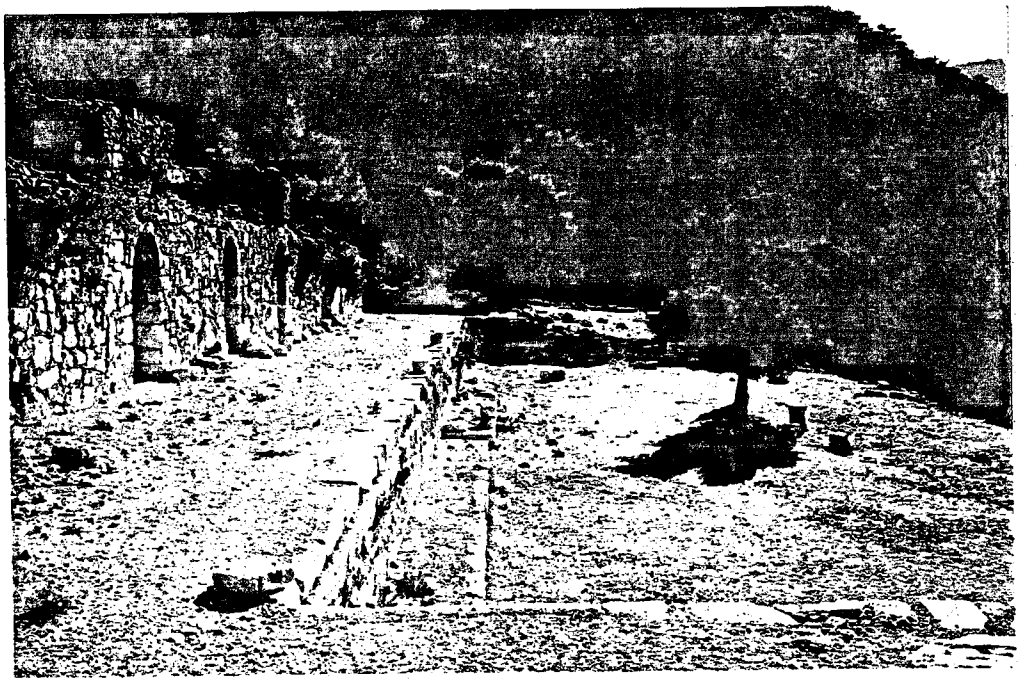


Fig.60. General View of Agora, Stoa and Front Facade of Odeon

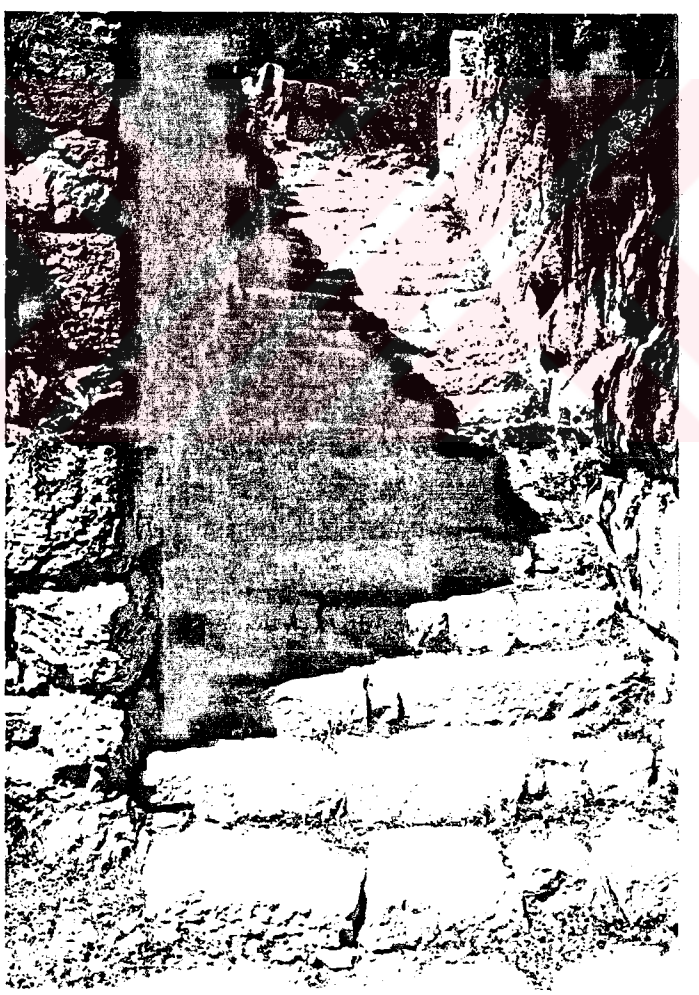


Fig.61. Steps Beside Agora

3.9.13. The Agora :

The agora is surrounded by the stoa from the north, the east, and the west, and located very low onto a wide and flat ground (Fig.59). There exists a terrace wall at the southern part. Since it has seen a small number of stores at the eastern part, has supposed that this was a state agora instead of a commercial (Fig.60) agora. In the middle, there has grown a tree, and some wall remains around, give the imagination of a temple. But, the existing of a temple has not proven yet.

The remaining official buildings of Arycanda, are at the same level with the theater and the stadion, and above the terrace houses level.They are located at the western part of the city.

3.9.14. The Bouleuterion:

The bouleuterion is situated at the western part of the stadion level where the official and private buildings become dense. The bouleuterion is carved into the rocks (Fig.62) and consists of an entrance hall and a main body (Fig.63). The base of the entrance hall is covered with pebble mosaics.

The two stairs,- which were shaved into the rock- , provide an entrance to the bouleuterion from the south. At the main part, the fifteen column bases are found in-situ, and some of them are moved aside by the land slides. In this part, there are eight circular sitting

Fig.62. Tiers of Seats of Bouleuterion

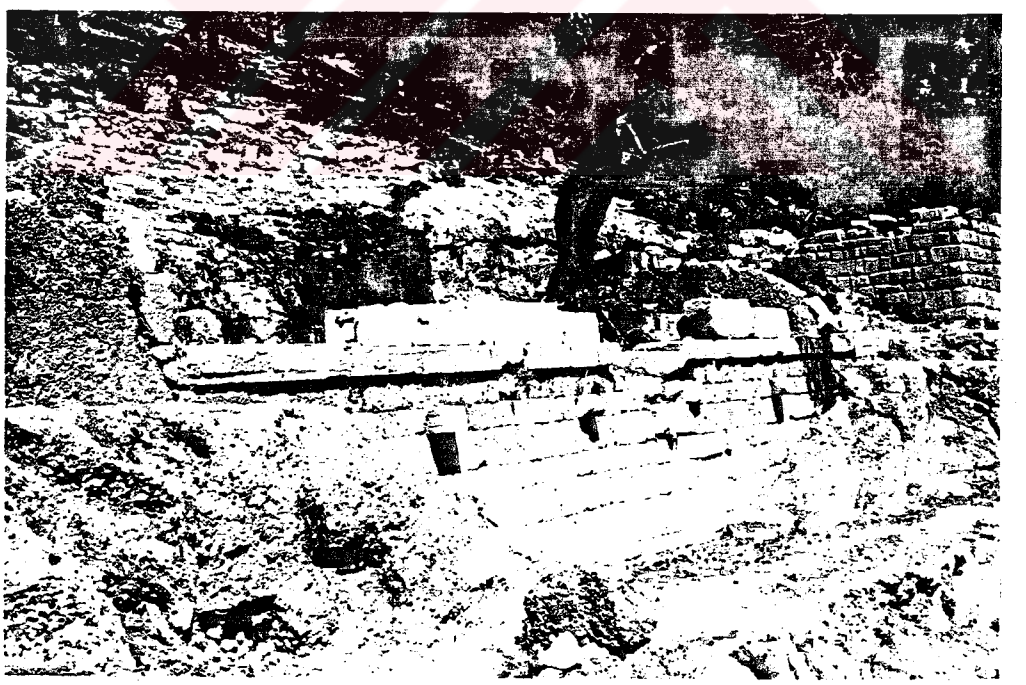


Fig.63. Front View o Bouleuterion

benches, carved into rocks. The sitting benches of the theatron, has maximum three cuneiforms, and are covered with marble.

There is no trace or hollow as a connection in between the main hall and the theatron. It is supposed that, there had been a wooden staircase. The main entrance to the sitting benches, is provided by two doors at the east and west directions which are adjacent to the north wall (Fig.64).

The inner and the outer facades of the bouleuterion are plastered. The embroidered plasters can be still observed partly at the main body, and also, at the entrance hall. The finds of the bouleuterion, indicate that the roof covering is from limestone plaques.

3.9.15. The Upper Stoa:

The stoa is placed at the east end of the bouleuterion. The western and eastern parts are covered with shops. The entrances of the stoa are at the east and west. The stoa is connected by a stair-standing nearly at the center to the upper terrace. The southern end of the stoa is achieved by two stepped stone rows (Fig.65).

The biggest cistern of Arycanda is situated at the east of the stoa. The stoa is achieved by carving the existing rocks, and it is related with the systems of ducts, and the open channel, which brings and runs out

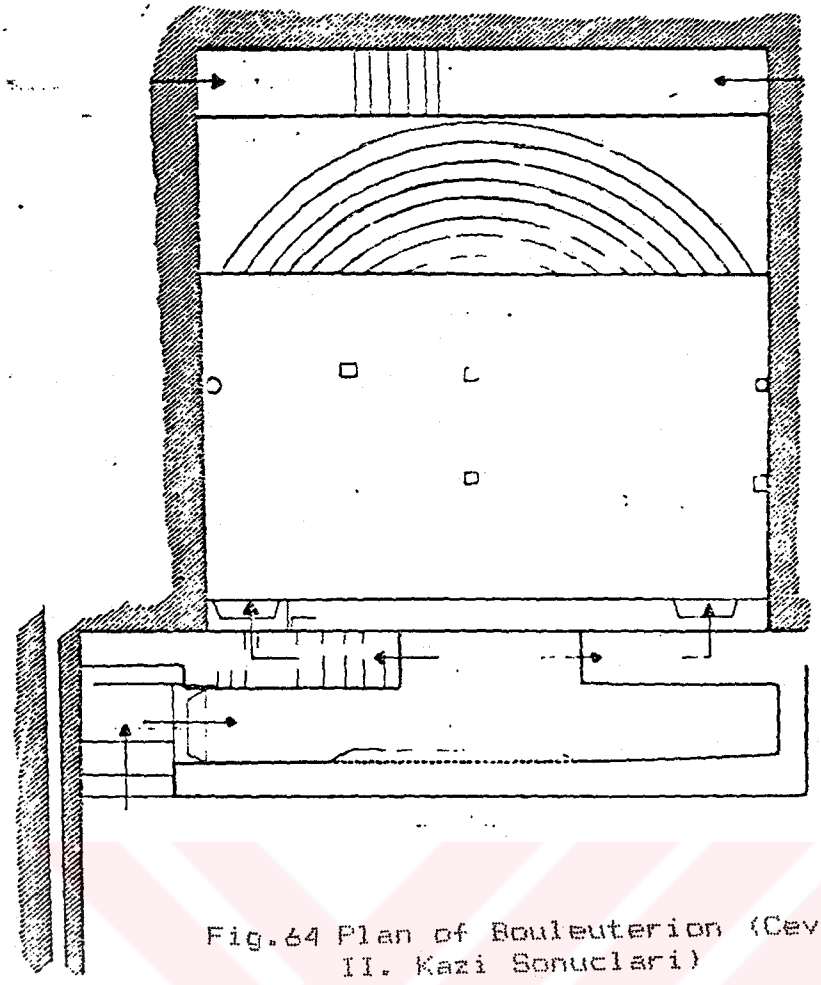


Fig.64 Plan of Bouleuterion (Cevdet Bayburtluoglu, II. Kazi Sonuclari)

Fig.65. Upper stoa and rooms beside the stoa

water. To prevent the negative effects of erosion causing by rainfalls, the some type of closed channel system with the stones, is found at the east end of the stoa.

3.9.16. The Upper Bath:

The upper bath is located at the south-east of the bouleuterion, and the upper stoa, several terraces down.

The upper bath is the fourth bath of Arycanda, where it is situated with the same level of the stadion, at the bottom terrace of both the bouleuterion and the upper stoa. It is carved into the rocks, and placed at a terrace by closing the facade of the other terrace (Fig.66).

The east wall, which is located at the south wall of the entrance of bath, is protected upto the height of the spring level of the vault till today. The trapezoidal door is the entrance of the first part which is covered by floor mosaics. The thick plaster with gray-blue paint, is still existing. This part is used as a frigidarium, and illuminated by a trapezoidal window, at the south wall. Passage to the tepidarium, is provided by a door opposite to the main entrance. The floor of tepidarium is covered with the square shaped baked earth plaques. Also, the hypocaust bricks are arranged in a proper order.

The entrance from the tepidarium to the calidarium, is provided by a door at the middle of the wall. The west

T. C.
Yükseköğretim Kurulu
Dokümantasyon Merkezi

Fig.66. Interior view of upper bath

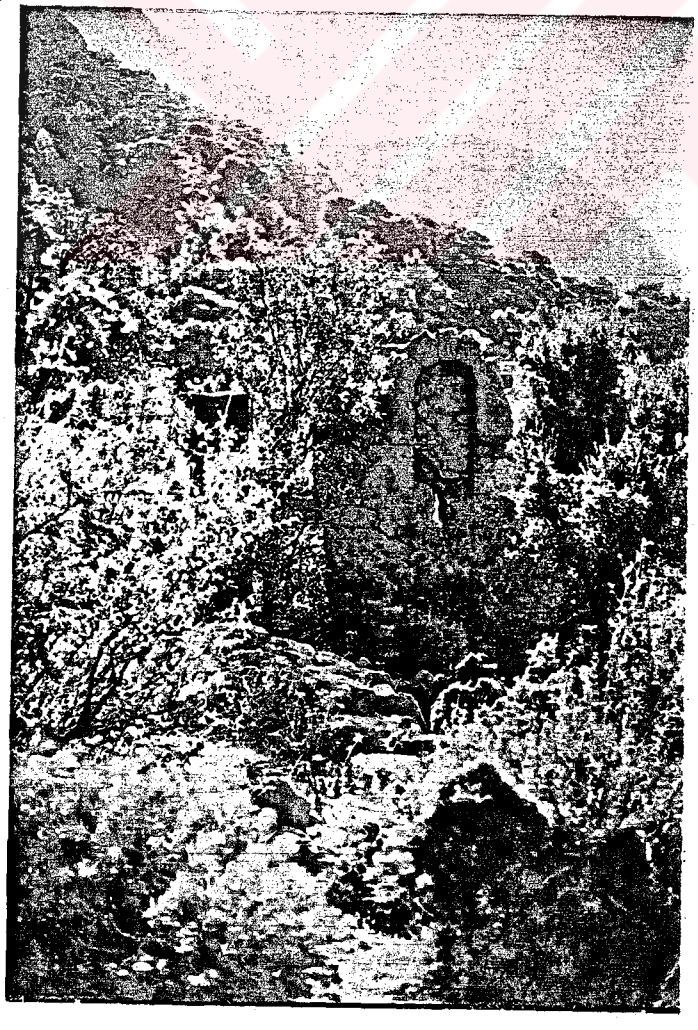


Fig.67 Nymphaion

wall is projected by a niche, which is covered by a semi-dome. The northern and the eastern walls of the niche are surrounded by a seat. The sight window, seen at the Lycia baths, is at the middle of the south wall.

At the west of the niche of the calidarium, there is a supplementary part which is supposed a water tank. The south side of this part is demolished, and the sound parts are covered with a thick plaster.

Like all the other remains of Arycanda, the upper bath has less findings. From the coins found here, it is cleared that the bath is constructed at the late of the third century, or the fifth century A.D. At the fifth century, because of an earthquake or a fire the construction had begun to using as a residence, and then it was abandoned.

4. CITY PLANNING DEVELOPMENT IN ANTIQUE PERIOD

4.1. City Planning:

Hellens were living as small groups, and were governed by local kings or chiefs. When they started to live in a settled order, they have developed city-states/ polis concept.

The political activities were gathered in a center by passing from tribe to city life in the 8th-7th centuries. The developments of the city-states, were parallel to the cultural, religious and political developments, and enriched by new elements. the city-states were not occurred at the same time in everywhere. The ones on the sea-shore had lands appropriate for agriculture. Defense problems and political insecurity were the other important points of the locatig of the city-states. Cities on top of hills were common in the archaic period. The ones on the sea-shores, mostly, were the results of overseas migrations. Plain cities occurred in the 7th century.

Other important element which states the location of the cities was water. There were too many cities which were located through or in between two rivers.People were gathered around springs and wells. Even a castle needed a

spring incase of long surroundings. They paid attention to locate agora and gymnasion close to water.

The historic nucleus of most of the old cities was acropolis which could be defended very easily, at the beginning "polis" and "acropolis" were similar in meaning. Acropolis was a place both a castle, a piece of land valuable agriculturally, a shelter, and a place where kings were settling (Fig.68). The rest of city was usually located lower from Acropolis.

At the beginning, agora was next to the acropolis and close to the main gate of the city. By the development of public life, agora became the most important and living part of city. As a result of democracy, acropolis became an addition of city, and gained sacrecy and respect.

Houses were simple, and unimportant in architectural point of view. But they gave the real character to city. These houses were on curved and narrow streets of the cities, and one in another as complex groups. Streets usually laid upon the slope of site. These streets reached irregularly to agora from the gates. Until the designed city planning, this radial system were used. There was no conscious planning in old cities. Bouleuterion, prytaneion, stoas and other public buildings were generally around agora without any usual place in city plans. Temples could be anywhere , especially in

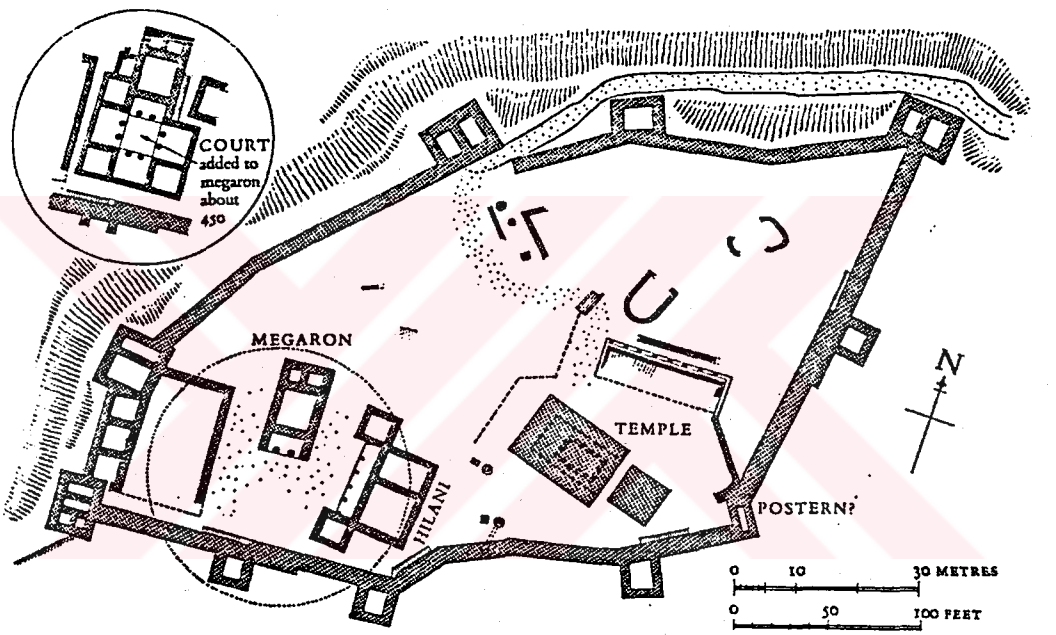


Fig.68 Acropolis, Larisa (Robert L. Scranton, Greek Architecture)

acropolis, and around agora. The location of the big buildings, such as theater, stadion and gymnasion, etc, depended on the geographical condition of the site.

City walls which were not the dominant element of the plan, generally with respect to a natural source , surrounded the cities with the shortest line. They were left uncompleted in case of every very steep parts of sites. Their dimensions were proportional neither with the population nor the area that was surrounded .

There were graves outside the citadels, around the gates and through the roads.This area was called necropolis which means city of deads.

The developed Hellen civilization was creating new colonies, new capitals for united and group states, new cities over the ones which were destructed by Persians. They started to make city plans in the 5th century, to give an order to the developing and growing cities. The architects were putting out some theories on the ideal city. The careful planning was accepted as a property, and gave a value to the city in 4th century.

Hippodamos had put out a very crude and strong order to the city planning in the 5th century. This new system which is called grid-iron planning, was not very complex or difficult in reality. It was a simple system which was formed by the streets-which were perpendicular to each other.

In this system, main roads were generally in the east-west direction (Fig.69). Sloping secondary streets were crossing these roads. Housing blocks, civil buildings, and areas, were exactly rectangular. Agora was generally on the area which was tangent to the most important main street.

Streets were generally 4.5-6 meters wide. Important streets were more wider than this. If it was not one of the main characteristics of the plan, two main streets were never cross each other. Ground was hard earth as a rule. They used stone only where water would run (Fig.70). Ordered stone paving was first seen in the Roman period.

The aim of the "Hippodamos Plan" was to satisfy the necessities from the shortest way, not from aesthetics. It could have not be dominant in the Hellen cities, but was used only in the new ones.

4.2. Agora:

Agora was the heart of the Hellen cities. In the early times, it was so simple, and was located at the center of a flat space. There were only seats, and a chair for speakers. By bringing some work benches, open market could have been started (Fig.71).

Council, prytaneion, magistra, archieves, and studying halls for commitee, were placed near, or in

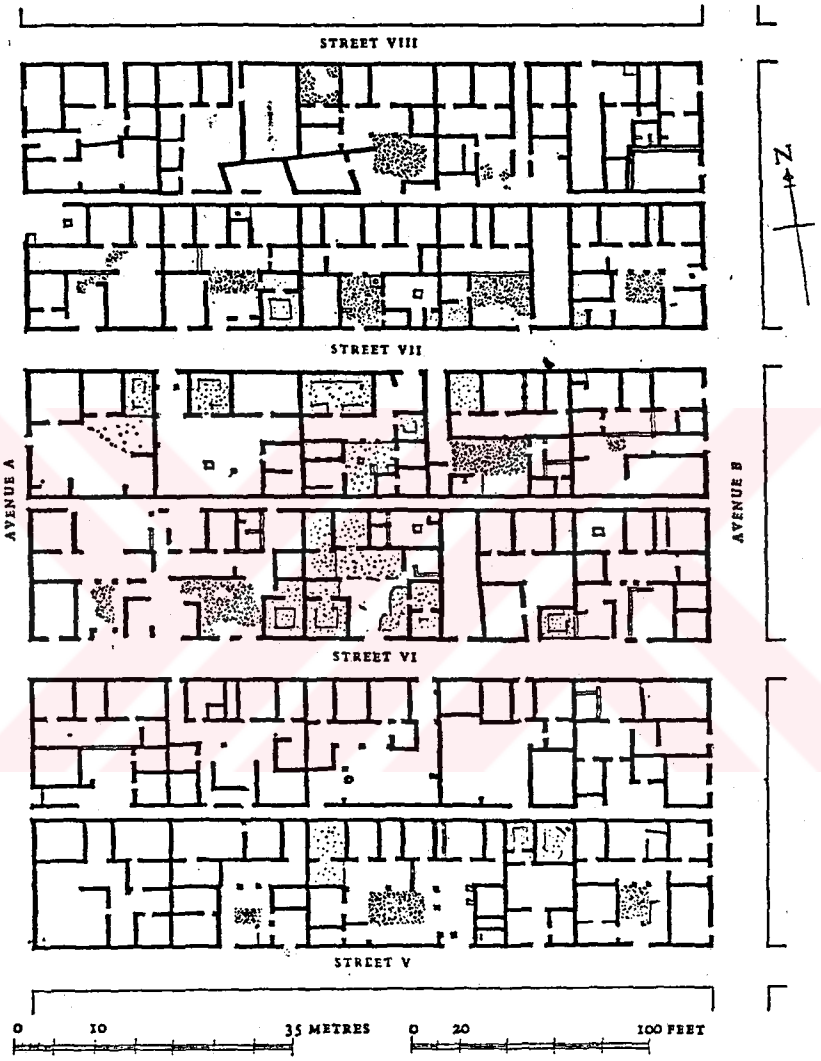


Fig.69 Plan of Block Houses, Olynthos
(A.W. Lawrence, Greek Architecture)

agora.

Agora was combined from stoas and temples. The development of agoras was not uniform. At the end, there did not obtain any architectural characteristics of its own. The exact features started to shape in the sixth century B.C. Also the public buildings were in agora. Commercial activities were achieved in agora where religious and political lives were connected to art. Also the center of art was agora. Agora was some kind of a connector of the life of Hellens, and let all the buildings be connected. Also, street system was related to agora. The Ionian agora was created by following the way of Hippodamos; serious, shy and organized characteristics was took an important place in the Greek architecture.

4.3. Sacred Areas

A city or whole state belongs to gods or a special god. God saves the city or state. Civic building which are devoted to gods are altars, statues and some cults, etc. Gymnasions were also combined to sacred areas. The fires of the houses were also sacred and there was an altar in the courtyard of every house.

Caves, graves, hill tops, wells, rivers and seas were respective areas. Graves of heroes, kings and people were also sacred areas.

But temple and sacred area did not mean the same

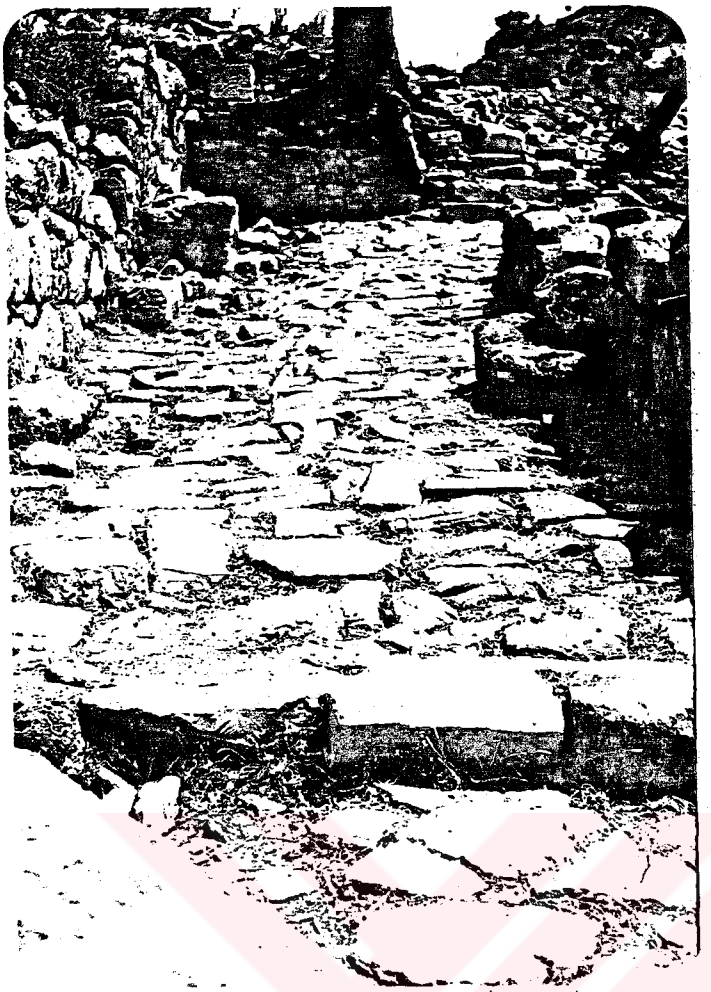


Fig.70. Stone coverings on street, Caunos

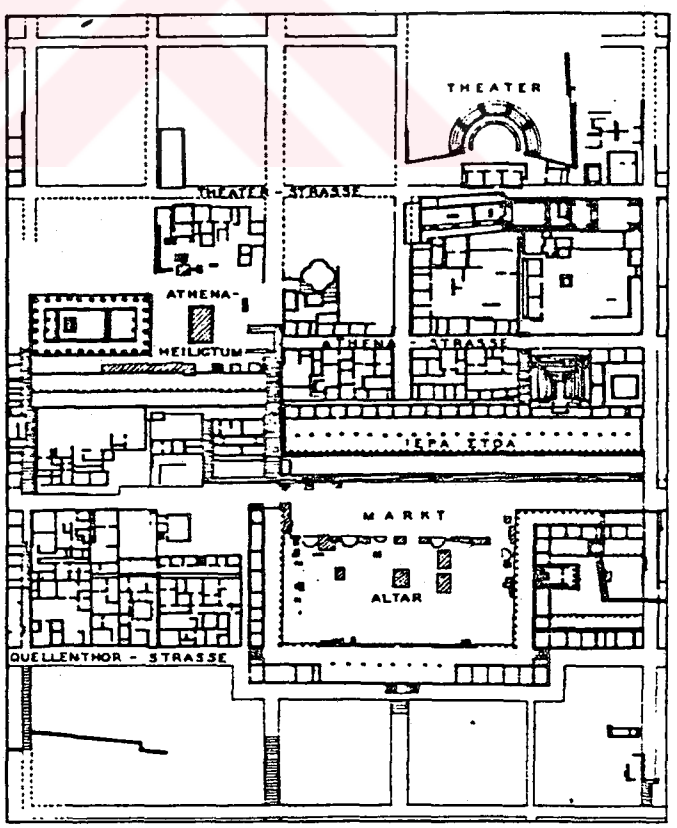


Fig.62 Agora and Environs, Priene (Robert L. Scranton, Greek Architecture)

thing. Every temple is a sacred area, but there must not be a temple in every sacred area. A piece of land and a natural or manmade sign to worship to god are required to create a sacred area. This area was surrounded by signs or hedges to preserve sacrecy. If worshiping was according to the rules, an altar would be added.

Sacred areas could be in various parts of city and generally those were older than city (Fig.72). If an important sacred area was outside of city, it was combined to city with a ceremonial road. During growing of city, to combine sacred areas with new buildings needed careful working. Temple facades were especially on the east and temple was through the east-west direction. There was not a temple in centre or on axe of agora, a front courtyard was added to it.

Acropol has lost its religious importance in Hippodamus planned cities. In these cities, there were two or more areas left for sacred areas but rectangular planning made temples to be stereotype (Fig.73).

The first sacred area in the 7th century was an inordered area surrounded by a border. But in 6th century, it became a building that had an altar, a surrounding wall with propylon and a part for the monks looking to the west on the outer terrace. In the 5th century, the temples which were destructed by Persians were enlarged and reconstructed. Terraces are also enlarged and organized,

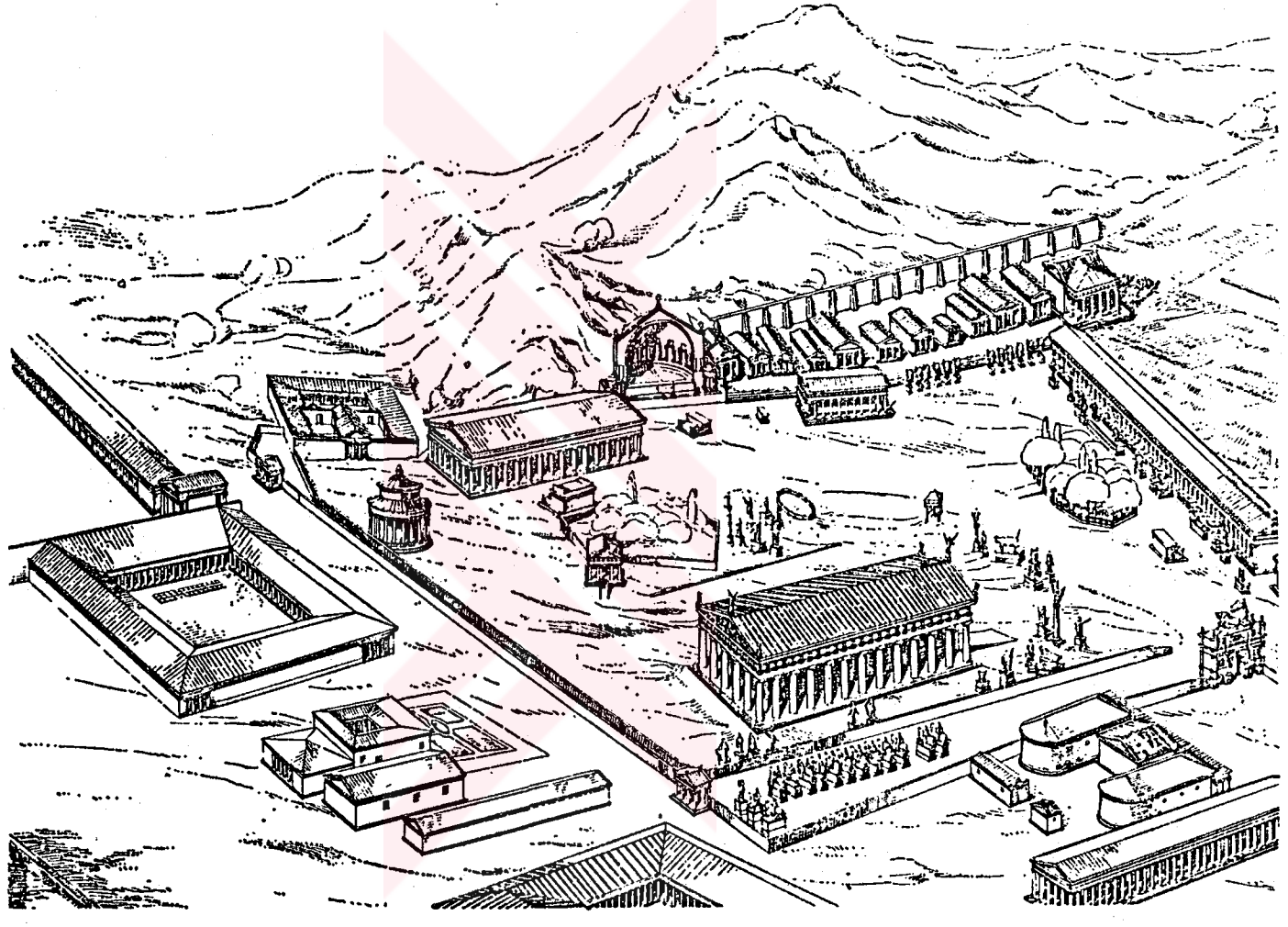


Fig.72 Restored Sanctuary, Olympia (A.W. Lawrence, Greek Architecture)

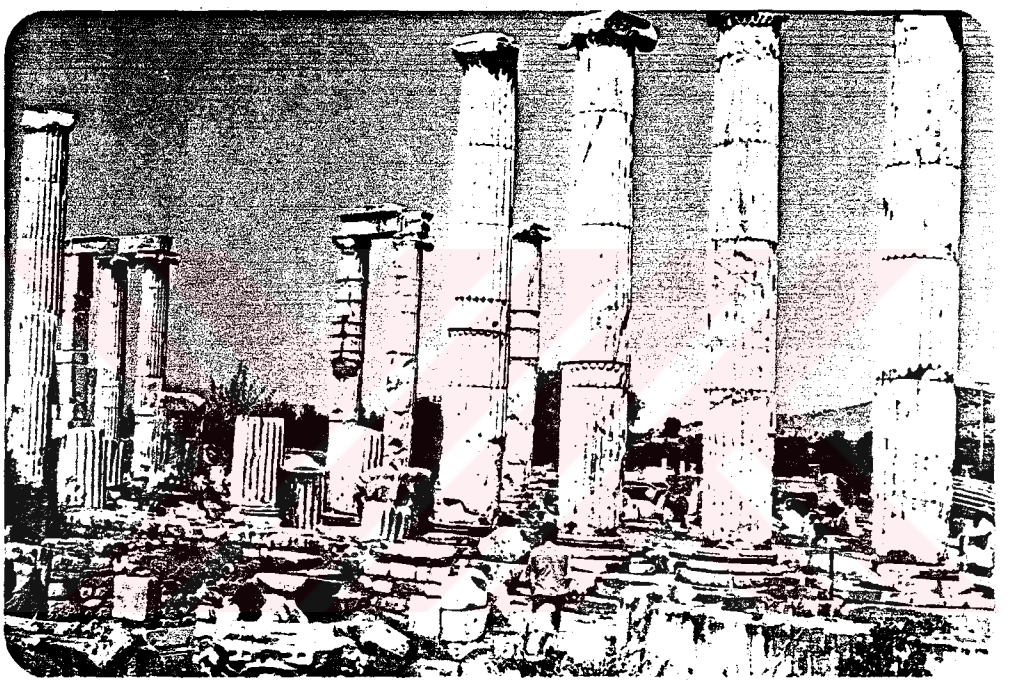


Fig.73 Temple of Zeus, Aphrodissias

and new wings were added to propylon with an increase of columns.

4.4. Stoa:

It was a very simple building only with an open colonnaded and frequently coincided form. A colonnaded entrance gallery or a front facade could be formed as; stoa could be placed at one or more than one corner of the courtyard, and could take the form of inner or outer peristyle.These columns are connected to the back wall with a roof. Stoa could be an architectural feature by itself.

The origin and the first development of stoa is uncertain. In the fifth century, stoa was become an important and special part of cities; particularly in agoras. L shaped stoas appeared at the archaic period, and continued to be used.

In the second half of the fifth century, projecting forward narrow wing were added at two sides, were raised by pediments. In the Hellenistic period, two storey colonnaded galleries were developed (Fig.74). Colonnaded galleries at sharp slope areas, opened to a terrace of agora. However, at the other side of the stoas was faced to the direction of slope, not only included the back of the colonnaded gallery, but also lower stairs of it.

Like the agoras, stoas were used for various aims and

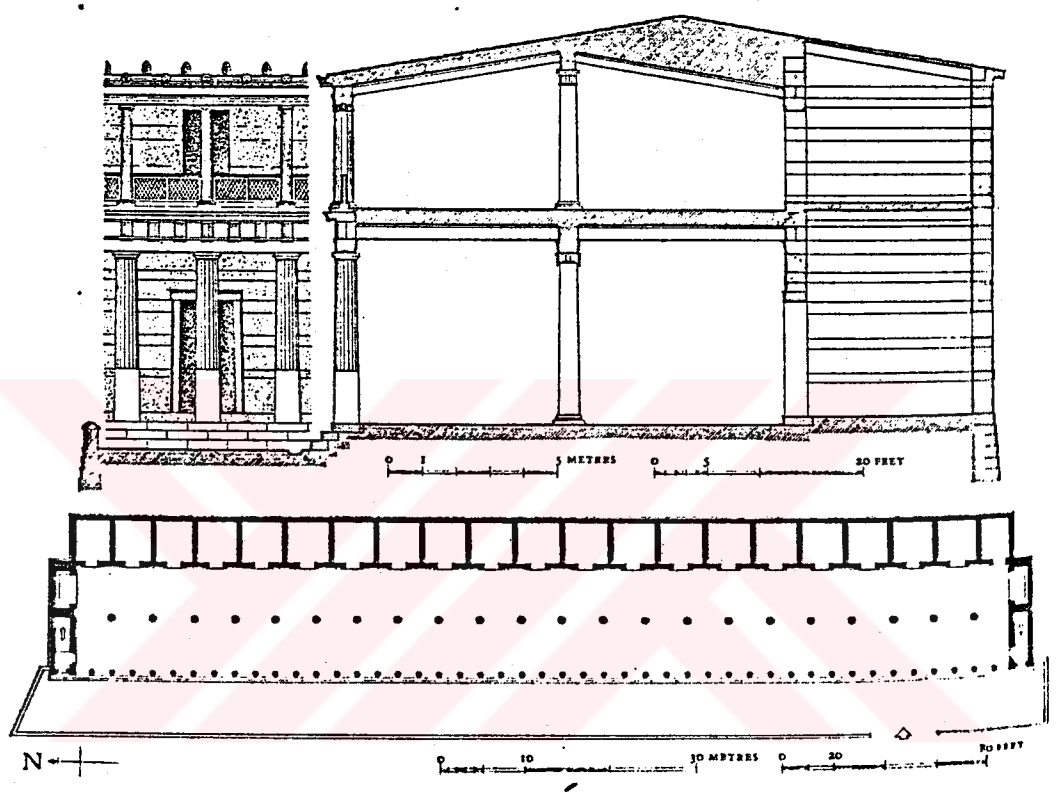


Fig.74 Restored Elevation, section and the plan of Stoa of Attalos, Athens (A.W. Lawrence, Greek Architecture)

they were not peculiar to agoras. They could be anywhere and could be had the functions as political, commercial, educational and social. Sometimes walls were painted with big pictures, though the aim was not to be an art gallery, but it also carried out this function. Stoa was used as a commercial or recreational are mostly, as a court wall occasionally.

4.5. Theater:

Theater was an important construction of the city which was constructed at a prominent slope of the acropolis and was preferred to be oriented towards the south.

The essence of the Hellenistic theater, was an orchestra which should not have been similar to a form of circle, and had a bit of squeezed smooth earth. Around this nucleus, theatron was placed at a slope rising from smooth ground orchestra, or at a surrounding walls of the three sides of hollowed orchestra. Theatron was used for a whole construction by the time as a result of the dominance of cavea.Some parts of seats especially the upper parts were carved into rock.

By the development of the art of theater, skene was appeared for the necessities of rigging for performers. Upto the 5th century, it was a simple and an assistant element and did not take a place at each theater.

The natural lines affected on the place of the theater. It was taken as wide as possible to include all the habitants of a big city (Fig.75).

It was provided a tent canvas or wooden skene, but when skene was started to be constructed with stone by a form projecting outwards, means paraskenia, it was wide spreaded as being useful. Proskenion, appeared in the 3rd century, became a permanent characteristics of theater (Fig.76).

Staircase, running from ground to upstairs, separated a covea into pieces which are named as cercides. Diazomas separated tiers of seat by horizontally to run out of spectators.

In the Roman period, theater changed into amphitheater and magnificent theater, rising on a smooth area, by the help of arch and vault technique .At the upper part of teatron, there was a colonnaded gallery.

4.6. Odeon:

Small theater which was used for music shows or discussions by Romans, is called odeon or odeum. Also, bouleuterion was used for this kind of activities, and a stage was added such as in Miletos. By an increase of this kind of shows, need for another building was occurred. Seats of odeon were shaped on rocks (Fig.77). Entrance was like in bouleuterion, from doors on wall opposite to

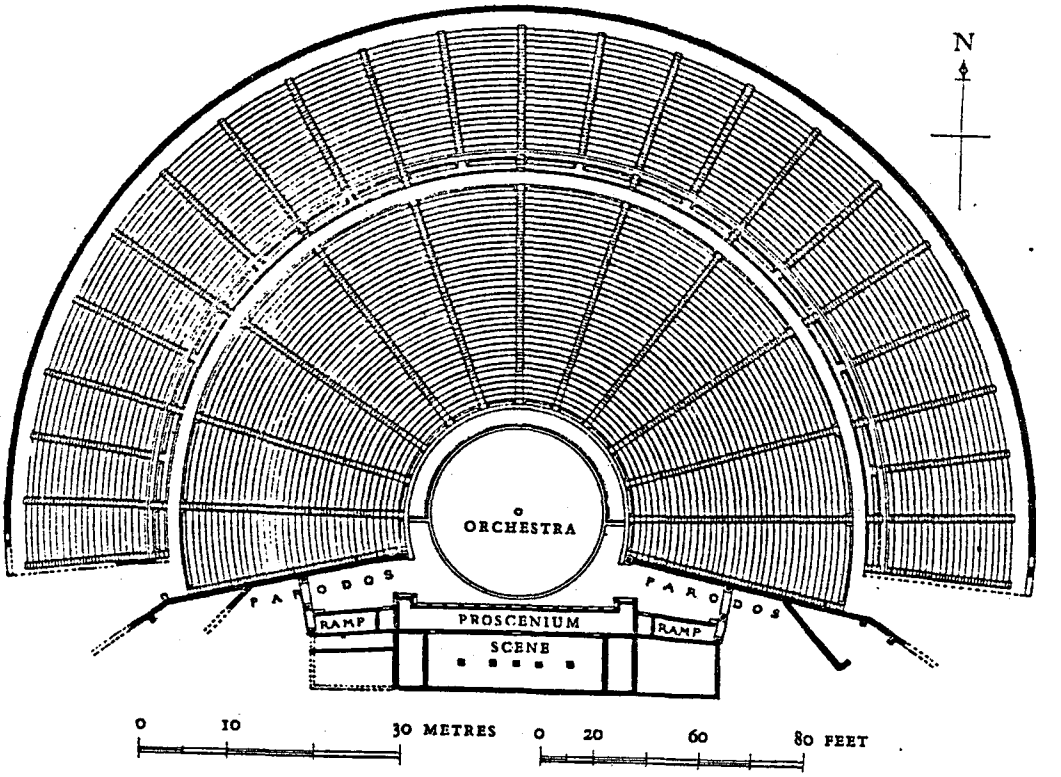


Fig.75 Plan of Theater, Epidauros (A.W. Lawrence, Greek Arch.)

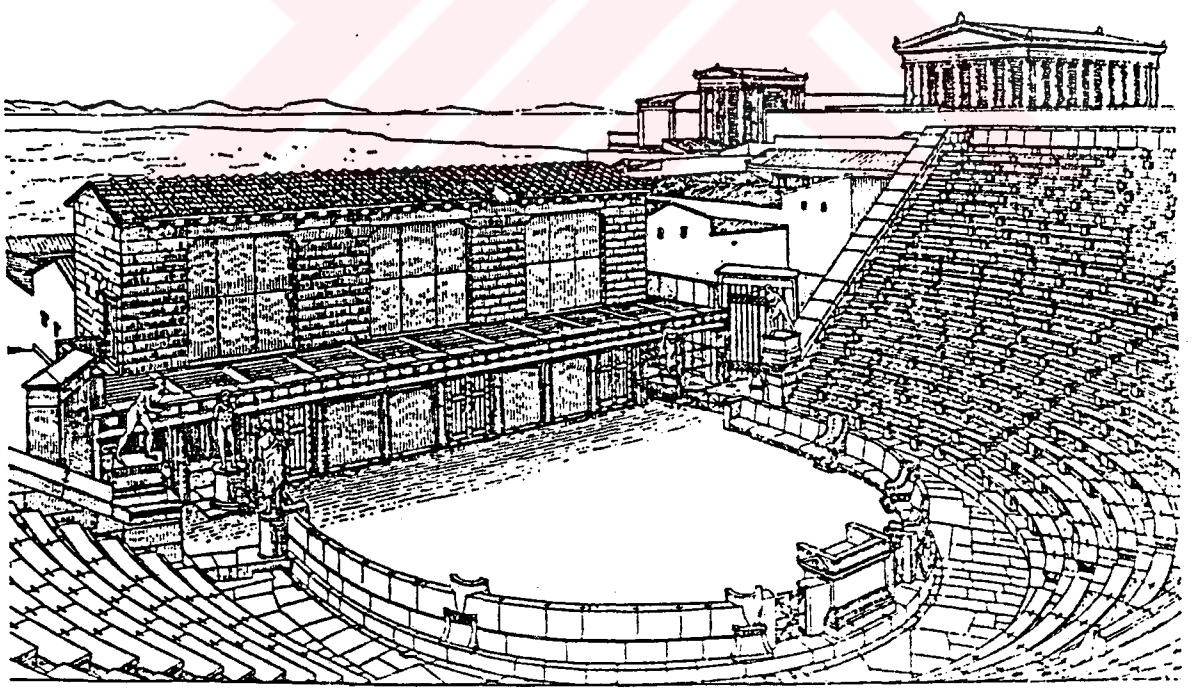


Fig.76 Restored Elevation of Thetater, Priene
(Robert L. Scranton, Greek Architecture)

orchestra.

4.7. Stadion:

Stadion also developed from the simple and natural elements; at the important sport days and the olympic festivals, it was still in a primitive form, and had no architectural features. Along sides, tiers of seats were laid, and had a slope at the one end, and a monumental entrance at the other end. Earlier seats of stadion were made of earth. Marble seats appeared at the second century A.D.

The choice of stadion location was related to natural lines. In the city planning, stadion neither has an unusual place, nor a certain relation with the other important buildings. Even if an orientation at the east-west direction was prefered, it could be changed. In some occasions, it had a close relation with gymnasion.

In the Hellenistic period, applying to seat ordering was started. At the top, sometimes a wall or a column row, was placed. During the Roman period, seating benches were put in order twice, and by the time, slopes were steepened.

By the influence of theater, semicircular and (sphend one) became one of the traditional features (Fig.78). This part was sometimes used as a theater for some shows. By the time, the two ends become semicircular, and the sides

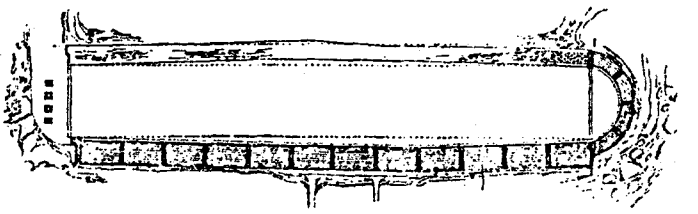


Fig.78 Stadion, Delphi (R. E. Wycherley, Antik Cagda Kentler Nasil Kuruldu)

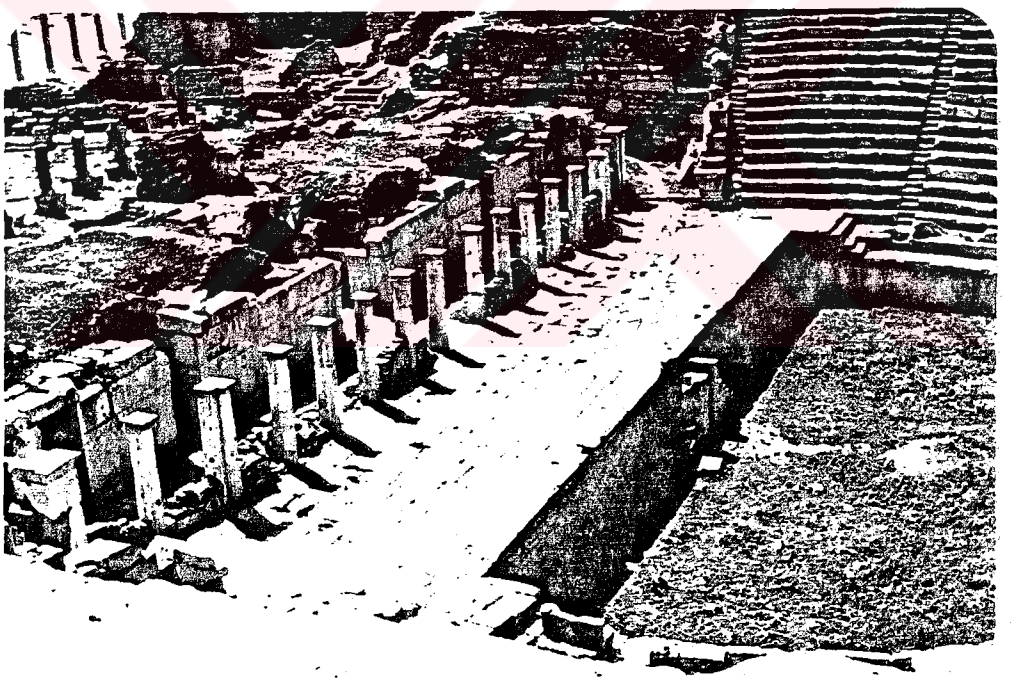


Fig.77 Odeon, Aphrodissias

were limited by barriers so that area looked like an arena. In the Roman period, the simple appearance of stadion was masked by the colonnaded monumental entrances and ornamentations.

4.8. Gymnasion

Gymnasion which was more than an architectural feature, was a wide sporting area. Inside and around the sporting area stoas, baths, dressing rooms, store houses, class rooms, conversation rooms and other related parts were taking place. The shape and the place of gymnasion were determined by the needs of sporting exercises and military training.The watery and woody places were preferred; if such a place could not be found, water was brought by channels.

Each Hellenistic city had its own gymnasion. At the big cities, beside a palaestra, there were two or more gymnasions.

By the time, the ordinary developed construction sporting activities, was taken into a colonnaded courtyard with surrounded various rooms, and named as gymnasion or sometimes a palaestra. In the fourth century, it continued a colonnaded square courtyard which was opening to a colonnaded gallery, and surrounded by rooms for undressing, greasing, powdering and storing grease, and riggings, and all along the sites (Fig.79). One of the most important room was ephebion which was kind of

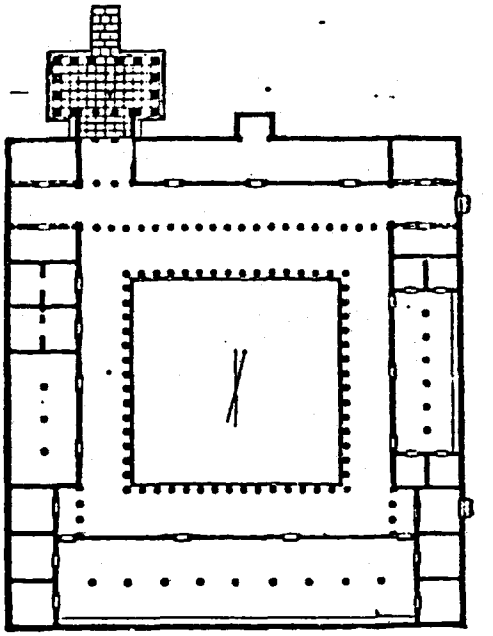


Fig.79 Gymnasion, Epidauros (R.E. Wycherley, Antik Cagda Kentler Nasil Kuruldu)

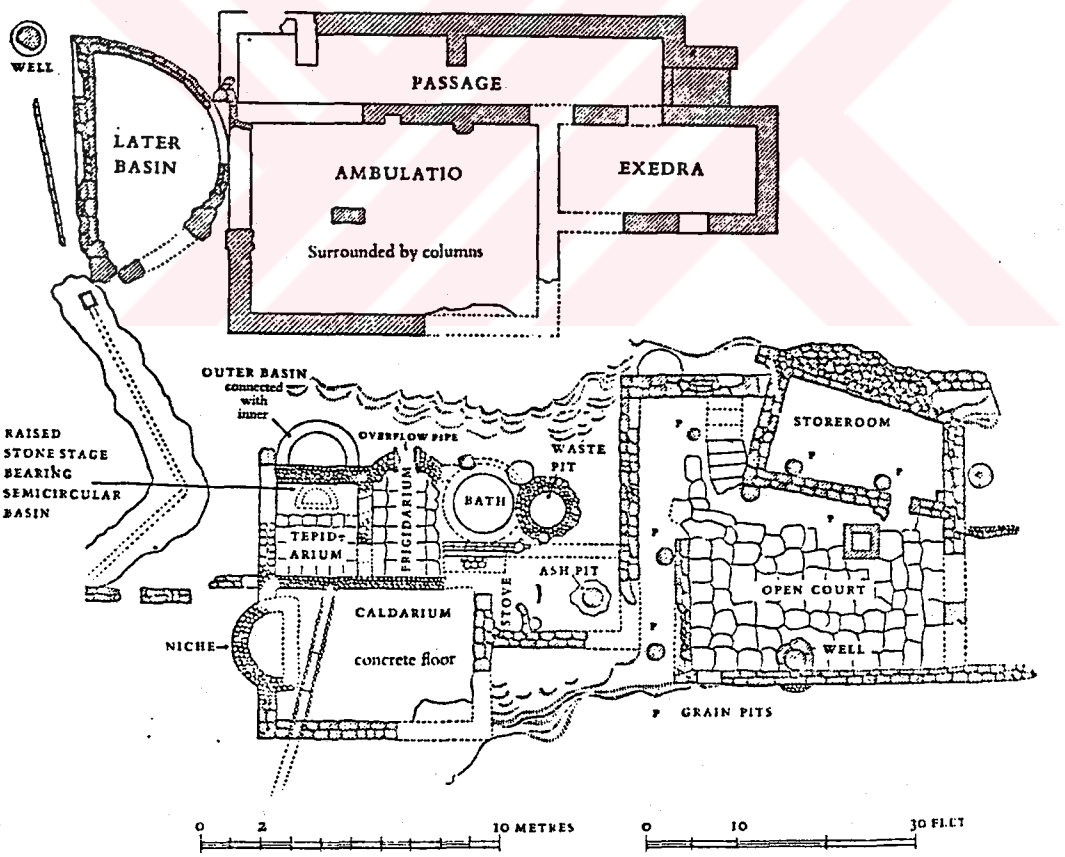


Fig.80 Plan of Bath, Kerch (A.W. Lawrence, Greek Arch.)

meeting room and classroom. Beside these, there were bathrooms also.

4.9. Baths:

The earlier Roman baths were simple, usually consisting of a group of two or three rooms for the proper cold and hot temperatures. A dressing room (apodyterium) which has cubicles for bather's cloths, was added later on. Rooms were made large enough for the use of considerable numbers of of people at the same time. They were richly decorated with paintings and plaster reliefs. In addition to these there was a collonaded court for outside exercises, as eleborate public toilet (latrina), and in some examples, a large outdoor swimming pool (natatio) .

Even in early times, the heating system of rooms was already complete. Separate service entrances and courts gave access to furnace, floor spaces and wall flues. This whole system was called "hypocaust". The same service area was always available for cold (frigidarium), warm and hot baths (calidarium). The piping arrangements of these heaters show at least on elementary knowledge of the theory of water circulation through temperature change (Fig.80).

4.10. Bouleuterion:

The bouleuterion which was a council of king, and a closed building. Generally, there was an altar of Hestia, goddess of fire.

The bouleuterion was one of the first civil buildings. Early examples were in rectangular form. Later on, they were developed and became a small theater-like building placed in a squarish place. The developed roof structure was completed too (Fig.81/a.).The seats were either carved into the rock or made of timber (Fig.81/b).

The entrance of the bouleuterion was from the two sides of the wall which is on the orchestra side, and from the door at the middle of this wall. In the Hellenistic periods, the seats were marble. If there was not a special place for the speaker, they were either taking place in orchestra are talking from where they sit.

The bouleuterion was a plain building (Fig.81/c). It did not take an important place in agora architecture, and reaching was a little bit difficult. There were stone columns to support the roof on top of the seat rows. Generally, there was a complete symmetry around an axe through the cavea and the propylon.

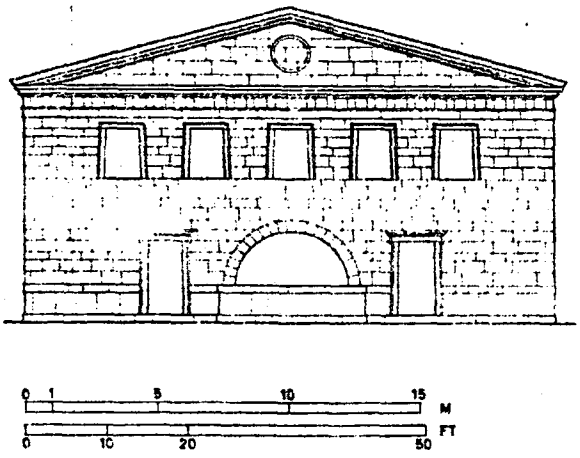


Fig.81/a Elevation

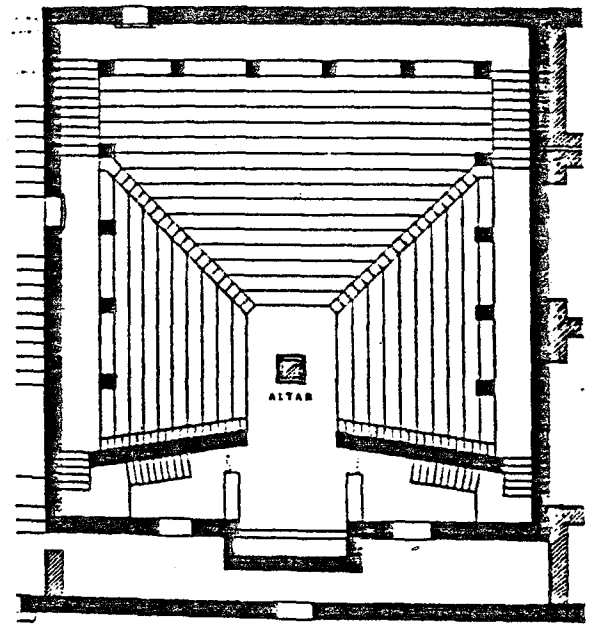


Fig.81/c Plan

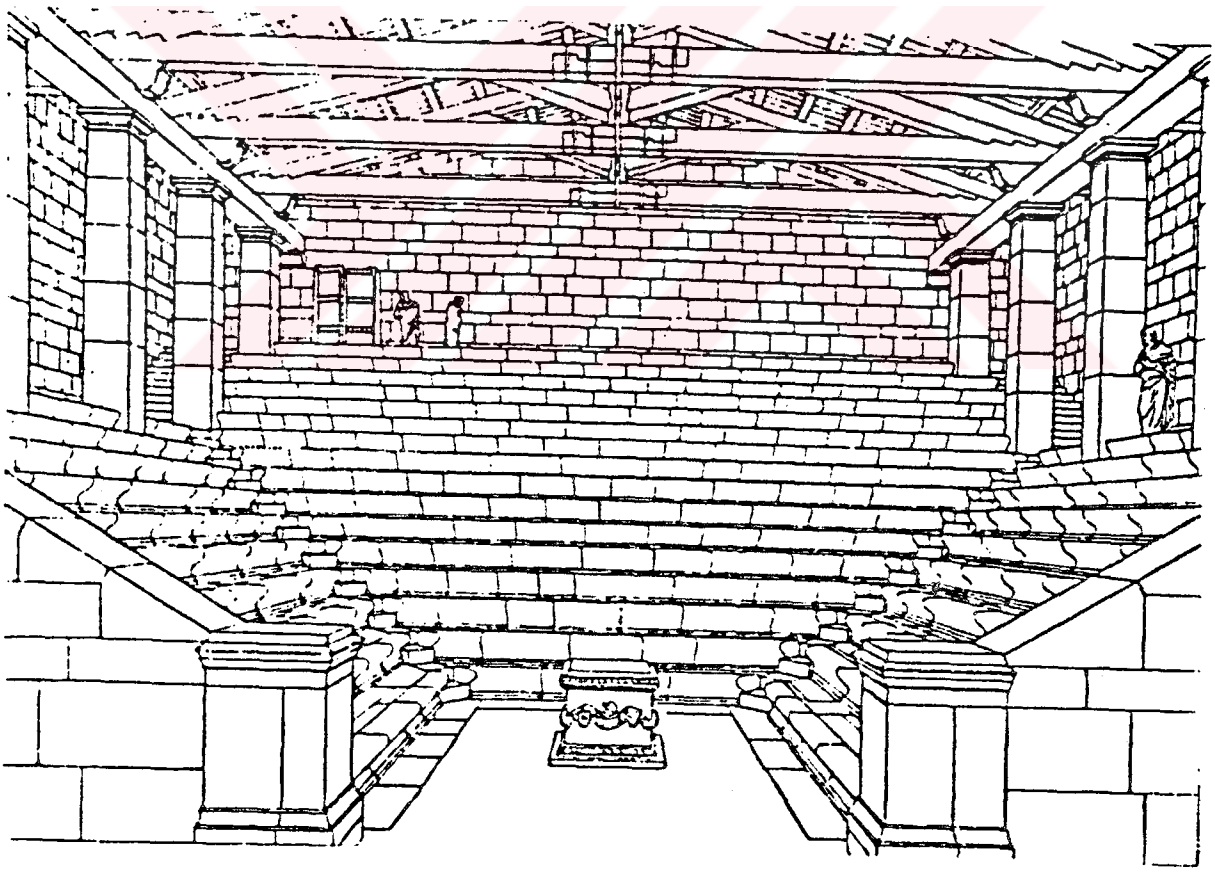


Fig.81/b Interior View of Bouleuterion, Priene
(Robert L. Scranton, Greek Architecture)

The last form of bouleuterion was small rectangle surrounded by four walls, and a roof over it, or a semi-circular theater.

4.11. Prytaneion:

The prytaneion was the continuation of the kings' house in the functional point of view. There was a dining room to serve for the officials, for the ambassadors of the foreign states, for special guests, and for the national heroes.

The architectural form was not different from a house (Fig.82) Its main property was the fireplace which was in the people's ownership.

In the early archaic times, the first examples of prytaneion was round and circular hunt form, but this was not a generalization. In the later examples, it turned to be a square building with a fire inside. There were courtyards on two sides having a series of columns at the ends. These collonaded areas served as dining room and kitchen.

It could be differentiated from the other buildings around the agora with its monumental entrance and house-like planning, even its architectural type was not different from the other buildings.

4.12. Houses

Houses have secondary importance in the planning of Hellen cities. There was no chance for a good design of the houses in the areas that are left from religious and civic buildings. Houses began to be in order with the Hippodamus plan.

Megaron, which is the first house type, lasted very long. In the 5th and 4th centuries, houses were very close to square in form and divided more or less equal to two as north and south parts. North part is a narrow and long room which is about whole of the house and called prostas. It opens to courtyard from three or four points. At the center of the south part, there was a paved courtyard sometimes with an altar (Fig.83).

There was no strict rule for the orientation of the houses, but only it was preferred to place oikos where includes a meeting hall, on the south direction to be able to get light and sun. A simple Hellen house does not have a large area for garden. Antique houses were intraverted, has no relation with the street. Entrance doors should tried to face to solitary streets and placed in a niche called prothyron. Facades were monotonous and did not give a clue about inside. If there are windows, these are either on the second or upper floors. Most of the rooms are facing to the courtyard. In some types, there was a main room, and other rooms and courtyard were

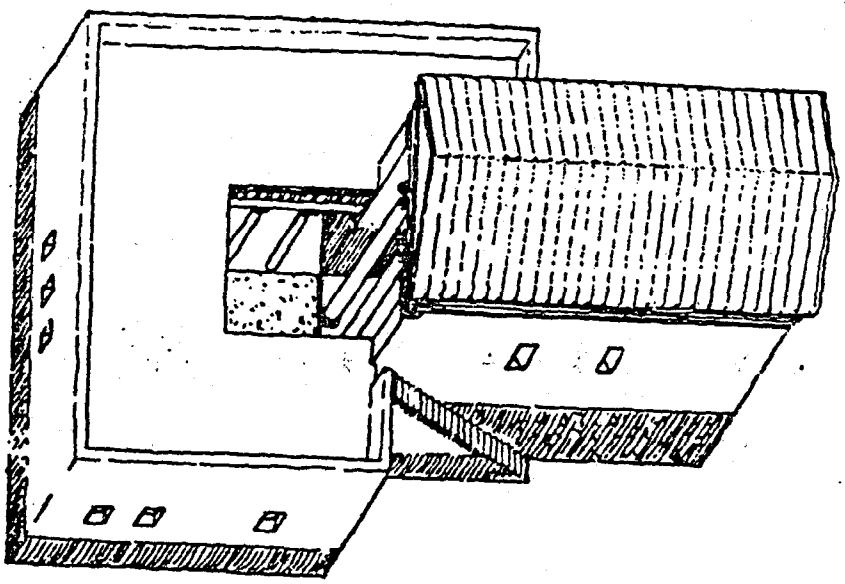


Fig.83 Reconstruction of House with Courtyards
(Mukremin Usman, Antik Devir Kucuk ...)

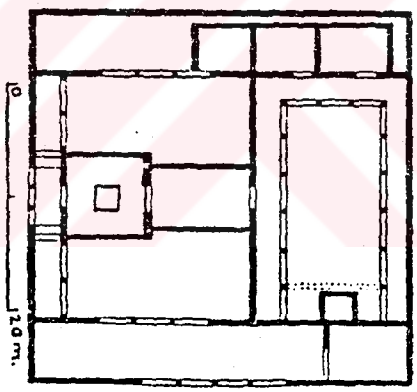


Fig.82 Prytaneion, Olympia (R.E. Wycherley,
Antik Cagda Kentler Nasil Kuruldu)

like additions to it. There could be columns on one or more sides of the courtyard. This is called perystyle house type.

Generally it was very difficult to differentiate the rooms, but only the main eating room which is called triclinum and "selamlik" room could be differentiated from other rooms with their floorings. Andron and one more room made the "selamlik" part, which is called andronitis. The flooring of most of the rooms are pressed earth. There was not a clear ornamented furniture in women's part, which is called gynaikonitis (Fig.84). There was a daily room with a fireplace at the center of it. There was not a special space for the kitchen, some parts were being used for cooking. Houses had some rooms to take bath. These were mostly big rooms opening to the space used as kitchen. Floors and walls of these rooms were covered with water repellent mortar. Sometimes, they were using bath-tubs made of terra-cotta. As every part of the house could not have water, the spaces, which are required water, were gathered. By this way, it was possible to transfer the dirty water from one pipe to the main pipe.

Bedrooms which were called thamalos and amphithamalos were generally on the second floor and to the north direction.

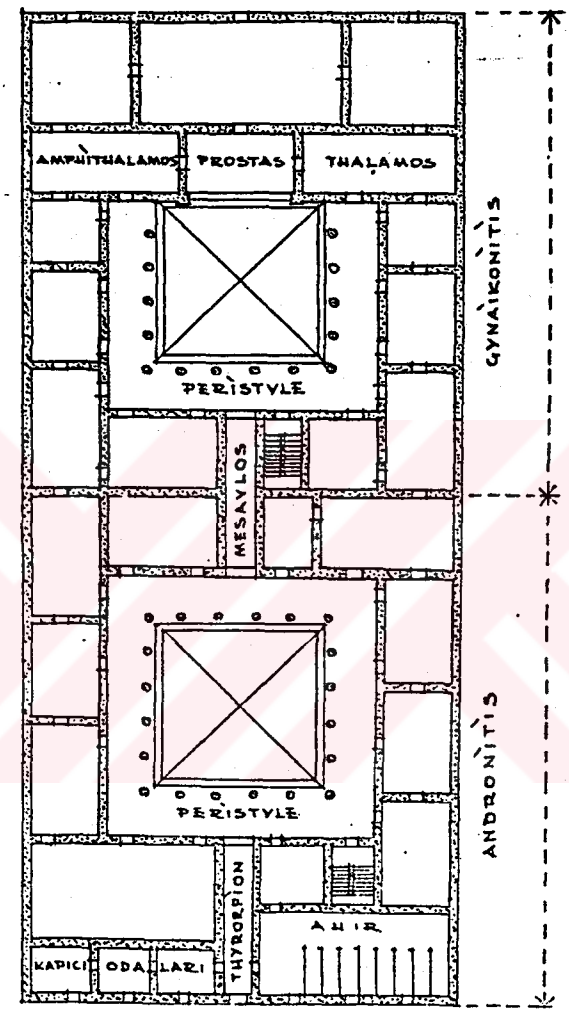


Fig.84 Ideal Plan Type According to Vitrivius
(Mukerrem Osman, Antik Devir Kucuk Asya Evleri)

Water could not come to every house. Except cisterns and wells, people were dependent to the fountains of the city. Dirty water was also transferred by channels.

Generally, upper structure was not a single roof, each part with its own height had a roof. There were terrace roofs as well as double sloped roof.

The foundations of the houses go deep until a strong ground or directly carved to the main rock. Wall masonry techniques were cut-stone or polygonal. The walls of simpler houses are rubble stone. Sometimes we see, brick walls on stone foundations.

4.13. Fountains:

The fountains had vital importance in the Hellen cities. These were civil buildings as well as a necessity in people's life. Beside its functionality, they were constructing by considering architectural and sculptor approaches.

They were supplying water from the far hills, by the baked earth ducts inside the stone channels which were placed underground for the security purposes.

The fountains could be anywhere such as in the streets, in the sacred areas, in the agoras, etc. The important fountains took place in the agoras. Especially, the fountains were close to a natural source.

The simplest fountain could be obtained by carving a rock. The cistern was parallel to this fountain. This was the most appropriate design for house-like formed fountains, mostly they were constructed by stone, and the roofs of the cisterns were supported by the columns. These columns also served as a shelter for the cleanliness of the water, and to project the people from the sun (Fig.85).

The water run out from the taps on front and sometimes side walls of the cisterns (Fig.86). Before the run of excess water in the taps or storages, sometimes it was passed through the channels. Just on the sides of the fountains, there were statues of special gods.

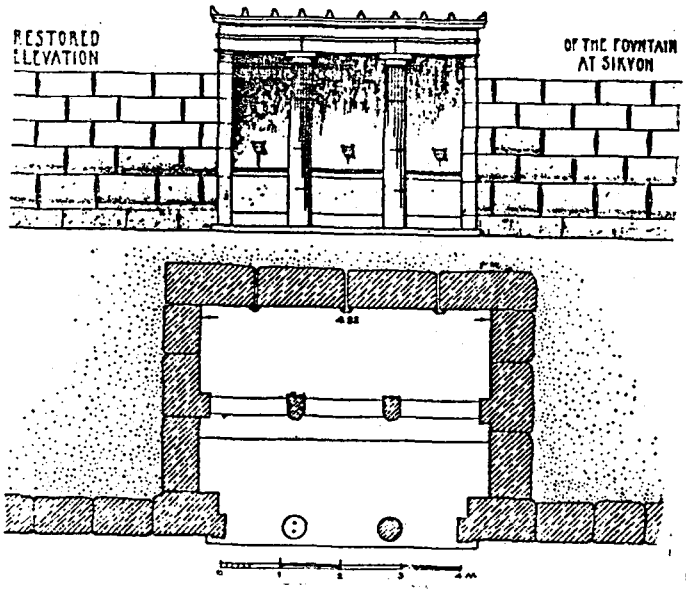


Fig.85 Nymphaion, Sicyon (R.E. Wycherley, Antik Cagda Kentler Nasil Kuruldu)

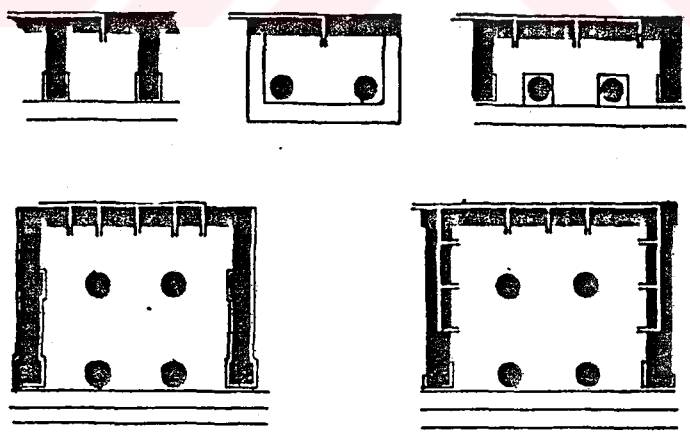


Fig.86 Nymphaion, Milet (R.E. Wycherley, Antik Cagda Kentler Nasil Kuruldu)

5. CONSERVATION PROBLEMS OF ARYCANDA AND RECOMMENDATIONS

5.1. Site Problems

5.1.1. Rock Falls

Frost and rain of winter seasons influence falling of rocks and rubbles from Sahinkaya which usually damage to the antique buildings and filling their interiors. Therefore, it is required to clean up some buildings and to repair some parts every year.

On the other hand, weakness of cohesion of layers causes rock falls and slides where slope is sharp. Consequently no excavation has continued in the east of the station.

The reasons of rock falls are followings :

i) Physical and mechanical characteristics of the field generally sourced from characteristics of the limestone.

ii) Ground water effects

iii) Undergrcund water effects

iv) Sharp slope

v) Cracks in limestone blocks as a result of tree roots.

From economical point of view, it is hard to design a rock slope so that no rock fall occurs. Therefore slopes are usually designed to allow small falls of rock under controlled conditions.(42)

5.1.1.1. Control of Slope

i) Rock traps in the form of a ditch and/or barrier can be installed at the foot of a slope (Fig.87). The dimensions of such ditches can be reduced if the bottom of the ditch is filled with gravel, if a barrier is also used, if the face is netted or if it is excavated in soft rocks.(43)

ii) Benches may also act as tarps to control rock rock fall, especially if a barrier is placed at their edge.

iii) Wire mesh suspended from the top of the face provides another method for controlling rock fall.

iv) Benching brings about stability by dividing a slope into segments. Benchings should not be more than 5m. to allow passage for inspection and should be kept clear. If rock faces are to be scaled efficiently, benches should not be higher than 12m. Also drainage systems should not be forgotten.(44)

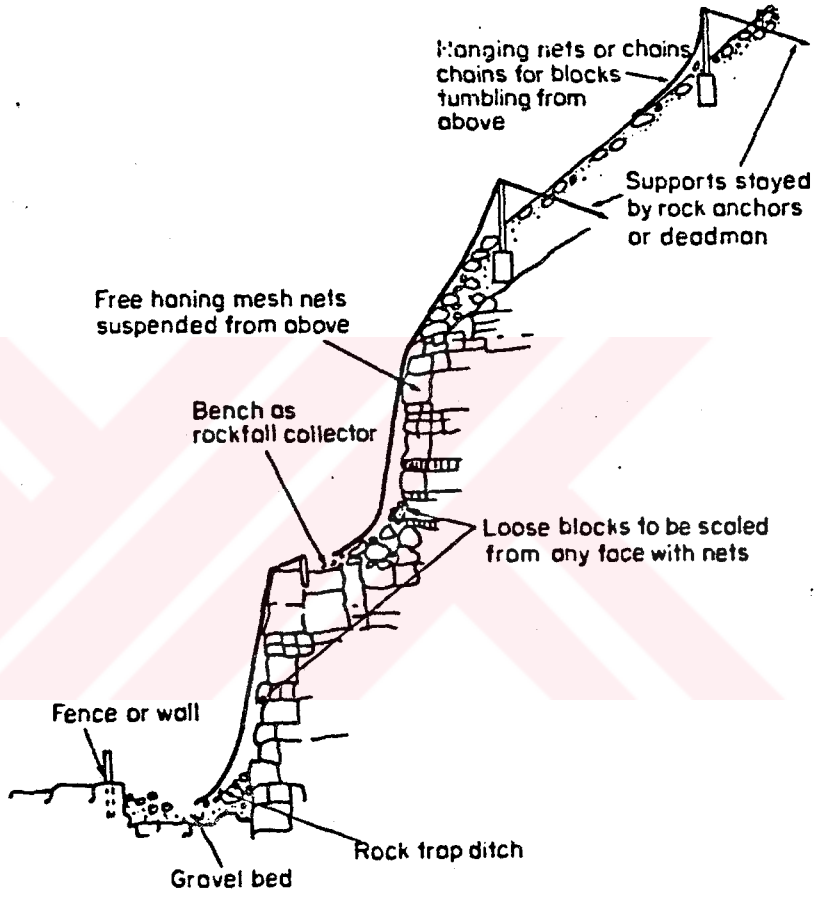


Fig.87. Rock traps

5.1.1.2. Reinforcement of Slopes

i) Dentitation is one of the methods which is achieved by infilling cracks or cavities (Fig.88). It is usually referred to masonry or concrete for dentitation purpose. The best material to form the slope for the masonry; is same kind of rock. This may be used after removing soft materials from cracks. Then drainage should be provided.

ii) Thin to medium bedded rocks parallel to the slope can be held in place by steel dowels, which are up to 2m. in length. These dowels are used where low loads are needed to increase stability and where the joint surfaces are not too rough.

iii) Rock bolts may be used as reinforcement to improve the stability of slopes excavated in jointed rock masses. They provide additional strength on critical planes of weakness within the rock mass.

iv) Rock anchors are used for major stabilization work,especially in conjunction with retaining structures. They may exceed 30m. in length.(45)

v) Retaining walls are often used where there is a lack of space for the full development of a slope. As retaining walls are subjected to unfavourable loading, a large wall width is necessary to increase slope stability, which means that they are expensive. Retaining walls are

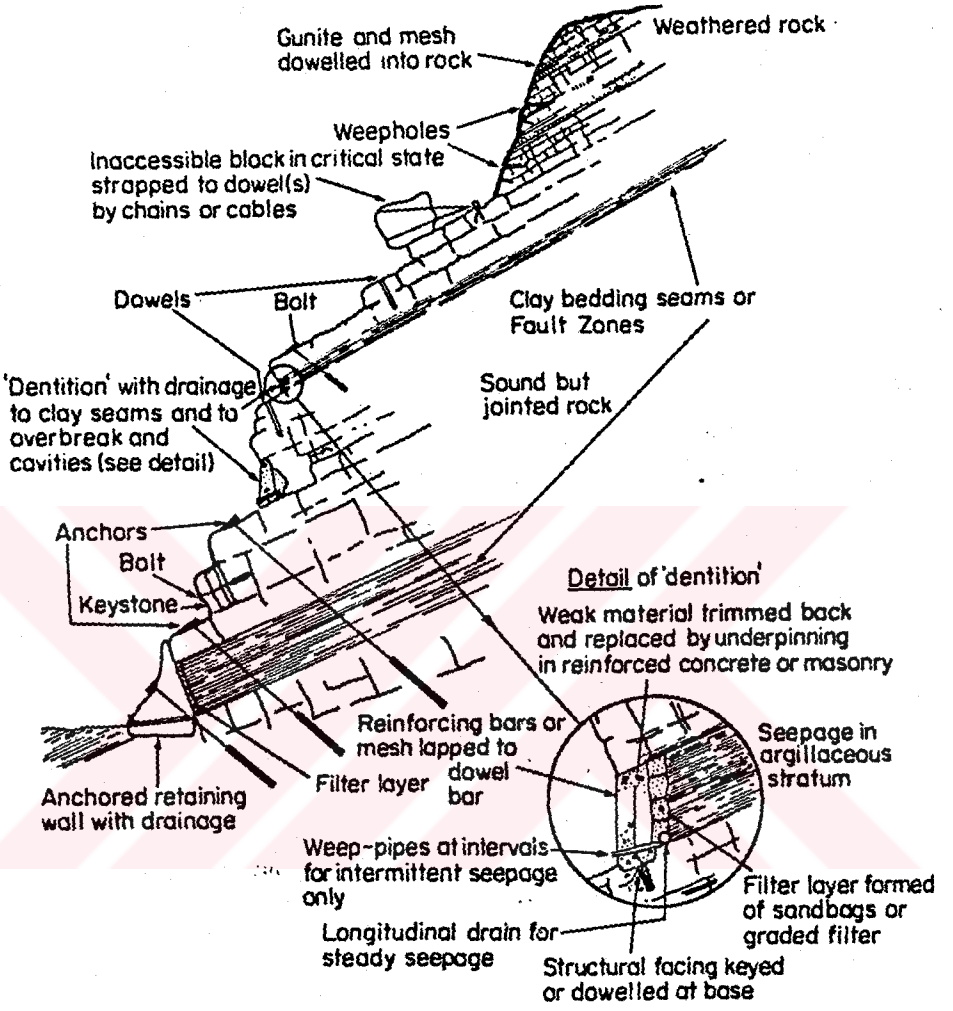


Fig.88. Dentitation

located at the foot of a slope and should include adequate provision for drainage.(46)

vi) Affostration may help stabilize shallow slides but it cannot prevent further movements occuring in large landslip areas. It can, however, lower infiltration. The most satisfactory trees are those which consume most water and have high transpiration rates, this means that decidious trees are better than conifers.(47)

5.1.2. The Drainage of the Site

The mass of water which originates in form of precipitation, causes deterioration of the buildings in Arycanda by penetrating deeply. The frost action initiates the deterioration process. Also, plants and microorganisms grow rapidly in a humid environment as a result of masses of water. The drainage of the excess water is a proper method to prevent the damages of water.

On the other hand, drainage is the most generally applicable method for improving the stability of slopes or for the corrective treatment of slides. Excess pore water pressure is the principal cause of instability and may be reduced by using correct drainage system. In rock masses, ground water also tends to reduce the shear strength along discontinuities.

In humid regions, the major source of the water that must be drained from the surface and from the subsurface

of the ground, originates in form of precipitation.Some of this precipitation occurs as snow whereas the major occurs in form of rain. The amount of falling rain takes an important place in determining the needs of drainage. Beside the importance of the total amount of rain, the rate also becomes important. The size of drainage channels which are needed is directly related to the rainfall and to the ability of the soil to absorb the moisture that falls on it. Drainage works which are designed for a certain storm, are usually of adequate size to handle any snow melt that might occur. Therefore, no additional work is performed in designing of a drainage system for snow.

5.1.2.1. Determining the Nature of Drainage System

The first step in the solution of any drainage problem, is to obtain information about the water tables, the type of soil,the topography, and other factors that will influence the design of a satisfactory drainage system.

The surface and the sub surface drainage systems are the most common methods that may be applied to solve the drainage problem. Type of drainage work depends on local conditions of site.

Subsurface Drainage : In this system, the drain is buried out of site, therefore it has the important advantage of not interferring landscape and plants. The materials used for subsurface drains include clay pipes in

short sections, concrete pipe in various lengths,blankets of gravel laid in the soil, fibrious wood materials such as willow branches buried in the soil, covered stone drains, bituminous fiber materials, plastic pipe, and others which can remain intact for a long time. The basic purpose of these drains is to collect the water that flows out of the soil, and to carry it into an outlet channel or conveyance structure .All of these subsurface drains are used for the same purpose regardless of the type of the materials.

Surface Drainage : Open channels are used for this type of drainage. They also serve as outlets for subsurface drainage and discharge the collected water into some natural channel which has capability of receiving. These channels should be lined to prevent erosion.(Fig.89).

Pumping : When the subsurface drainage system or open channels are not adequate to overcome the high water or flood, a pumping plant is required to discharge the excess water.

5.1.3. The Drainage of The Buildings

The drainage of the buildings in Arycanda is as important as the drainage of the field. The drainage system becomes so important especially for preventing the uncovered buildings from rainfalls.

The drains are excavated to protect buildings from surface and underground waters. They may surround the buildings or may be kind of network.The collected water in the drains can be transported by concrete pipes having perforated holes. The catch basins are constructed at the corners of the buildings. Big gravels on top of the concrete pipes, other gravels one level above big ones, are all located for the drainage purpose. In the drains constructed inside of the buildings, either by an uncovered channel water is discharged out of the buildings,or the principles of the outer drainage system may be applied. The base pavement is removed, and gravels are placed under it in such a form that can allow water passage. After placing of the concrete pipes for collecting water, the top is covered. Strained water from gravels is collected at some special points and discharged out of the buildings.(Fig.90)

5.1.4 Rubble Piles

Rubbles of the excavation are piled up in many places of the site which cause dangerous by sliding with rainfalls to the buildings in the lower terraces. Such problems are current for the bath-gymnasion complex from the rubbles in front of the tombs; for the odeon-stoa from the rubbles south western part of the theatre; and for the temple-basilica-church triple from the rubbles on the stairs near the stoa.

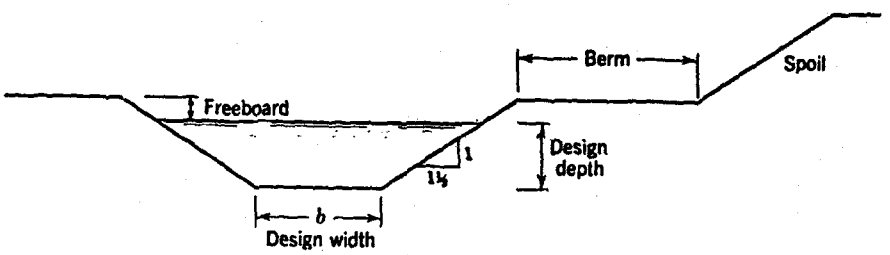


Fig.89. Surface drainage

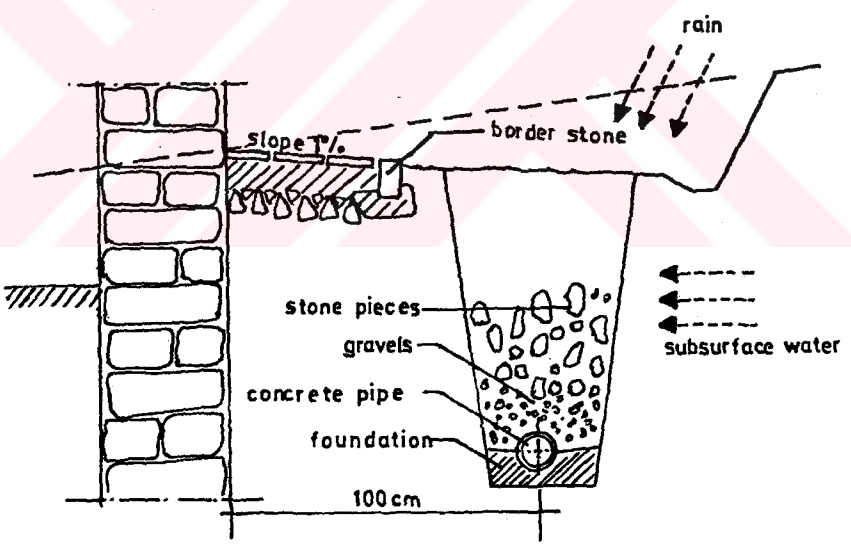


Fig.90. Building drainage

Rubbles also make the pedestrian circulation difficult for visitors, and disfigure the panaromic view of the antique city.

To prevent the danger of rubbles, they should be transported to a convenient place. Retaining walls may be used to prevent the sliding of rubbles which are located at the foot of slope.

Affostration, after scattering rubble piles to form shallow slides, may be used to prevent the sliding of rubbles. Also affostration helps the flourishment of the site.

5.1.5. Vegetation

The fertile soil and the humid climate cause to growing plants all over the site. Bushes and bushlike plants damage stones of the buildings if they are not cleaned from the crack, when they are small. The most exciting examples of this, is the western cavea of the theatre. The roots of a tree remove the seats of the theatre. The same thing is also seen in the stadion and the other buildings of the city.

To prevent the recent destruction of the plants, the cleaning must regularly be provided.

5.2 Infrastructure Problems

5.2.1. Road

Today, transportation to the antique city, Arycanda, is supplied by a narrow and stabilized road. The sharp curve in the entrance of the road does not allow the vehicles to turn easily. Beside, the road is as narrow as two vehicles can not run at the same time, holes very near or over the road cause the large vehicles not to pass. The maintenance of the road is required, even to bring the winch to the excavation field for using in restoration.

On the other hand, the number of visitors coming to Arycanda, has increased day by day. Therefore, the enlargement and renewal of the road must urgently be arranged.

This requires the improvement of the quality of the road immediately. Also in this case two possibilities exist :

a) First is; enlarging the curve in the entrance of the road so providing turns for visitor coming from Finike direction. After this, arranging a round space to allow easy turns to larger vehicles. Also enlarged area will be used to construct the superstructural requirements of visitors (e.g. restaurant, toilets, etc.). Finally, enlarging and asphalting the road which connects the city and the main road, (which has 1-1.5 km. length), so two

large vehicles can run easily at the same time (Fig.91/a).

b) Second is; constructing a new road from the flood bed to the main road if it is not possible to enlarge the road in the entrance. But in this case, the road must be passed through the gardens of the new and old schools. In addition to all these, superstructural possibilities lessen whereas they might be easily supplied in front of the old entrance (Fig.91/b).

5.2.2 Water

There is no water existing in the excavation field. The nearest spring is a fountain in the beginning of the road which is laying towards the city. The water channel passing from the south of the city cannot be used since it is located very below the city. The water requirement is supplied from either the fountain or the spring of Sugozu by carried water.

The water could be supplied from Sugozu by placing the pipes parallel to the road. The distribution network could be set in between Naltepesi and the bath-gymnasion complex. The water requirement of the other places can also be supplied from this network by pumping.

5.2.3. Electricity

While it is working about restoration of an antique city, there should also be considered establishment of

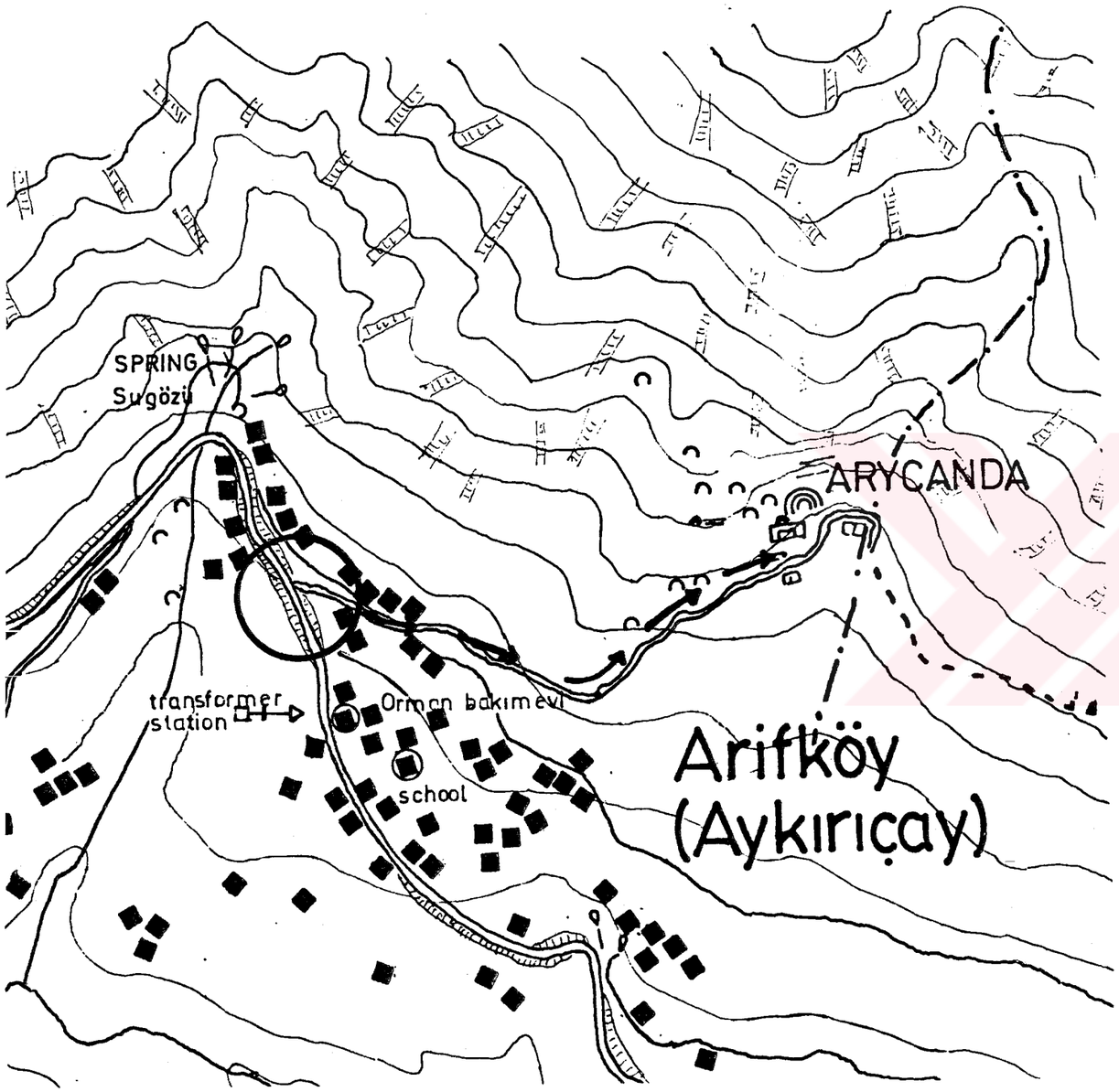


Fig.91/a

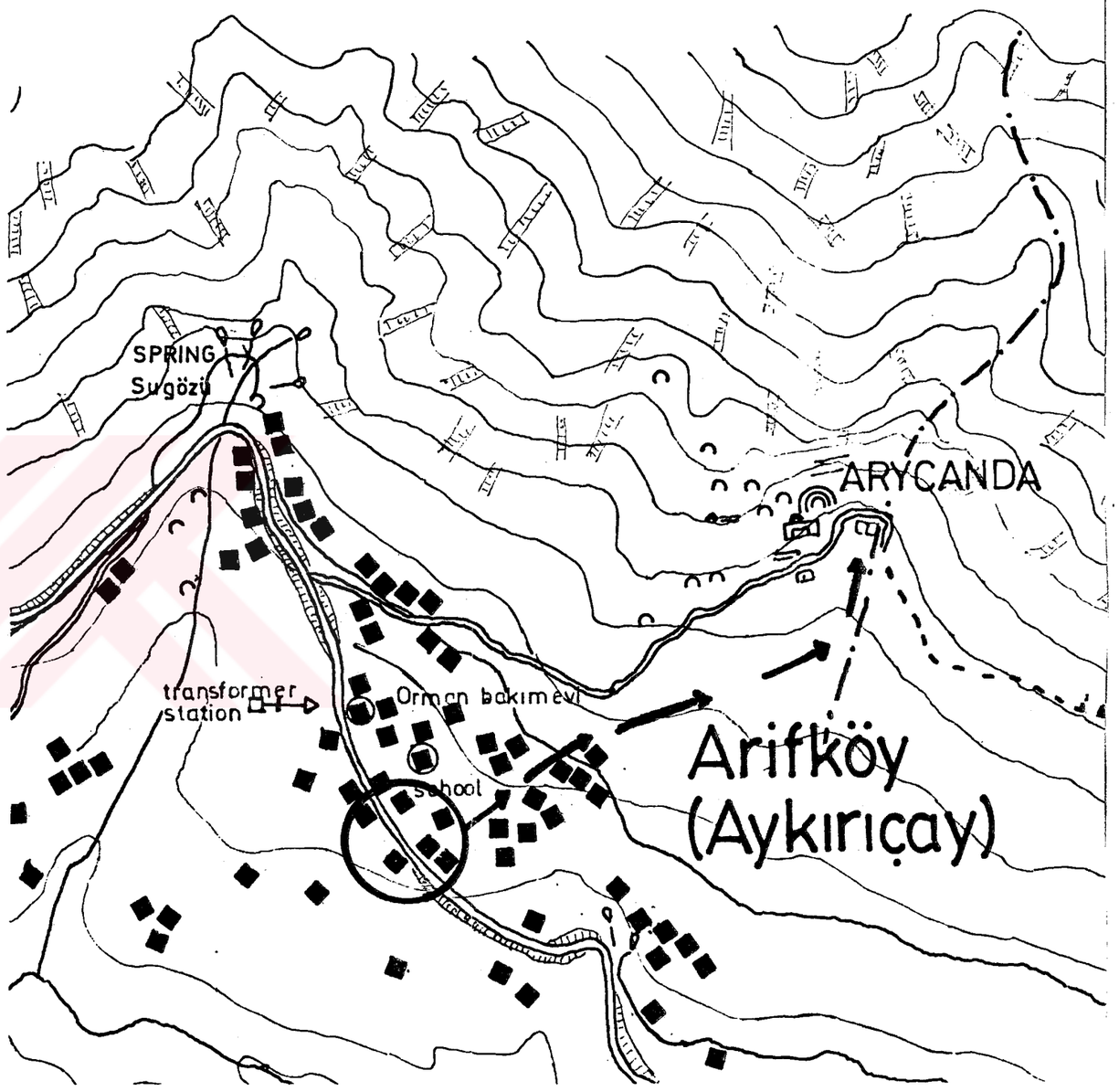


Fig.91/b

Transportation to Arycanda

electrical transmission and distribution systems. Because this is an important part of the site arrangement.Towers, cables, distrubution board, and transformer should not destroy general view of antique city. Safetiness and beautines are the primary considerations. Rebirth of an antique city can be supplied by a good site lighting.

The electricity requirement of Arycanda can be supplied from Arifkoy. High voltage towers set up a transmission line, with 100 m seperation. When electricity is transmitted until the entrance of the city, it is required to step-down high voltage to the line voltage. This can be supplied transformer. The location of transformer should be chosen near the parking space. Electricity can be transmitted to the upper parts by towers. Then, electricity can be distributted here all over the city from a distribution board. The city network can be feeded from here either by ground cables or by towers.

The suitable types of transformers will be discussed below as tower transformer, cast resin transformer, and kiosk transformer. The rating of distribution transformer must be prefered as 45 kVA in Arycanda.

1) Tower transformer is most common transformer which takes a place over tower. This also have some equipment with distribution board.

2) Cast resin transformer is expensive but protective. Resin and fibre are the base materials used. Its cell is proper to hide, and to instulate transformer from environment.

3) Kiosk transformer is another type which can be placed on the ground and covered by iron sheets. This should also not disturb the site view.

Electricity in the buildings can be supplied by the cables coming from underground, or air through towers. The best selection of course preferring underground cables since they are safe, not destructive the site view, and not effected from the environmental conditions. The location of underground cables must be parallel to the streets. Cables should be placed in either underground earth channels, or ceramic concrete pipe channels. They should be buried 40-50 cm. deep. Cables can be pulled out where they do not disturb the site view and the circulation of the visitors. Underground cables are tough against environmental conditions. But, it is hard to place and repair in hilly regions. Also they are much expensive.

Towers that erect between the parking space and the theatre should be from steel because easiness of erecting in rocky hills.

The road of towers should be nearly straight. Also environment of towers sholud be cleaned from trees to

provided safetiness.

In some cases there may be required some temporary plugs for restoration or illumination purposes. Antigron surface equipment should be chosen for this requirement. They are applicable in hunid and open places. Plugs canbe set up anywhere desired. Portable tables can feed these antigron surface equipments when temporary usage of electricity is required.

Illumination of the buildings is one of the important consideration of the site-lighting after electricity is supplied. But it is very difficult to set some opinions about the illumination of the buildings seperately before an electrical project is prepared. Especially, the bath-gymnasion complex and the theather can be illuminated by low pressure sodium vapor lamps which are the best equipments in the illumination of historical buildings because they do not cause to disappearance of details.

5.3. Materials Problems

5.3.1. Stone Conservation

Limestone is used as a construction material in the antique city, Arycanda. Since the material is easily corrosible, some particular restoration methods are needed to be used (Table 1). Especially, the stones of the theatre are very deteriorated. The limestones of the

theatre consist of randomly distributed micrite and sperite particles. A more detailed structure of lichens are seen on the surface of layer. Clay minerals are also in the vicinity, together with organic material. Decay around the crack surfaces is observed as recrystallization. (48)

In the first place, the stone conservation requires identification of the deterioration process. The whole sequence is viewed as a maintenance operation to be repeated after a given number of years rather than a restoration aimed to continue a long time (Table 2).

Deterioration of limestones is caused by :

.Physical degradation

.Chemical reactions

.Microbiological activity

.Physo-chemical mechanism, involving the recrystallization of soluble or semi-soluble salts without associated chemical change. (49)

The main factors which contribute to these reactions are usually indicated as erosion, action of water, temperature, and humidity changes, soluble salts and organic growth. (50)

The stone conservation process can be investigated under three main headings :

5.3.1.1 Cleaning :

The purpose of cleaning is to eliminate whatever is damaging the stone, principally; soluble salts, insoluble or sparingly soluble instructions, microorganism, parasitic vegetation, bird or animal droppings.

The stone pieces in an advanced state of deterioration can be damaged by cleaning; in such cases preventive consolidation is necessary in order to fix the instable areas.

There are no cleaning methods which can guarantee efficiency, or even less, only safety, regardless of how they are applied.

The suitable technique for any specific case must be therefore based on as wide a range of application trials as possible.

Water spray, absorbent clay packs, solvent jellies, precision grit blasting are advisable methods.

5.3.1.2. Consolidation :

1) Consolidation treatments should be employed only when the stone is in such advanced state of disintegration that the duration and stability of the object are in danger.

By consolidation treatment, the application of a consolidating material which is penetrating deeply into

the stone, improves its cohetion, its mechanical characteristics, and the adhesion of altered layers to the sound substratum (R.D.). One of the key points in the success of stone consolidation is deep impregnation. This can be achieved with either inorganic or organic (synthetic resins) products.

i) Inorganic Materials : They are more durable than organic, but they are also easy fragile and not very elastic. In addition, if they react with the components of stone, it is unlikely that they will penetrate very deeply.

ii) Organic Materials : Though more easily become different when exposed to light, organic materials, are generally more elastic than inorganic products and more effective in improving the treated stone's resistance to mechanical stress.

"No consolidant is absolutely preferable to another; product and application techniques will provide the most satisfactory improvement of the stone's "resistance". A series of laboratory tests is performed essentially for choosing the most suitable product for any given case. Any consolidation process should always be considered in close connection with the protection treatment to be applied successively." (52)

2) Adhesives and Fillers : Adhesives and filters

must be used when larger cracks exist. Fillers are generally prepared by mixing a binder with an inert material. Epoxy resins are most suitable as binder because of their high adhesive power and their mechanical characteristics; they also can be used in preparing fillers. But they are altered by the action of light and some atmospheric agents. Thus it must be used in the deepest areas of cracks and not exposed to the environment. Also it is possible to cover with an acrylic resin which is more light-stable product.

5.3.1.3. Protection :

When the consolidation has been carried out, some measures must be taken to avoid the subsequent deteriorations. They may be listed as :

a) Elimination or reduction of the source of enviromental deterioration is provided by :

i) Climatic protection

ii) Installation of permanent transparent shelters especially to provide protection from water.

b) Application of surface protection

i) Physical protection

ii) Chemical protection

This should offer some resistance, over a reasonable period of time. But durability must not be the

prime factor in the choice of material for the surface protection. The material should be removed or reapplied itself conveniently without damaging the substratum, when its protective powers have diminished or expired. (53)

c) Regular, appropriate maintenance : The restorative interventions should end with the establishment of a periodical inspection program so that proper preventive (cleaning, surface protection) or repair (localized consolidation, filling) measures can quickly be taken whenever the need arises. (54)

5.3.2. Mosaic Conservation

The important mosaic finds of the city are remained in the temple-basilica-church triple, which indicate two different periods. The top layer is 15cm. above the other, was removed in 1985 and consolidated with cement mortar. The early age mosaics which has colorfull decoration and partly well protected, were consolidated in-situ in 1987 for the conservation purpose.

Though the black colored tesserae are coroded more than the others, generally most are in a good condition. Cracks, bulges, and cavities arose in large mosaics because of decay of mortar. Additional roof of weeds springed up around forced tesserae and covered partly tops. The small parts of mosaics were consalidated by using natural resin, and the large parts were removed and

the supports were ensured.

The mosaics remained in the bath-gymnasion complex, lay in palaestra, are in a good condition. Their environment and deteriorated segments were consolidated by cement mortar.

The mosaics of the stoa are in a state of advanced deterioration.

The mosaics found in terrace-houses were cleaned in 1987, but the restoration has not started yet.

The big church, located in the east of the temple tomb, no.1, has not completely uncovered and a large layer of mosaics has existed inside.

Deterioration of mosaics is a product of physical, chemical, and logical agents. Mosaics are in a stable condition while they are laying underground. When they are uncovered, disintegration starts as a result of changing conditions.

The factors of mosaic deterioration could be examined in three headings (55) :

i) Disintegration of supports caused by :

- Decay of mortar
- Breaking and sinking
- Earlier restoration
- Atmospheric factors

ii) Disintegration of tesserae caused by :

. Wear

. Calcination

. Deterioration of stone

iii) Microbiological and plant troubles caused by :

. Seeding

. Lacunae

. Humidity

. Lighting

. Ventilation

Mosaics are conserved by transferring to the museums, or consolidated in-situ. Though it is better to conserve mosaics in-situ, for realizing their context and the characteristics of environments, sometimes it is necessary transferring to the museums because of the reasons as : cost, size of the area to be covered, problems of site itself, existing more than one layer, etc.

5.3.2.1. Transfering

. The area is cleared, cleaned from earth and plants covered and scaffolded.

. Stratigraphic and architecture data is collacted, 1/10 removal plan is prepared.

. A temporary cohesion system is chosen to reinforce the tessellated layer. Cotton cloth, fibreglass or a rigid system could be used to ensure the dimensional stability of the mosaics.

. Mosaics could be removed in one piece either a roller or a flat frame work mounted on rails, but most of the time it is cut and dismantle because of the site conditions, delay, economic reasons etc. Cutting most be done in relation to the mosaic and with absolute respects for the figured design.

. When it is lifted from the ground, the last sign of the old support are cleared.After ensuring the cohesion of the tesserae,it is transferred onto a new support(temporary).It could be preffered epoxy resin mortar reinforced with fibreglass for the primary layer.

. The mosaic sections are stabilized, then it is transferred onto permanent support (the sandwich structures are offered).

. After restitution of lacunea merits has been made, the last step is treatment and / or polishing the mosaic surface. (56)

5.3.2.2. Conservation in-situ

. After cleaning the mosaics, to reinforce the tesellated layer; a temporary cohesion system is applied.

. Two methods could be applied for conselidation of support:

- By injection: Injections of liquid cement would be made to prevent the formation of bulges and cracks. This process is used generally because of economical

reasons but it causes irreversible damages to the mosaics, the epoxy resins could be used for this process.

- By lifting: When mosaic layer is lifted, the old support is cleaned from the mosaic and it is transferred to the renewed support on the ground.

. To avoid plant troubles, it is used proper herbicides.

. The mosaic surface must be protected against bad wheather by covering it with a layer of sand 5 cm. thick.

. A drained should be placed below the base support.

. A shelter system could be used to cover and protect the mosaics.

. An elevated walkway is used for visiting.

5.3.3. Stucco

In the bath-gymnasion complex, it has remained marble imitation mortars up to 1.5 m. on the niches placed in the west wall of the frigidarium. Changing wheather conditions caused to partly falling pieces.

Deterioration of the stucco is caused by physical, chemical and biological agents which initiates their effects when it is brought to light. The presence of water helps these agents to dissolve and redeposite salts, to form surface concretions, and to make possible both plant

and animal life.

When they are exposed to climatic changes; variations in humidity,temperature and light, and deteriorations from vandalism, flora fauna, are all added.

Safeguard and protection of the site, protection from water, diverting and draining it, are the first interventions.

The initial cleaning involves the removal of earth, light concretions and plant growth.

The immediate extraction of soluble salts is useful to prevent their disintegration during the drying phase.

The consolidation, achieved by applying the synthetic consolidant materials, will improve the mechanical characteristics of rendering.

A shelter system could be used to cover and protect them.

5.4.Superstucture Requirements

When Arycanda is considered with the other neighbor antique cities it is realized that it takes a place in a rich historical context. Since the antique city is located very close to Finike and Elmali, also to road passing beside, transportation is easily supplied. Arycanda is administrively connected to Finike where

tourism has just begun to develop rapidly. Finike is a daily stop of passengers who are travelling between Antalya and Bodrum.

The region between Antalya and Çıralı (Yanartaş) -at the east of Finike- has been comprised by Güney Antalya Turizm Projesi which will be finished in 1990 and contained 42000 beds. Though the project has not included Finike, the number of tourists will surely be risen. As a result of this motion, the antique cities; Arycanda, Limyra, Corydalla, will also be stops of tourists.

A great rise in the number of people who visit Arycanda, cause the rising of earnings of the peasants. An open market set up at Sugozu, a bakery just down the market, and a restaurant of the town are all located as a trade center of Arifkoy with the advantages of being woody, located just near the stream and beside the main road.

An increase in the numbers of visitors has brought the necessities as taking under control the entrance of the city, constructing watchman house, information house, buffet, and toilets. Also spaces are needed for the buildings as restaurant, shops and resting seats and areas.

Some parts of the superstructure requirements should be applied at the antique city as watchman house, information desk, buffet and toilets. But it is better

that to take the extensive necessities out of the city towards the entrance and Sugozu. At the south of the road there may permit the only one floor buildings.

5.4.1. The control gate :

The best point that can control entrance, is the intersection point of the road and natural border at the best. This house may be surrounded by small plants which can create a nice view at the entrance. But, there needs a widened space beside the road for this purpose. The rocks below the road are a good place to construct control gate.

5.4.2. Information house :

A part of the bath-gymnasion complex can be restored in form of information house where people can rest, have some drinks, and be informed. Its palaestra can be changed such a green and shady place. The bath-gymnasion complex can also be arranged as a museum.

5.4.3. Museum :

Bath-gymnasion copmlex is apropriate to carry the requirements of museum with its attractive construction. The building is a museum itself. Also it is used as a recreational area and open-air museum at the palaestra beside the function of museum (Table 3).

5.4.4. Open-air museum :

Big pieces which can not be exhibited in museum, can be arranged in the agora and the stoa as an open-air museum. This approach will change the configuration of the coulumn capitals, architraves, coulumns and freezes.

5.4.5. Toilets :

This need can be supplied in the bath-gymnasion complex as the others to provide the necessary integration.

The bath-gymnasion complex will be the center of Arycanda, where many of the superstructure necessities are supplied. But, for arranging all these, it is required that arranging the rubble piles in front and beside the flood bed, and growing some plants and flowers to make this building more attractive (Table 4).

5.4.6. Storage :

Some sound parts of the tomb buildings can be used for the storage of the unusing pieces with iron railings. The other pieces can be stored in the old primary school as now.

5.4.7. Sheltering :

Mosaics must be protected from direct sunlight and rain. The functional sheltering system must be applied

especially to the mosaics of Roman villa and temple-basilica-church triple. The shelters must not be pretendious and not to detract the natural character of the site with their color and low height.

The light-weight structural frames can be used to span over the mosaics.

The other superstructure necessities as restaurant, shops, and markets could be placed at Sugozu and its environment.

5.5. Site Arrangement

5.5.1 Fencing :

To protect the antique city from animals and foreigners who may damage to the remains, the borders of the city must be determined.

Arycanda is surrounded from the north, the east and the west with cliffs by natural borders. The northern border is Sahinkaya, and the other two are the results of cliffs. The southern border is a manmade construction which is the road of the city. Arycanda will be protected by fencing coming from the controlgate, including Saraphane and Naltepesi, and ending at the eastern natural cliff.

There will exist a great fall of altitude during the enlargement of the road at the south. But, it is required

a fence as well as animals cannot jump over between Saraphane and the eastern border.

Manmade fencing should only be used in the places where fencing cannot destroy the general view of the site. For the others, natural fencing should be prepared.

5.5.2. Pedestrian network :

Less perception of the buildings and the traceability of the roads are the two important problems of Arycanda. The dispersed population, the woody and hilly land, are all caused to disintegration of the buildings from each other (Table 5).

It is required an arrangement of pedestrian network to overcome this problem and to provide the necessary connections. Traces should be prepared as shortcuts and not to tire the visitors.

Long and short paths for the visitors can be proposed. Starting and finishing point will be Naltepesi.

5.5.3. Signs :

1) Informative signs; which give the information about the city and the buildings, are placed at most visible points of the buildings. But, they must not be precious with the buildings. The restitution drawings will also be placed on the signs.

The informative sign about the city could be placed at Naltepesi which is the starting point, and at the bath-gymnasion complex. This sign must include the site plan of the city and the circulation paths.

2) Regulatory signs which are related with the circulation paths, must be placed at the visible points of the paths. They could be either panels or signs on the stones.

3) Warning signs give information about the obeying rules. It could be placed at a proper point of the parking place.

5.5.4. Parking area :

The widened road in front of Naltepesi, could be used as a parking space by the enlargement and the arrangement of this area. The cars should not be allowed to run through the city.

5.5.5. Landscape restoration :

Landscape project shold be appropriate for the site conditions and while also directing visitor flow through the site, should not be destructive for the site. Esthetic point of view should also be considered as well as the scientific approach. New interventions and materials should be in harmony with the old ones.

There should care about the selection of plants not to cause any harm. The landscape project should be prepared such as to overcome the monotonality, and some resting places should be placed in such manner watching the panorrama is possible.

The water features can also be provided to the effectiveness of site presentation.

5.6. Final Remark :

Archaeological site conservation and restoration require more detailed planning and coordination of multi disciplinary approach. Archaeological site preservation and presentation will only impove by successful application of new expriences and knowledges.

Conservation and restoration efforts can never be permanemt measure in themselves since the deterioration is a never ending process. Therefore the maintenance is an essential part of preservation of archaeological sites.

	CLEARING	CONSOLIDATION	DRAINAGE	SITE ARRANGEMENT
TERRACE HOUSES		○		
NALTEPESİ		○	○	○
BATH-GYMNASION		○	○	○
SMALL BATH	○	○	○	○
TEMPLE - BAS. - CHUR.	○	○	○	
E. NECROPOLIS	○	○		○
STADION	○	○	○	
THEATER	○	○	○	
ODEON				
STOA				○
AGORA			○	○
BOULEUTERION			○	
UPPER STOA				
UPPER BATH	○	○		

Table 1. The Problems of the Buildings

	PARTLY ANATYLOSIS	ANASTYLOSIS	REHABILITATION	LIBERATION	SHELTERING	CAPPING	RECONSTRUCTION	RESTORING	TRASFERING
TERRACE HOUSES					○	○			
NALTEPESİ		○	○			○			
BATH-GYMNASION		○			○	○	○	○	○
SMALL BATH			○			○			
TEMPLE-BAS.-CHUR.	○			○	○	○		○	○
E.NECROPOLIS		○					○	○	
STADION								○	
THEATER		○				○		○	
ODEON			○						
STOA								○	
AGORA								○	
BOULEUTERION		○	○						
UPPER STOA		○							
UPPER BATH		○				○		○	

Table 2. The Interventions to the Buildings

	CLOSE SPACE USAGE	OPEN SPACE USAGE	REACHABILITY 1	REACHABILITY 2	KNOWLEDGE	IN A GOOD STATE	EVEN UPPER STR.	COMPLETIBILITY	RELATIONSHIP 1	RELATIONSHIP 2	PANORAMIC VIEW	PERCEPTIBILITY 1	PERCEPTIBILITY 2	REQUIRE INTERVEN.
TERRACE HOUSES	○										○			
NALTEPESİ	○	○	○						○			○		
BATH-GYMNASION	○	○	○		○	○		○	○		○	○		○
SMALL BATH	○			○						○				○
TEMPLE-BAS.-CHUR.				○						○			○	○
E.NECROPOLIS	○		○		○	○	○	○	○		○	○		
STADION		○		○										
THEATER	○	○	○		○						○			○
ODEON			○		○	○								
STOA		○	○							○	○		○	
AGORA		○	○							○	○			
BOULEUTERION						○				○	○			
UPPER STOA		○								○	○			
UPPER BATH	○					○					○			○

Table 3. The Reasons of the Refunctioning

	VISITING	RECREATION	INFORMATION	MUSEUM	CULTURAL (concert etc.)	STORAGE	OPEN AIR MUSEUM
TERRACE HOUSES	○						
NALTEPESİ	○						
BATH GYMNASION	○	○	○	○			
SMALL BATH	○						
TEMPLE-BAS.-CHUR.	○						
E.NECROPOLIS	○					○	
STADION	○						
THEATHER	○				○		
ODEON	○				○		
STOA	○	○					○
AGORA	○	○					○
BOULEUTERION	○						
UPPER STOA	○						
UPPER BATH	○						

Table 4. The Uraga of the Buildings

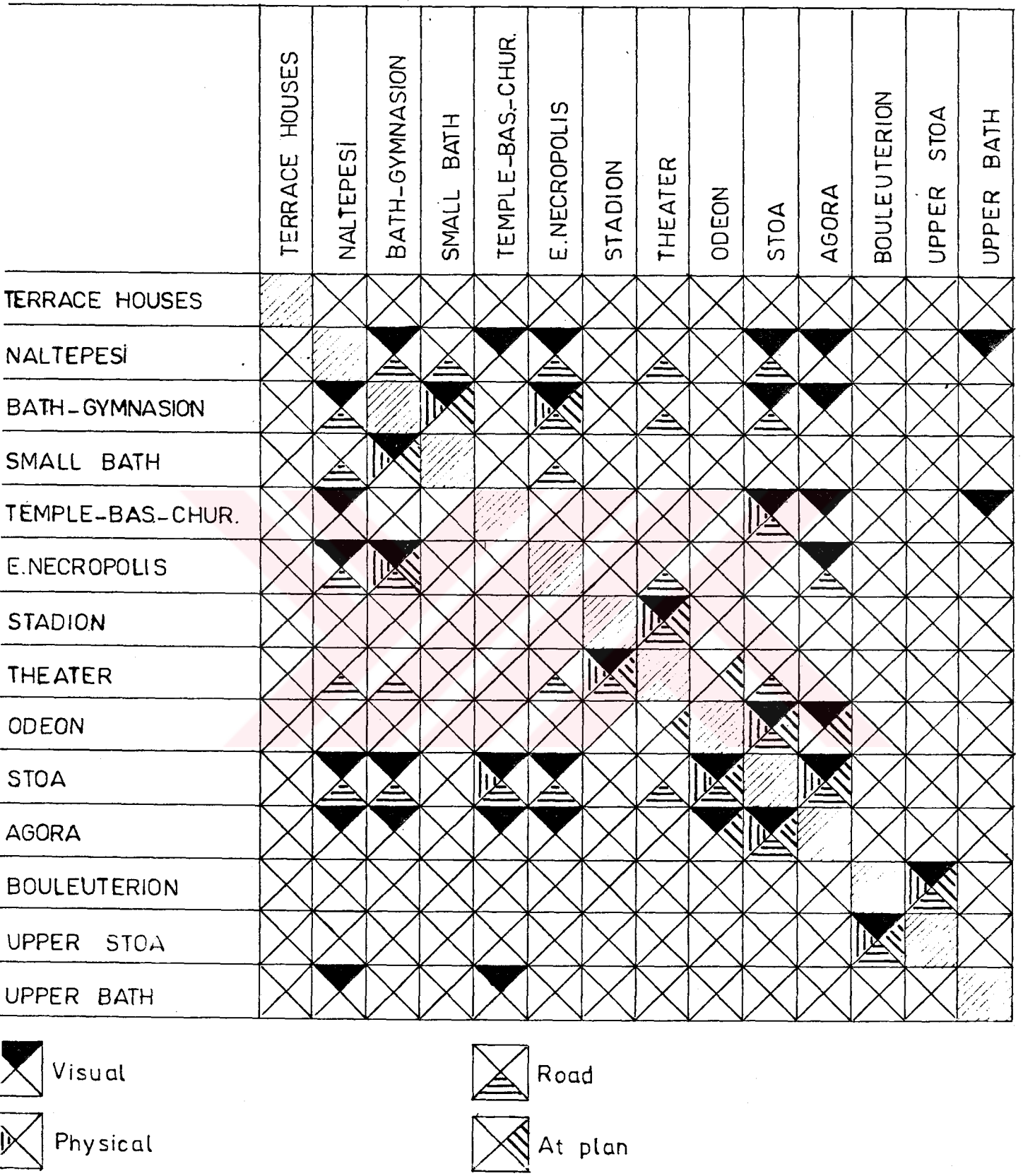


Table 5. The Relationship of the Buildings with Eachother

FOOTNOTES

1. Cevdet Bayburtluoglu; Arkeoloji

2. Halikarnas Balikçisi; Hey Koca Yurt

3. Guven Arsebuk; Dünden Bugune Arkeoloji

4. Cevdet Bayburtluoğlu; Arkeoloji

5. Aziz Oğan; Asar-i Atika Nizamnamesi ve 1874 den Itibaren Resmi Ruhsat ile Yapilan Hafriyat,madde 3 ve 32

6. Ibid.

7. Remzi Oğuz Arik; Türk Müzeciliğine Bakiş

8. Sumer Atasoy; Türkiye'de Muzecilik

9. Recommendation on International Principles Applicable to Archaeological Excavations

10. The tenth session assembled at May, 1988

11. Melih Cevdet Anday; Yurdun Tarihini Tanimayanlar, Cumhuriyet, 27 May, 1988

12. Yucel Gursel; Tarlabasi Yikiminin Perde Arkasi

13. Keban Baraj Golu Bolgesinde Yapilan Arkeolojik Kurtarma Calismalari; Cumhuriyet Donemi Turkiye Ansiklopedisi

14. Dieter Mertens; Planning and Executing Anastylosis of Stone Buildings

15. Ibid.

16. Ibid.

17. Oktay Aksit; Likya Tarihi

18. The migration of Lycian from Crete to Anatolia, is prooved that the kindship with the Luwian, were the Anatolian native nation, the suffixes (-nd, -nt) and (-ss) are found at the place names in Lycia which is

dated third millenium B.C.

19. I. Akan Atila; Likya Lahitleri

20. Cevdet Bayburtluoglu; Likya

21. Oktay Aksit; Likya Tarihi

22. Homeros; Iliada II. 876-877, X. 430, XII. 315-438, XIV. 659-662

23. Cevdet Bayburtluoglu; Likya

24. Ibid.

25. Ibid.

26. Ibid.

27. Ibid.

28. I. Atila Akan; Likya Lahitleri

29. Cevdet Bayburtluoglu; Likya

30. Ibid.

31. Ulgur Onen; Lycia

32. Cevdet Bayburtluoglu; Likya

33. Ibid.

34. Ibid.

35. Ibid.

36. Ibid.

37. Ibid.

38. I. Atila Akan; Likya Lahitleri

39. Ibid.

40. Oktay Aksit; Hellenistik ve Roma Devrinde Likya

41. See also Kazi Arastirmalari Toplantisi for Details

42. A. M. Ritchie; The Evaluation of Rock Fall and Its Control

43. Ibid.

44. Ibid.

45. M. Baxter; Reinforced Earth

46. Ibid.

47. Ibid.

48. E. N. Caner; Factors Affecting the Deterioration of Limestones from Historic Monuments in Anatolia

49. Ibid.

50. Ibid.

51. P. Rossi-Doria; Note on Conservation Treatment of Stone Objects

52. Ibid.

53. Ibid.

54. Ibid.

55. C. Bassier; Some Problems in the Conservation of Mosaics

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GLOSSARY

ACROPOLIS : 1) The elevatedstrongholdof a Greek city, usually with the temple of the patron city ; 2) Any elevated group of buildings serving as a civic symbol.

AGORA : The chief meeting place or market-place in an ancient Greek city.

ACANTHUS : A common plant of the Mediterranean, whose leaves, stylized, form the characteristic decoration of capitals of Corinthian and Composite orders. In scroll form it appears on friezes, panels, etc.

ACROTERION, ACROTER, ACROTERIUM : 1) Strictly, a pedastal at the corners or peak of a roof to support an ornament ; 2) More usually, the ornament itself.

ALTAR : 1) An elevated table, slab or structure, often of stone, rectangular or round, for religious rites, sacrifices, or offerings ; 2) The Communion table in certain churches.

ANALEMMA : 1) A retaining wall at the side of an ancient Greek or Roman theatre ; 2) Any raised construction which serves as a support or rest, as a buttress, pier, foundation, or one wall which supports another.

ANTA : A pier or plaster formed by a thickening at the end of a wall, its capital and base differ from those of the columns forming part of the same order. Antae often occur in pairs beyond the faces of the end walls. The columns are said to be in antis.

AMPHITHALAMOS : In ancient architecture, a chamber opposite the main bedchamber and seperated from it by a passage way.

APODYTERIUM : A room in the Greek or Roman baths, or the palaestra, where the bathers or those taking part in gymnastic exercises undressed and dressed.

ARCHITRAVE : 1) In the classical orders, the lowest member of the entablature; the beam that spans from column to column, resting directly upon their capitals. 2) The ornamental moldings around the faces of the jambs and lintel of a doorway or other opening; an antepagment.

ASHLAR MASONRY : Masonry composed of rectangular blocks.

BASILICA : 1) A Roman hall or justice, typically with a high central space lits by a clerestory and lower aisles all around it, and with apses or exedrae for the seats of the justice ; 2) The form of the early Christian church, a high central high nave with clerestory, lower aisles along the sides only, a semicircular apse at the end. Often preceded by a vestibule (narthex) and atrium. In larger basilicas, there are often transepts, and sometimes five aisles.

BOULEUTERION : In ancient Greece, a place of assembly, especially for a public body.

CALIDARIUM : The vapour bath or hot plunge in Roman baths.

CAVEA : 1) The semicircular, tiered seating area of an ancient (especially Roman) theatre ; 2) The dens of the wild beasts, which were confined under the seats of the ancient Roman amphitheatres, to be in readiness for the combats on the arena.

CELLA : The sanctuary of a classical temple, containing the cult statue of the god.

CERCIS : The wedge-like or trapezoidal section of seats between two of stepped passageways in a Greek theater.

CORINTHIAN ORDER : The slenderest and most ornate of three Greek orders, characterized by a bell-shaped capital with volutes and two rows of acanthus leaves and with an elaborate cornice.

CREPIDOMA : The base courses (a stepped platform) of a (esp. Greek) temple. (Also see stylobate)

CUNEIFORM : Having a wedge-shapen form; esp. applied to characters, or to the inscriptions in such characters, of the ancient Mesopotamians and Persians.

DIAZOMA : The wide horizontal walkway between the lower and upper tiers of seats in a Greek theater.

DORIC ORDER : The column and entablature developed by the Dorian Greeks, sturdy in proportion, with a simple cushion capital, a frieze of triglyphs and metopes, and mutules, in the cornice.

DROMOS : The long, deep entrance passageway to an ancient Egyptian tomb or a Mycenaean beehive tomb.

DRUM : One of the cylindirical sections or courses of a column shaft; also used of a cylindrical wall interrupting a conical roof and raising its central position.

EPHEBEUM, EPHEBEION : In a palaestra a hall set aside for youths.

EXEDRA, EXHEDRA : 1) A large niche or recess, usually with a bench or seats, semicircular or rectangular in plan and either roofed or unroofed; 2) In a church, a large apsidal extension, normally on a main axis; 3) An alcove, or semicircular extension of the colonade, in a Greek gymnasium; furnished with seats on which the philosophers usually sat to talk with their disciples; 4) In ancient Greek houses, a room intended for conversation, with a

bench running around the wall; 5) In a public place in the open air, a permanent bench having a high, solid back which is semicircular (or nearly so) in plan.

FRIEZE : The middle horizontal member of a classical entablature, above the architrave and below the cornice.

FRIGIDARIUM : 1) The cold section of a Roman bath, sometimes including a swimming pool (piscina); 2) In an ahenum, the uppermost boiler, which was filled directly from the cold cistern and was completely removed from the heat of the furnace.

FURNIO : A vapor bath, as distinguished from an ancient bath.

GYMNASIUM : In Greek and Roman architecture, a large open court for exercise, surrounded by colonnades and room for massage, lectures, etc.

GYNAEKONITIS, GYNAECEUM : The part of a Greek house or a church reserved for women.

HEROON : A building or sacred enclosure dedicated to a hero, usually erected over a grave.

HYPOCAUST : A central heating system of ancient Rome; hot gases from a furnace were conducted to rooms above, through a hollow floor and through tile flues within walls.

IONIC ORDER : The classical order of architecture, originated by the Ionian Greeks, characterized by its capital with large volutes, a fasciated entablature, continuous frieze, usually dentils in the cornice, and by its elegant detailing, less heavy than the Doric, less elaborate than the Corinthean.

LACONICUM : The sweatroom in a Roman bath; the semicircular end of the calidarium.

MEGARON : A long narrow, isolated house consisting of one front-room as entrance and a hall with a hearth in the middle.

NADS : The inner sonctuary of a temple. It is also used as equivalent of cella.

NARTHEX : An enclosed porch or vestibule at the entrance to some early Christian churches.

NATATIO : A swimming pool at the courtyard in Roman Baths.

NECROPOLIS : 1) A city of the dead; a large cemetery in Ancient Egypt, Greece, Phoenicia, Carthage, etc.; 2) An ancient or historic burial place.

NYMPHAEUM : A building dedicated to the nymphs; a large chamber, decorated with columns, statues, and pictures and having a stream of spring water gushing from a fountain at its center, providing a cool and pleasant retreat.

ORCHESTRA : 1) In the early Greek theatre, the place occupied by the dancers and chorus about the altar of Dionysus; later the circular space reserved for the dancers and chorus, between the proscenium and auditorium; 2) In the early Roman theatre, a semicircular level space between the stage and the first semicircular rows of seats, reserved for senators and other distinguished spectators.

ORTHOSTAT : One of many large stone slabs, set vertically as a revetment at the lower part of the cella in a classical temple, or at the base of a wall in the ancient architecture of Anatolia, northern Syria, and Assyria.

PALAESTRA : A Greek or Roman building for athletic training, smaller than a gymnasium, consisting of a large square court with colonnaders, rooms for massage, baths, etc..

PARADOS : One of the lateral or main entrances to the orchestra of the theatre, often an irregular passage left between the auditorium and the scene building.

PARASCENIUM : A wing-like projection extending forward, at the ends of the scene, in ancient Greek theatres.

PEDIMENT : The triangular termination of a ridge roof, including the tympanon (the triangular wall of the pediment) and the raking cornice above.

PERISTYLE : 1) A collonade surrounding either the exterior of a building or an open space eg. a courtyard. 2) The space so enclosed.

PILASTER : 1) An engaged pier or pillar, often with capital and base. 2) Decorative features that immitate engaged piers but are not supporting structures, as a rectangular or semicircular member used as a simulated pillar in entrances and other door openings and fireplace mantels; often contains a base, shaft, and capital; may be constructed as a projection of the wall itself.

PISCINA : A pool or basin of water in Roman bathrooms.

PLINTH : 1) A square or rectangular base for column, pilaster or door framing; 2) A solid monumental base, often ornamented with moldings, bas reliefs, or inscriptions, to support a statue or memorial; 3) A recognizable base of an external wall, or the base courses of a building collectively, if so treated as to give the appearance of a platform.

PORTICO : Collonade or stoa.

PROSKENION : In the ancient Greek theatre, a building before the scene; the earliest high Hellenistic stage; later, the front of the stage.

PROPYLON : A monumental gateway, usually between two towers in outline like truncated pyramids, of which one or a series stood before the actual entrance or pylon of most temples or other important buildings.

PRYTANEION (PRYTANAEUM) : The administrative building of a Greek city, containing the perpetual fire.

SARCOPHAGUS : An elaborate coffin for an important personage, of terra-cotta, wood, stone, metal, or other material, decorated with painting, carving, etc., and large enough to contain only the body. If larger, it becomes a tomb.

SCENE : A temporary building or booth of players behind the acting area in the ancient theatre; later the permanent back building of theatre.

STADION : 1) A sports arena, usually oval or horseshoe-shaped; 2) An ancient Roman measure of length equal to 185 m.

STOA : A portico, usually detached, often of considerable extent, providing a sheltered promenade or meeting place.

STYLOBATE : 1) Strictly, the single top course of the three steps of the crepidoma upon which the columns rest directly; 2) Any continuous base, plinth, or pedestal, upon which a row of columns is set.

TEPIDARIUM : In ancient Roman baths, a room of moderately warm temperature.

TESSERAE : A small squarish piece of colored marble, glass, or tile, used to make mosaic patterns, either geometric or figurative.

THAMALOS, THALAMIUM : In early Greek architecture, an inner room or chamber, especially the women's apartment or the master bedroom.

THEATRON : The seating place or auditorium of the Greek theatre and the consequently the theatre as a whole.

THYMELE : In the orchestra of an ancient Greek theater a small altar dedicated to Bacchus; usually at the center of the orchestra circle and marked by a white stone.

THYROMA : Of an ancient house, a door which opens on the street.

THYRORION (THYROREUM) : Of an ancient Greek house, a passageway leading from the entrance to the peristyle.

TUBULATIO : To provide circulation in hypocaust, channels or brick ducts placed in walls.

APPENDIX A

Recommendation on International Principles Applicable to Archaeological Excavations New Delhi, 5 December 1956.

The General Conference of the United Nations Educational, Scientific and Cultural Organization, meeting at New Delhi, from 5 November to 5 December, at its ninth session,

Being of the opinion that the surest guarantee for the preservation of the past rest in the respect and affection felt for them by the peoples themselves, and persuaded that such feelings may be greatly strengthened by adequate measures inspired by the wish of Member States to develop science and international relations,

Convinced that the feelings aroused by the contemplation and study of works of the past do much to foster mutual understanding between nations, and that it is therefore highly desirable to secure international co-operation with regard to them and to further, in every possible way, the fulfilment of their social mission,

Considering that, while individual States are more directly concerned with the archaeological discoveries made on their territorty, the international community as a whole is nevertheless the richer for such discoveries,

Considering that the history of man implies the knowledge of all different civilizations; and that it is therefore necessary, in the general interest that all archaeological remains be studied and, where possible, preserved and taken into safe keeping,

Convinced that it is highly desirable that the national authorities responsible for the protection of the archaeological heritage should be guide by certain common principles which have been tested by experience and put into practice by national archaeological services,

Being of the opinion that, though the regulation of

excavations is first and foremost for the domestic jurisdiction of each State, this principle should be brought into harmony with that of o liberally understood and freely accepted international co-operation,

Having before it proposals concerning international principles applicable to arhaeological excavations, which constitute item 9.4.3 on the agenda of this session,

Having decided, at its eight session, that these proposals should be regulated at the international level by way of a recommendation to Member States,

Adopts, this fifth day of December 1956, the following

Recommendation:

The General Conference recommends that Member States should apply the following provisions by taking whatever legislative or other steps may be required to give effect, within their respective territories, to the principles and norms formulated in the present Recommendation.

The General Conference recommends that Member States should bring the present Recommendation to the knowledge of authorities and organizations concerned with archaeological excavations and museums

The General Conference recommends that Member States should report to it, on dates and in a manner to be determined by it, on the action which they have taken to give effect to the present Recommendation.

I. Definitions

Archaeological excavations

1. For the purpose of the present Recommendation, by the archaeological excavations is meant by the research aimed at the discovery of objects of archaeological character, whether such research involves digging of the ground or systematic exploration of its surface or is carried out on the bed or in the sub-soil of inland or territorial waters of a Member State.

Property protected

2. The provisions of the present Recommendation apply to any remains, whose preservation is in the public interest from the point of view of history or art and architecture, each Member State being free to adopt the most appropriate criterion for assessing the public interest of objects found on its territory. In particular, the provisions of the present Recommendation should apply to any monuments and movable or immovable objects of archaeological interest considered in the widest sense.

3. The criterion adopted for assessing the public interest of archaeological remains might vary according to whether it is a question of the preservation of such property, or of the excavator's or finder's obligation to declare his discoveries.

(a) In the former case, the criterion based on preserving all objects originating before a certain date should be abandoned, and replaced by one whereby protection is extended to all objects belonging to a given period or of a minimum age fixed by law.

(b) In the latter case, each Member State should adopt for wider criteria, compelling the excavator or finder to declare any object, of archaeological character, whether movable or immovable, which he may discover.

II. General principles

Protection of the archaeological heritage

4. Each Member State should assure the protection of its archaeological heritage, taking fully into account problems arising in connexion with excavations, and in conformity with the provisions of the present Recommendation.

5. Each Member State should in particular:

(a) Make archaeological explorations and excavations subject to prior authorization by the competent authority;

(b) Oblige any person finding archaeological remains to declare them at the earliest possible date to the competent authority;

(c) Impose penalties for the infringement of these regulations;

(d) Make undeclared objects subject to confiscation;

(e) Define the legal status of the archaeological sub-soil and, where State ownership of the said sub-soil is recognized, specifically mention the fact in its legislation;

(f) Consider classifying as historical monuments the essential elements of its archaeological heritage.

Protecting body: archaeological excavations

6. Although differences of tradition and unequal financial resources make it impossible for all Member States to adopt a uniform system of organization in the administrative services responsible for excavations, certain common principle should nevertheless apply to all national archaeological services:

(a) The archaeological service should, so far as possible, be a central State administration-or at any rate an organization provided by law with the necessary means for carrying out any emergency measures that may be required. In addition to the general administration of archaeological work, this service should co-operate with research institutes and universities in the technical training of excavators. This body should also set up a central documentation, including maps, of its movable and immovable monuments and additional documentation for every important museum or ceramic or iconographic collection, etc.

(b) Steps should be taken to ensure in particular the regular provision of funds: (i) to administer the services in a satisfactory manner; (ii) to carry out a programme of work proportionate to the archaeological resources of the country, including scientific publications; (iii) to exercise control over accidental discoveries; (iv) to provide for the upkeep of excavation sites and monuments.

7. Careful supervision should be exercised by each Member State over the restoration of archaeological remains and objects discovered.

8. Prior approval should be obtained from the competent authority for the removal of any monuments which ought to be preserved in situ.

9. Each Member State should consider maintaining untouched, partially or totally, a certain number of archaeological sites of different periods in order that their excavation may benefit from improved techniques and

more advanced archaeological knowledge. On each of the larger sites now being excavated, in so far as the nature of the land permits, well defined "witness" areas might be left unexcavated in several places in order to allow for eventual verification of the stratigraphy and archaeological composition of the site.

Formation of central and regional collections

10. Inasmuch as archaeology is a comparative science, account should be taken, in the setting up and organizing of museums and reserve collections, of the need for facilitating the work of comparison as much as possible. For this purpose, central and regional collections might be formed or, in exceptional cases local collections on particularly important archaeological sites-in preference to small scattered collections, accessible to comparatively few people. These establishments should command, on a permanent basis, the administrative facilities and scientific staff necessary to ensure the preservation of the exhibits.

11. On important archaeological sites, a small exhibit of an educational nature-possibly a museum-should be set up to convey to visitors the interest of archaeological remains.

Education of the public

12. The competent authority should initiate educational measures in order to arouse and develop respect and affection for the remains of the past by the teaching of history, the participation of students in certain excavations, the publication in the press of archaeological information supplied by recognized specialist, the organization of the guided tours, exhibitions and lectures dealing with methods of excavation and results achieved, the clear display of archaeological sites explored and monuments discovered, and the publication of cheap and simply written monographs and guides. In order to encourage the public to visit these sites, Member States should make all necessary arrangements to facilitate access to them.

III. Regulations governing excavations and international collaboration

Authority to excavate granted to foreigners

13. Each Member State on whose territory excavations are to take place should lay down general rules governing the granting of excavation concessions, the conditions to be observed by the excavator, in particular as concerns the supervision exercised by the national authorities, the period of the concession, the reason which may justify its withdrawal, the suspension of work, or its transfer from the authorized excavator to the national archaeological service.

14. The conditions imposed upon a foreign excavator should be those applicable to nationals. Consequently, the deed of concession should omit special stipulations which are not imperative.

International collaboration

15. In the higher interest of archaeology and of international collaboration, Member States should encourage excavations by a liberal policy. They might allow qualified individuals or learned bodies, irrespective of nationality, to apply on an equal footing for the concession to excavate. Member States should encourage excavations carried out by joint missions of scientists from their own country and of arhaeologists representing foreign institutions, or by international missions.

16. When a concession is granted to a foreign mission, the representative of the conceding State -if such be appointed- should, as far as possible, also be an archaeologist capable of helping the mission and collaborating with it.

17. Member States which lack the necessary resources for the organization of archaeological excavations in foreign countries should be accorded facilities for sending archaeologists to sites being worked by other Member States, with the consent of the director of excavations.

18. A Member State whose technical or other resources are insufficient for the scientific carrying out of an excavation should be able to call on the participation of foreign experts or on a foreign mission to undertake it.

Reciprocal guarantees

19. Authority to carry out excavations should be granted only to institutions represented by qualified archaeologists or to persons offering such unimpeachable scientific, moral and financial guarantees as to ensure

that any excavations will be completed in accordance with the terms of the deed of concession and within the period laid down.

20. On the other hand, when authority to carry out excavations is granted to foreign archaeologists, it should guarantee them a period of work long enough, and conditions of security sufficient to facilitate their task and protect them from unjustified cancellation of the concession in the event, for instance, of their being obliged, for reasons recognized as valid, to interrupt their work for a given period of time.

Preservation of archaeological remains

21. The deed of concession should define the obligations of the excavator during and on completion of his work. The deed should, in particular, provide for guarding, maintenance and restoration of the site together with the conservation, during and on completion of his work, of objects and monuments uncovered. The deed should moreover indicate what help if any the excavator might expect from the conceding State in the discharge of his obligations should these prove too onerous.

Access to excavation sites

22. Qualified experts of any nationality should be allowed to visit a site before a report of the work is published and with the consent of the director of excavations, even during the work. This privilege should in no case jeopardize the excavator's scientific rights in his finds.

Assignment of finds

23. (a) Each Member State should clearly define the principles which hold good on its territory in regard to the disposal of finds from excavations.

(b) Finds should be used, in the first place, for building up, in the museums of the country in which excavations are carried out, complete collections fully representative of that country's civilization, history, art and architecture.

(c) With the main object of promoting archaeological studies through the distribution of original material, the conceding authority, after scientific publication, might consider allocating to the approved excavator a number of finds from his excavation, consisting of duplicates or, in a more general sense, of objects or

groups of objects which can be released in view of their similarity to other objects from the same excavation. The return to the excavator of objects resulting from excavations should always be subject to the condition that they be allocated within a specific period of time to scientific centres open to the public, with the proviso that if these conditions are not put into effect, or cease to be carried out, the released objects will be returned to the conceding authority.

(d) Temporary export of finds, excluding objects which are exceptionally fragile or of national importance, should be authorized on requests emanating from a scientific institution of public or private character if the study of these finds in the conceding State is not possible because of lack of bibliographical or scientific facilities, or is impeded by difficulties of access.

(e) Each Member State should consider ceding to, exchanging with, or depositing in foreign museums objects which are not required in the national collections.

Scientific rights; rights and obligations of the excavator

24.- (a) The conceding State should guarantee to the excavator scientific rights in his finds for a reasonable period.

(b) The conceding State should require the excavator to publish the results of his work within the period stipulated in the deed, or, failing such stipulations, within a reasonable period. This period should not exceed two years for the preliminary report. For a period of five years following the discovery, the competent archaeological authorities should undertake not to release the complete collection of finds, nor the relative scientific documentation, for detailed study, without the written authority of the excavator. Subject to the same conditions, these authorities should also prevent photographic or other reproduction of archaeological material still unpublished. In order to allow, should it be so desired, for simultaneous publication of the preliminary report in both countries, the excavator should, on demand, submit a copy of his text to these authorities.

(c) Scientific publications dealing with archaeological research and issued in a language which is not widely used should include a summary, and if possible, a list of contents and captions of illustrations translated into some more widely known language.

Documentation on excavations

25. Subject to the provisions set out in paragraph 24, the national archaeological services should, as far as possible, make their documentation and reserve collections of archaeological material readily available for inspection and study to excavators and qualified experts, especially those who have been granted a concession for a particular site or who wish to obtain one.

Regional meetings and scientific discussions

26. In order to facilitate the study of problems of common interest, Member States might, from time to time, convene regional meetings attended by representatives of the archaeological services of interested States. Similarly, each Member State might encourage excavators working on its soil to meet for scientific discussions.

IV. Trade in antiquities

27. In the higher interests of the common archaeological heritage, each Member State should consider the adoption of regulations to govern the trade in antiquities so as to ensure that this trade does not encourage smuggling of archaeological material or affect adversely the production of sites and the collecting of material for public exhibit.

28. Foreign museums should, in order to fulfill their scientific and educational aims, be able to acquire objects which have been released from any restrictions due to the laws in force in the country of origin.

V. Repression of clandestine excavations and of the illicit export of archaeological finds

Protection of archaeological sites against clandestine excavations and damage

29. Each Member State should take all necessary measures to prevent clandestine excavations and damage to monuments defined in paragraphs 2 and 3 above, and also to prevent the export of objects thus obtained.

International co-operation in repressive measures

30. All necessary measures should be taken in order that museums to which archaeological objects are offered

ascertain that there is no reason to believe that these objects have been procured by clandestine excavation, theft or any other method regarded as illicit by the competent authorities of the country of origin. Any suspicious offer and all details appertaining thereto should be brought to the attention of the services concerned. When archaeological objects have been acquired by museums, adequate details allowing them to be identified and indicating the manner of their acquisition should be published as soon as possible.

Return of objects to their country of origin

31. Excavation services and museums should lend one another assistance in order to ensure or facilitate the recovery of objects derived from clandestine excavations or theft, and of all objects exported in infringement of the legislation of the country of origin. It is desirable that each Member State should take the necessary measures to ensure this recovery. These principles should be applied in the event of temporary exports as mentioned in paragraph 23(c), (d) and (e) above, if the objects are not returned within the stipulated period.

VI. Excavations in occupied territory

32. In the event of armed conflict, any Member State occupying the territory of another State should refrain from carrying out archaeological excavations in the occupied territory. In the event of chance finds being made, particularly during military works, the occupying Power should take all possible measures to protect these finds, which should be handed over, on the termination of hostilities, to the competent authorities of the territory previously occupied, together with all documentation relating thereto.

VII. Bilateral agreements

33. Member States should, whenever necessary or desirable, conclude bilateral agreements to deal with matters of common interest arising out of the application of the present Recommendation.

The foregoing is the authentic text of the Recommendation duly adopted by the General Conference of the United Nations Educational, Scientific and Cultural Organization during its Ninth Session, which was held at New Delhi and declared closed the fifth day of December 1956.

APPENDIX B

HISTORY OF EXCAVATION

1979 : August 8th - September 25th

Excavation : It lasts 1.5 months with about 50 workers. Excavation area was transferred to bouleuterion and stoa which were found by chance during the excavation in 1978.

Restoration : Except the anastylosis in bouleuterion and stoa, main work was in bath. Besides the cleaning of bath, a partition wall of main parts, having dimensions as 2.5 m. of thickness, 25 m. of length and 4.5 m. of height, completely; the wall between the bath and gymnasion, to the half length and until the vault foots were restored. The difficulties of obtaining material and master are the factors which make restoration difficult.

Environmental investigations : The excavation staff did trips to the historic sites in the region in weekends and official holidays. During these trips, some works in Arycanda were commented and some works which are destructed in recent time were informed to "Eski Eserler ve Müzeler Genel Müdürlüğü". Lycia grave in Çavdır is one of these works.

1981 : July 6th

Excavation : It last 1.5 months with about 25-30 workers. Other parts of bath are excavated. The cleaning and repairing of palaestra of gymnasion has done. The controlling of the drawings, which were made before, of the buildings was one of the works done in this period.

In addition to these, four new inscription panels which were used as a building material in Byzantine house were investigated.

Restoration : By the cleaning of the bath, the building has occurred with its majesty. After this, anastylosis has been done.

Trips : A report has been made, together with the personnel of Antalya Museum, about the illegal excavations in Nisa.

1982 : August 2nd - August 31st

Excavation : In addition to the cleaning of the bath, the cleaning of temple-basilica was made.

Restoration : Skene and proskenion parts of the theatre were restored. For this, the connection and sticking of pieces, such as column, architrave-triglif/metop, etc. were made. Columns of skene were put in their places. Wooden square prism capitals put over the columns because the original ones were crumbled. Over these capitals, architrave and syma blocks were placed. 2 columns used as structural elements were put into their places in Bath-Gymnasion complex. To preserve the mosaics in the palaestra part of the Gymnasion, destroyed parts and around the tesserae were consolidated with cement mortar.

1983 : July 18th - August 31st

Excavation : Small bath was excavated and cleaned and cleaning of the area around the temple-basilica was began. This area was about 10 X 40 m. and there was a very thick layer of infilling.

Preparation for publication : To be a preparation of the general publication, architectural surveying and restitution drawings of existing and restored buildings were started to be orderly done.

1984 : June 22nd - August 20th

Preparation for publication : To have correct drawings measurements were checked and drawings were controlled.

Excavation : The environment of Tomb, No.1 was cleaned. Naltepesi - Heroon building was also cleaned and investigated.

Restoration : By having the crane of Phaselis Excavation in Arycanda, some stone blocks of Tomb, No.1 were put on their places. Same kinds of things were done for Naltepesi, too. By the helps of the Highway Department, Finike section, the road from Elmali-Finike highway to the archaeological site was made smooth and became appropriate for car traffic. The mosaics in Temple-Basilica were controlled once more.

Environmental investigations : During the trips in the region,

1. At the north of Finike, a tomb and a castle from the Byzantine period,

2. 2 hours to Finike, on the west direction, a Lycian settlement and a Roman settlement over it,

3. A Lycian and Roman settlement on the north-west

T. C.
Yükseköğretim Kurulu
Dokümantasyon Merkezi

direction,

4. On the Finike-Kaş highway, an early Byzantine basilica which has good masonry on outer walls, with mosaic pavement and rich architecture from VIth century A.D. were discovered.

1985 : June 26th - August 20th

Excavation : Partially cleaned Naltepesi is being cleaned totally. The Hillside Bath on the stadion level is also being cleaned during the excavation.

Restoration : Although the floor mosaics of Temple-Basilica were thought to be consolidated, it was seen that there was another mosaic under this and the upper one is transferred to the excavation house. The work in the Tomb, No.1 continued this year, too. The west wall of this tomb is diagonally completed until the architrave level through the south. In addition to this, some of the missing stones of the door are found and this door completed.

Another work continuing in Arycanda is the cleaning of existing buildings. Although, the plants clean every year, after the rainy '84-'85 winter, most of the buildings were full of rocks and rubbles. These were also cleaned. Some of these buildings are Stadion, Theatre, Bath-Gymnasion, State Agora and some tombs.

Environmental investigations : The Lycia settlement in Arycanda could not be searched this year because of money and worker problems.

1986 : July 17th - September 10th

Excavation : Some of the houses on the west of the city are being excavated. A few tombs in the Eastern Necropolis are totally being cleaned.

Restoration : The missing rows of the west wall of Tomb, No.1 are being completed. Four concrete blocks were placed in these rows because these stones could not be found. After this, Tomb, No.1 became sufficient to give an idea about the scale. Some anastylosis work is done on the west wall of Bath-Gymnasion. Ceramics found in the newly opened tombs were combined. One of the tombs in East Necropolis is closed with iron grids from the front and top to preserve it.

Environmental investigations : A trip has been made containing approximately the whole Lycia and some parts of Caria with the excavation staff during the Fest holiday. In addition to this, antique sites in near by cities has been traveled in the weekends.

APPENDIX C

LIST OF EXCAVATIONS IN 1988

I. National Excavations

Excavation	Excavation Chief
1. Acemhöyük	Prof. Dr. Nimet Özgüç
2. Ahlat Mezarları	Prof. Dr. H. Karamağaralı
3. Alanya Kalesi	Prof. Dr. M. Oluş Arık
4. Arykanda	Prof. Dr. Cevdet Bayburtluoğlu
5. Bayraklı	Ord. Prof. Dr. Ekrem Akurgal
6. Çayönü	Doç. Dr. Mehmet Özdoğan
7. Dilkaya	Doç. Dr. Altan Çilingiroğlu
8. Enez	Prof. Dr. Afif Erzen
9. Eski Van Şehri	Doç. Dr. Taner Tarhan
10. Girnavaz	Doç. Dr. Hayat Erkanal
11. Gülpınar	Doç. Dr. Coşkun Özgünel
12. Harran	Şanlıurfa Müze Müd.
13. İkiztepe	Doç. Dr. Önder Bilgi
14. İznik Çini Fırınları	Prof. Dr. Oktay Aslanapa
15. Karain	Doç. Dr. Işın Yalçınkaya
16. Karatepe	Prof. Dr. Halet Çambel
17. Karahöyük	Ord. Prof. Dr. Sedat Alp
18. Kaunos	Prof. Dr. Baki Öğün
19. Klazomenai	Doç. Dr. Güven Bakır

20. Knidos	Doç. Dr. Ramazan Özcan
21. Köşkhöyük	Doç. Dr. Uğur Silistreli
22. Kubad Abad	Prof. Dr. Rüçhan Arık
23. Kuruçay	Prof.Dr. Refik Duru
24. Kültepe	Prof. Dr. Tahsin Özgüç
25. Magnesia	Doç. Dr. Orhan Bingol
26. Notion	Doç. Dr. Erol Atalay
27. Panaztepe	Doç. Dr. Armağan Erkanal
28. Paşalar	Doç. Dr. Berna Alpagut
29. Perge	Prof. Dr. Jale İnan
30. Stratonikeia	Prof. Dr. Yusuf Boysal

II.Rescue Excavations

Excavation	Directory of museum
1. Antik Tiyatro	Afyon
2. Antiokheia Pisidia	Yalvaç
3. Belcik	Adıyaman
4. Eski Gümüş Manastır	Niğde
5. Güzelobahöyük	Adana
6. Karataş/Magarsus	Adana
7. Kaş - Dereköy	Antalya
8. Kibyra	Burdur
9. Leylekli Çeşme	Tokat
10. Mamure Kalesi	Anamur
11. Tümülüs	Manisa

III.Foreign Excavations

Excavation	Excavation Chief
1.Aizanoi	Dr. Adolf Hoffmann
2.Aphrodisias	Prof. Dr. K.T.Erim
3.Aslantepe	Prof. Dr. A.Palmieri
4.Bergama	Prof. Dr. W.Radt
5.Boğazköy	Dr. Peter Neve
6.Claros	Prof.J. De La Geniere
7.Didyma	Prof. Dr. K.Tuchelt
8.Ephesus	Prof. Dr. G. Langman
9.Gordion	Prof. Dr. G. K. Sams
10.Hierapolis	Prof. Dr. B. Ferrero
11.Iasos	Dr. F.Berti
12.Ilıcapınar	Dr. J.Doodenberg
13.Kalehöyük	Prof. Dr. Masao Mori
14.Kyme	Prof. Dr. S.Lagona
15.Labranda	Ass.Prof.E.P.Hellstrom
16.Limyra	Prof. Dr. J.Borchhardt
17.Meydancıkkale	Dr. A.Davesne
18.Miletos	Prof. Dr. M.Wiener
19.Pesinus	Dr. J.Devreker
20.Porsukhöyük	Prof. Oliver Pelon
21.Sardis	Prof.Dr.C.H.Greenewelt
22.Semayük	Prof. Dr. M.J.Mellink
23.Sualtı	Cemal Pulak
24.Tillehöyük	Dr. D.French

25.Troia	Prof. Dr. M.Korfmann
26.Xanthos-Latoon	Prof. Dr. J.Le Roy

T. C.
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Dokümantasyon Merkezi