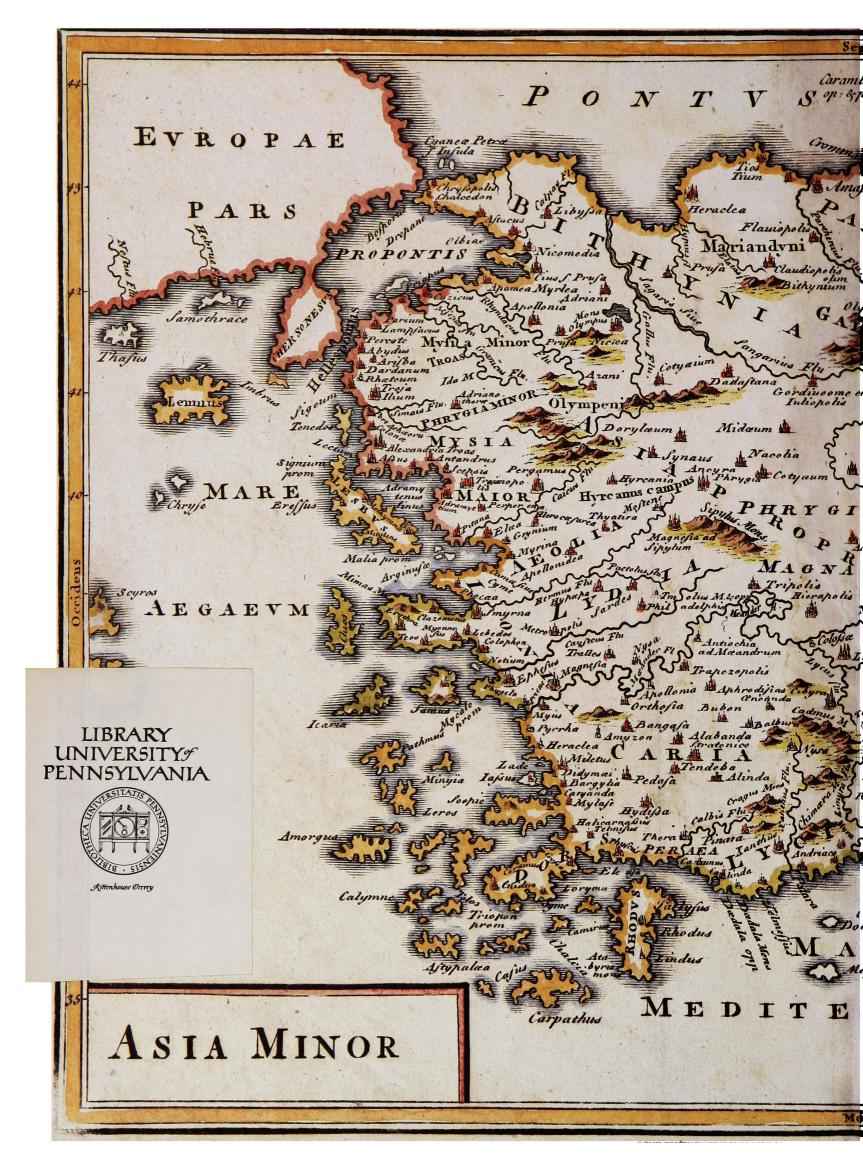
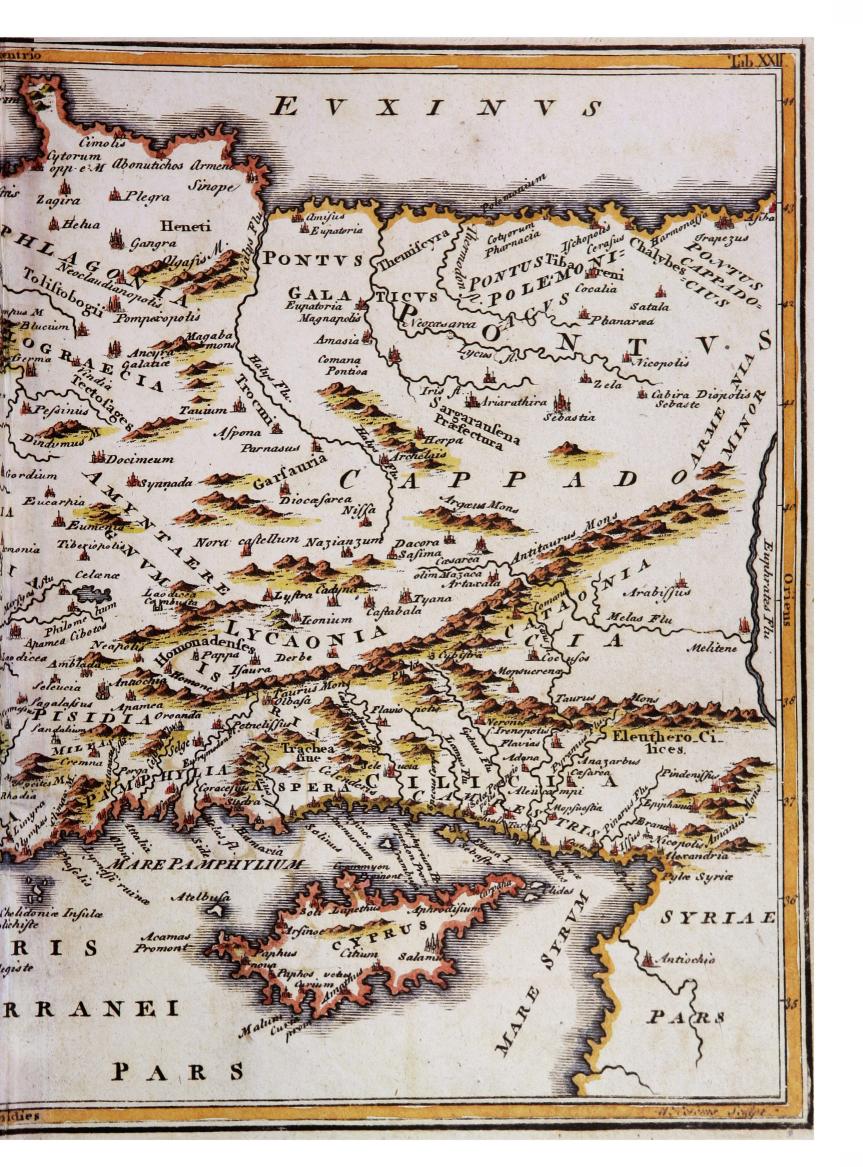
MARTHA SHARP JOUKOWSKY

Secretary

BROWN UNIVERSITY — PROVIDENCE, RHODE ISLAND
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These volumes are affectionately dedicated to

Artemis A. W. Joukowsky

with respect, admiration, and love for thirty years.

ARCHAEOLOGIA TRANSATLANTICA

EDITORS

TONY HACKENS

AND

R. ROSS HOLLOWAY



1. Aphrodisias 1980. Herding and farming on the feeding plain (Photo: David L. Brill).

Lay-out T. HACKENS. Drawings and Photographs, see list vol. II, p. 737.

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Cover photograph: Aerial view of Aphrodisias looking Northeast (Photo: David L. Brill). Cover inside: Map of Asia Minor engraved by W.H. Toms, published in Chr. Cellarius, Geographia antiqua..., London, 1747, plate XXII. Originally not colored; the plate has been enlarged by approximately 141 %. Identification courtesy of Paul Culot and Harry Dewit.

PUBLICATIONS D'HISTOIRE DE L'ART ET D'ARCHÉOLOGIE DE L'UNIVERSITÉ CATHOLIQUE DE LOUVAIN — XXXIX

ARCHAEOLOGIA TRANSATLANTICA III

PREHISTORIC APHRODISIAS

An Account of the Excavations and Artifact Studies

BY

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Jeannine Léon Leurquin, William E. Mierse, Janet M. Monge, Elizabeth Oustinoff,
David S. Reese, Anne Thiry and Şükrü Tül

VOLUME I: EXCAVATIONS AND STUDIES



BROWN UNIVERSITY
CENTER FOR OLD WORLD
ARCHAEOLOGY AND ART
PROVIDENCE, RHODE ISLAND, USA



INSTITUT SUPÉRIEUR D'ARCHÉOLOGIE ET D'HISTOIRE DE L'ART COLLÈGE ÉRASME LOUVAIN-LA-NEUVE, BELGIQUE

1986



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Foreword

The exploration and excavation of ancient Aphrodisias in Caria were launched in July 1961, following a brief investigative 1959 visit, under the aegis of New York University and its Department of Classics. Intended as an initial enterprise within a more ambitious archaeological scheme conceived as the « Anatolian Research Project », by the late Professor Jotham Johnson (then departmental chairman), the investigations originally and logically enough focused on the impressive, monumental Graeco-Roman remains and classical history of the Carian city, and, more particularly, the output of its already recognized school of sculpture. However, it became rapidly apparent during the initial 1961 campaign that significant archaeological information concerning the preclassical antecedents of the site was also available, all the more interesting as the prehistory of southwestern Anatolia was then practically terra incognita. Indeed, the presence of an unusual, conical hill in the southeastern sector of the Graeco-Roman and Byzantine city, labelled « acropolis » by early excavators and endowed with the buried remains of a late Hellenistic theatre on its east slope, suggested a habitation mound or a höyük. Although some doubted such a possibility at first, a brief sondage on the top of the hillock reinforced belief in its artificial origins. Subsequently, stray discoveries of lithic and suitable ceramic material on or near the « acropolis » further sustained this theory. In 1962, upon our invitation and with a grant from the Wenner-Gren Foundation, Professor Jacques Bordaz (then of New York University) undertook a short survey in and about Aphrodisias in search of additional relevant evidence. Though no other clear surface trace of early habitation was discovered in the vicinity of the site, his examination of the recovered material confirmed the probability of prehistoric settlements at Aphrodisias itself, dating back to Chalcolithic times, if not earlier.

Actual excavations aimed at producing more specific and stratified evidence from the « acropolis » were inaugurated in 1966 at the southwestern base of the hill, thanks to a grant from the National Geographic Society, which continued to support the project generously in subsequent years. Miss Stephanie Page was entrusted with their supervision. More extensive and intensive trenches were then begun in 1967 on the upper west slope of the « acropolis », which preserved few monumental remains of the Graeco-Roman-Byzantine city and in an area immediately to the east, labelled « Pekmez ». Between that date and 1974, Mrs. Barbara Kadish and several collaborators supervised these investigations. The wealth of material datable to various phases of the Bronze Age as well as to the Chalcolithic period recovered and recorded in this interval eventually demanded a thorough study, examination, evaluation and interpretation. This enormous task was entrusted in 1975 to Martha S. Joukowsky. During the past eight years, she and her collaborators dedicated their energies unstintedly to this painstaking, often thankless work both at Aphrodisias and at home. The results are the present volumes.

To write a foreword to such a momentous work is not an easy task. Indeed, the obviously intimate involvement of this writer with the Aphrodisias excavations and a long-standing, precious friendship with its author (as well as several of her collaborators) require a certain tact and doigté in expressions. Yet, it is surely thanks to these factors that such extraordinary research and study were successfully achieved by Dr. Joukowsky. The laborious process of bringing the Aphrodisias prehistoric settlements into full scholarly perspective could only have been achieved through shared ideals and interests, as well as rare commitment and affection. Despite all kinds of pressures, « Marti's » tremendous and infectious enthusiasm for her work never wavered. It is, therefore, not surprising that she produced such a remarkable evaluation of prehistoric Aphrodisias which is of unusual significance to our knowledge of ancient Anatolia. The scholarly and archaeological world will long be in her debt for her most judicious analyses, laborious examination and recording of all the relevant Aphrodisias evidence and her thought-provoking conclusions. From one who first believed in prehistoric Aphrodisias to another who brought into proper focus its full impact, only deep admiration, heartfelt gratitude and congratulations can be expressed.

No archaeological enterprises can be free of shortcomings or differences of opinion. Elaborating on Sir Mortimer Wheeler's leitmotif, it is worth remembering that archaeologists, who are « digging up, not things, but people » are ... people themselves. Yet, a sense of purpose and vision should never be obliterated from the collaborative efforts of archaeology. Consequently, it is with sincere appreciation that the labors and contributions of all who helped to explore the prehistoric past of Aphrodisias on or off the field since 1961 and made this volume possible, archaeologists, trench-supervisors, draughts-

men, conservators, surveyors, architects, analysts of all kinds, technicians and specialists as well as foremen, workmen, printers and typesetters, are hereby gratefully acknowledged.

Last but not least, the cooperation of the General-Directorate of Antiquities and Museums of The Republic of Turkey and the contributions of many donors, private or corporate must be duly registered. Above all the continued interest and assistance of the National Geographic Society and its Committee for Research and Exploration (particularly the late Drs. Leonard Carmichael and Melville B. Grosvernor, Dr. Melvin M. Payne and Dr. Edwin W. Snider have been great sources of strength and encouragement). Without their help and support, *Prehistoric Aphrodisias* could not have become a reality.

Aphrodisias, August 1984

Kenan T. Erim

Director, Aphrodisias Excavations

Professor of Classics,

New York University

Preface

The current volume is devoted to a subject that has been a major interest of mine since graduate studies at the Université de Paris I Panthéon-Sorbonne, U.E.R. d'Art et Archéologie where I prepared my doctoral dissertation under the guidance of the late Jean Deshaves and Jean-Louis Huot. The purpose of this book is to describe the excavations of prehistoric Aphrodisias, a research whose tradition had been firmly established in me by the people with whom I have worked both at home and in the field: in Lebanon 1968-1973, James B. Pritchard, Dimitri Baramki, and the late Roger Saidah; in Hong Kong 1972-1974, Solomon Bard, James Watt, Richard Englehardt; in Turkey 1975-1982, Kenan T. Erim and Anna S. Benjamin; in Sicily 1982-1983, R. Ross Holloway, Rolf Winkes, Susan S. Lukesh; and at home, Tony Hackens, Oscar White Muscarella, and others. My dissertation was centered around the Late Chalcolithic aspects of Aphrodisias... and above all else, I have made every attempt to incorporate the ideas and learn from the suggestions and criticisms of this earlier work by the scholars who served on the jury, including Jean-Louis Huot, Machteld J. Mellink, Winfried Orthmann, René Treuil, Jacques Tixier, and Kenan T. Erim. However, none of these individuals should be held in account, for this volume is my own doing — the exploration, investigation, analysis and interpretation of the vast corpus of stratigraphy, artifacts, and architecture, as well as my concept of the chronology of prehistoric Aphrodisias, including the Chalcolithic, Bronze and Iron Ages.

Sponsors

The Aphrodisias excavations have been conducted under the aegis of New York University. Over the years, since their inception, they have been generously supported by the Committee for Research and Exploration of the National Geographic Society,

Washington D.C. A number of organizations have also given their support to the work at the site, including the Wenner-Gren Foundation, the Old Dominion Foundation, the Andrew W. Mellon Foundation, the Ford Foundation, the Vincent Astor Foundation, the National Science Foundation of the United States, the Charles E. Merrill Trust, the Robert Owen Lehmann Foundation, the Irvine Foundation, the Anne S. Richardson Fund, the Littauer Foundation, the American Research Institute in Turkey, Dumbarton Oaks, the National Endowment for the Humanities (through its matching funds program), the American Association of the Friends of Aphrodisias, and numerous private donors.

Staff

Archaeological findings are a direct result of a dedicated working team of people, each responsible for some aspect of recovery, such as surveying, drawing balk sections, photography, maintaining the catalogue and a myriad of other tasks. Under the leadership of K.T. Erim, Professor of Classics, New York University, Washington Square, New York, Director of the Aphrodisias Excavations, the following members of the staff were involved with prehistoric research and excavations. In 1962, Jacques Bordaz (then of New York University, presently of the University of Pennsylvania) served as Consultant and collaborator for the prehistoric survey of Aphrodisias, its environs, and the Dandalas Valley. From 1967 to 1970, and again in 1972, Barbara Kadish, was appointed Field Assistant to supervise the prehistoric excavations.

Other members of the staff included: 1966 and 1970, Dr. Aloïs Machatschek of the Technische Hochschule, Vienna; 1966-1967, Mr. Wolfgang Klien; 1966, Stephanie Page; 1967, Lorraine Williams and Jocelyn Beeley; 1967-1968, Emmerich

Schraml; and from 1968-1972, Karen Flinn. In 1968, staff members were Karen Rubinson, Robert Di Bennardo, Gül Wines, Jane McLaughlin, Franz Neuwirth, Günther Stanzl, Anna S. Benjamin, and Dexter Perkins Jr. as Consultant for the analysis of faunal remains. In 1969, the staff included: Friedmund Hueber, Horst Hambruch, Wolfgang Höhnl, Stuart Y. Smyth, Joanna Preston and Elizabeth Pye; in 1970, Ute Winischhofer, Ewald Mühlmeier, Mario Schwartz (also in 1972), Marsha Levine, Nancy Tousley, Shirley Marciano and Joan Silverman; in 1971, Mr. and Mrs. Brian Hesse, Sam Mild, Charles White, Joan Silverman, Mr. and Mrs Ewald Mühlmeier and Ellen Epstein; in both 1971 and 1972, Patty Gerstenblith, Mark Lesky, Ronald Marchese (also in 1974); also in 1972, Charles Gates, Marie-Henriette Carré; and in 1974, Orhan Gürman.

The research staff during the years 1975-1982 included: 1975-1985, Martha S. Joukowsky; 1976-1979, Anna S. Benjamin; 1976-1978 and 1980-1981, Nina Joukowsky; 1977-1981, Sheila J. Ehlinger; 1979, Janet Macht; 1981-1982, Jeannine Léon Leurquin; and in 1982, Şükrü Tül.

During the years of prehistoric excavations and research, the following representatives of the General Directorate of Antiquities and Museums of the Republic of Turkey included: 1966, Mr. İlhan Akşit; 1967, Mr. Aykut Özet; 1968-1969, Mr. Sümer Atasoy; 1970, Miss Sevim İşlek; 1971 and 1974, Mr. Ali Kılıçkaya; 1972, Mr. Lütfi Salmansar; 1973, Mr. Orhan Gürman and Mr. Selçuk Başer and Mr. Ali Kılıçkaya; 1975, Mr. Atilla Tulga, Mr. Ali Önce and Mr. Erol Çakır; 1976, Mr. Atilla Tulga, Mr. Gür Karasu and Mr. Kadir Yanık; 1977, Mr. İsmet Algedik, Mr. Güray Yasa, and Mr. Altan Türe; 1978, Mr. Atilla Tulga; 1979-1980 and 1982, Mr. Akif Gaffaroğlu; and in 1981-1982, Mr. Tahsin Sezer.

Between 1966 and 1977, Mr. Reha Arican ably assisted the prehistoric excavations in the restoration and conservation of artifacts.

The valuable cooperation and assistance of the Republic of Turkey General Directorate of Antiquities and Museums, Ministry of Culture is gratefully acknowledged. Those to whom particular mention must be made include: Vice-Minister Mehmet Önder; Director-Generals Hikmet Gürçay, Cüneyt Ölçer and Nurettin Yardımcı; and Deputy Directors Burhan Tezcan, Aykut Özet, Çetin Anlağan, Nadir Avcı and Tanju Özoral. In recent years, Mr. Kudret Ata

has been the Director of the Excavations Section in the Ministry of Culture and Tourism.

Finally all those variously involved in the original photographic coverage of the site are: Mr. M. Ali Döğenci of the Türk Tarih Kurumu, Julian and Eunice Whittlesey, and Cevat Erder of the Middle East Technical University, and Jonathan Blair, Adam Woolfit and David Brill for the National Geographic Society.

Substantial attention is being paid to the site as a national monument and as a contribution to the tourism of Turkey. The General Directorate of Antiquities and Museums of Turkey in 1979 initiated the construction of the Aphrodisias Museum on the site, constructed with the generous assistance of the National Geographic Society and private donors. In addition to its many sculpture galleries, it features a small-finds hall in which two cases are devoted to prehistoric objects. Most of the artifacts have been deposited in the museum storerooms, where interested students may apply to the Director for the necessary authorization to study them.

Preliminary Comments

In 1975, K.T. Erim had to limit work at Aphrodisias to the area of greatest need — the classical excavations. No longer could prehistoric excavation and research be financially supported. He asked me to spend some time at the site to formulate what could be done to document the prehistoric excavations. After the first season, I realized this was a rescue operation — for there was no doubt that the final publication would not be undertaken by the original excavators, for various reasons. Thus I researched, co-ordinated the specialist analyses of the site, and have written these volumes despite the fact that I did *not* excavate prehistoric Aphrodisias.

I had a choice to either do this or face the probability that its analysis would be abandoned entirely. On the other hand, I considered that an independent study of the material evidence might have a significant effect for the rethinking of the problems of the site. I have applied a different set of criteria — different from the process by which the original excavators recognized and described them. Exploring the stratigraphy, for example, has given us an earlier settlement at the site than was suspected; further, the cross-trench plans have indicated two partial

megaron-type buildings not identified before, and so forth.

Now, as I look back on the mid-1970s, it seems clear that my own feelings maintained a critical attitude toward archaeologists who excavated but did not publish within a reasonable time period. Having then excavated for a decade, I identified myself with the current attitude of protest and with those who made excavation results part of the public record. Hence, I accepted the challenge for the analysis and publication of the Aphrodisias prehistoric findings, an acceptance based on my own beliefs — that it would be wasteful and irresponsible for me to do otherwise. So in early 1976, overwhelming mountains of files were moved into my New York apartment where a closet-room was converted into an office. and work began. Unfortunately there were no generous grants to keep me away from teaching and so the research had to be carried out time-permitting, around my other commitments as well as those of contributing scholars.

Acknowledgments

The pioneering archaeological studies of James Mellaart and M. Mellink have played an enormous role in my understanding of prehistoric southwestern Anatolia. While many basic issues of chronology, settlement patterns and peoples remain open and highly controversial, it is fair to say that without the research carried out by these two eminent archaeologists, there would be few links and measures to stimulate thinking for my own work. I wish to praise them both and acknowledge my intellectual debt.

I should like to express my sincere thanks to the institutions who sponsored these excavations, and to others whose faculty or staff helped in this publication research. I am indebted to Brown University in Providence, Rhode Island — Departments of Geological Sciences, The Center for Old World Archaeology and Art, and the Department of the History of Mathematics; The Metropolitan Museum of Art, New York, Publications Department; The University of Pennsylvania in Philadelphia — The University Museum, Museum of Applied Science for Archaeology, and the Department of Physics; the Smithsonian in Washington, D.C. — The National Museum of American History and Technology and the Conservation Analytical Laboratory; The National

Geographic Magazine; the Université Catholique de Louvain in Belgium — Institut supérieur d'Archéologie et d'Histoire de l'Art.

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I wish to thank my colleagues, students, and friends for their co-operation in this volume. The original preliminary draft of Parts 1 and 2 were read by R. Ross Holloway and R. Winkes of Brown University, and Oscar White Muscarella of The Metropolitan Museum of Art — their acute and vigilant criticisms brought about greater clarity. The name of the site and early investigations as originally written were challenged by G. J. Toomer, also of Brown University, who revised these sections in Part 1. And it was David S. Reese of Cambridge University who fortuitously discovered that the Aphrodisias faunal remains were in the study collection at the University of Pennsylvania and who put me in touch with Pam Jean Crabtree and Janet M. Monge, authors of the faunal analysis in Part 3. I wish to thank them for this valuable contribution, and am particularly grateful to David S. Reese for this sleuthing spirit and more importantly for his analysis of the Aphrodisias shells.

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Maps and charts are the work of Mary G. Winkes. Remaining site plans and artifact line drawings have been drafted and mounted by myself. Original ceramic drawings were divided between me and my daughter, Nina Joukowsky, who devotedly gave six field seasons to these drawings.

Photographic coverage is as follows: the original excavators are responsible for black-and-white trench photographs and some of the color photography, but the major part of the color photographs are the work of David Brill, who spent several seasons at the site on assignment for The National Geographic Society. I am thankful to David as a professional and as a friend. I am also grateful to Mary G. Smith, Senior Assistant Editor of The National Geographic Magazine, for her encouragement and help. Dan Demetriad is to be credited with the processing of all the black-and-white photographs. His patience in handling old negatives and producing the necessary contrasts for publication cannot be underestimated.

I also wish to thank various members of the publication staff who have assisted during the preparation of the book: Raymond Oleffe and his sons, Printers, and A. Molino, for the resolution of the photographs and line drawings. Special thanks goes to Donna Marth who volunteered her time to type the statistical charts, photocopy the galleys, and help with some of the original typing; Gordon Schumacher who patiently helped in a myriad of ways during the final preparation of the manuscript and drawings; and D. Marx who helped with the preparation of statistical charts and the mounting of ceramic drawings. Elisabeth Oustinoff gave me special assistance in various ways during the preparation of this volume. Particular mention must be given for her help in typing the manuscript and for the editing of Appendix I. But above all, it was Yvonne Fawcett who saw the manuscript through a microscope, tightened it, tried to hit every inconsistency, and did much of the editing of the galleys. I express my deepest appreciation for her untiring skill and devotion.

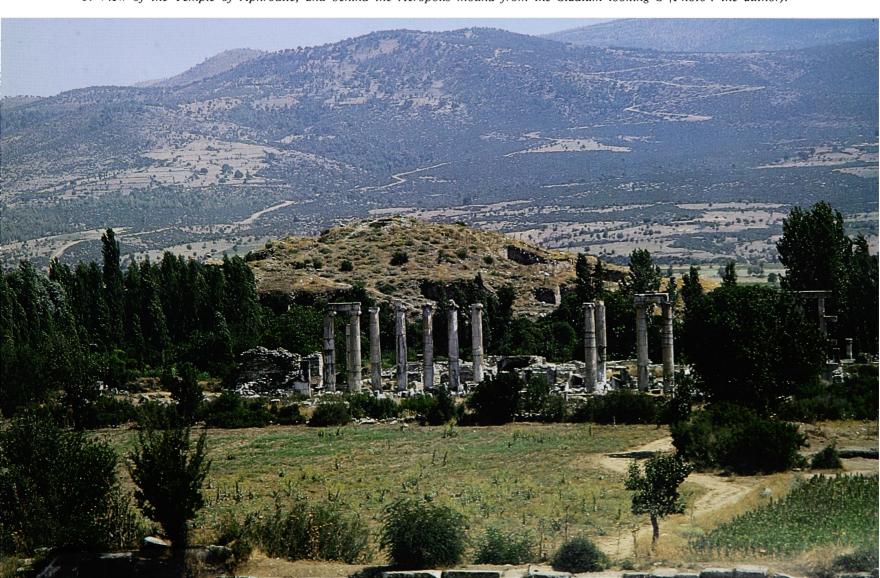
Most importantly, I am deeply indebted to Kenan T. Erim for his encouraging support; his continued cooperation and interest made these investigations possible. He was invariably ready to put at my disposal invaluable assistance on numerous occasions and in a variety of ways. It is a pleasure to thank R. Ross Holloway and Tony Hackens for their encouragement. The patience and help of Tony Hackens cannot be measured — his in-depth participation as well as his actually putting the book together — for it is he who saw this volume through the publication process, assisted by his publication team, Charles-H. Nyns, Francis Poels, Ghislaine Moucharte and Frédérique De Cuyper. The indexes were cared by Dr.

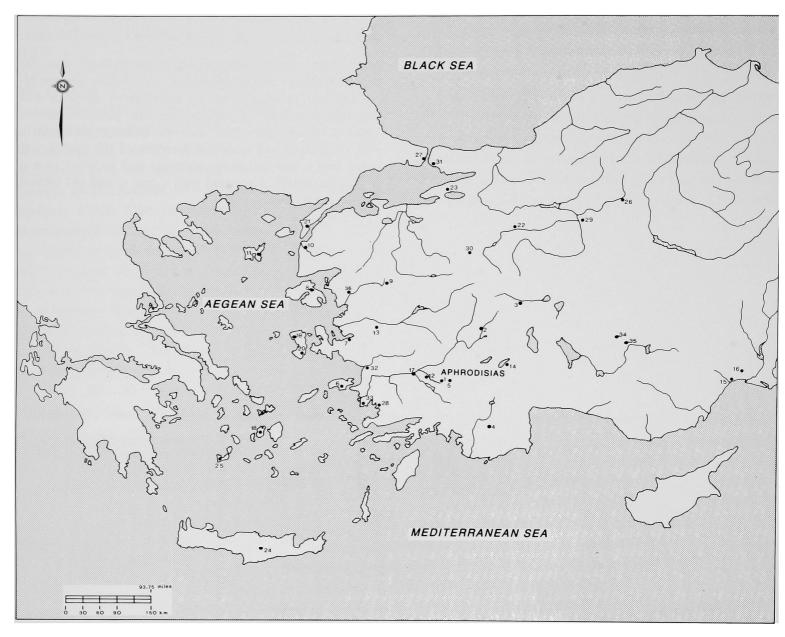
Michel Dewez and Miss Anne Thiry, prehistorians both connected to the Louvain staff.

Lastly to my beloved husband who wisely has not interfered with any aspects of my research but has given me his wholehearted, devoted support and Russian soul. It is to him that I dedicate these volumes.

Nota Bene: Every attempt has been made to give the correct spellings of Turkish names — including geographical regions, cities and towns, government agencies and organizations, titles of publications, and personal names. Total accuracy, however, may be lacking, particularly with the dotted and undotted varieties of the capital and lower case i, the umlauted capital as well as lower case o and u, the cedilla associated with c and s, and the capital Ğ and lower case ğ.

3. View of the Temple of Aphrodite, and behind the Acropolis mound from the Stadium looking S (Photo: the author).





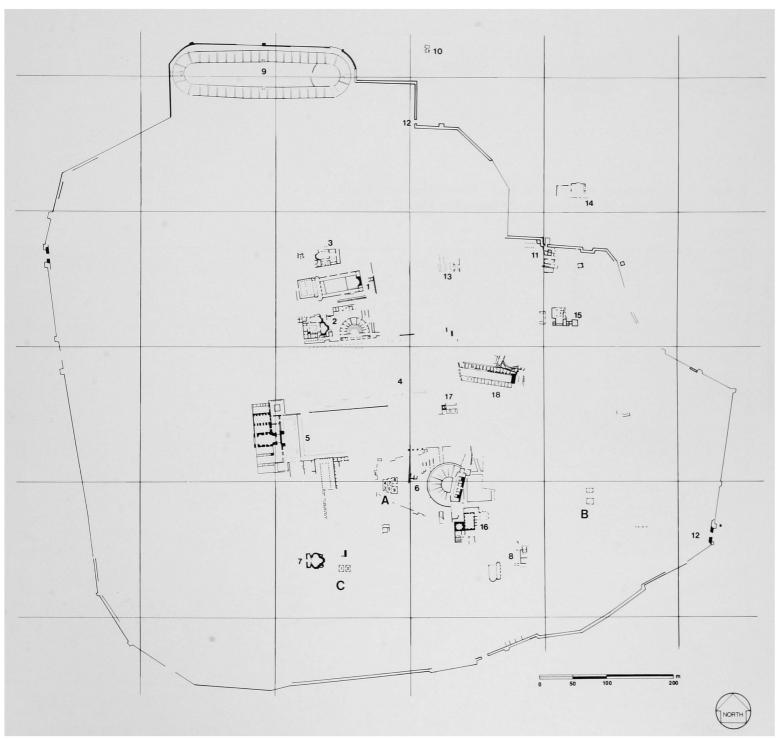
4. Map of Anatolia designating the relative positions of sites and cities. Base map: Hallwag 1:3,000,000 (1976/1977) (Adapted by Mary G. Winkes).

MAP DESIGNATING THE RELATIVE POSITION OF SITES AND CITIES

1.	Aphrodisias	13.	Sardis	25.	Melos
2.	Beycesultan	14.	Hacılar	26.	Ankara
3.	Kusura	15.	Mersin	27.	İstanbul
4.	Karataş-Semayük	16.	Tarsus	28.	Iasos
5.	Medet and Solmaz	17.	Hamidiye	29.	Gordion
6.	Heraion and Tigani (Samos)	18.	Saliagos	30.	Eskişehir
7.	İzmir (Smyrna)	19.	Aghio Galo	31.	Fikirtepe
8.	Thermi (Lesbos)	20.	Emporio	32.	Ephesos (Efes)
9.	Yortan	21.	Kilia	33.	Miletos
10.	Troy, Kum Tepe, Beşiktepe	22.	Demirci Hüyük	34.	Çatal Hüyük
11.	Poliochni	23.	Yeniköy	35.	Can Hasan
12.	Karacasu	24.	Knossos	36.	Pergamon

THE SITE

RESEARCH - EXCAVATIONS - METHODS

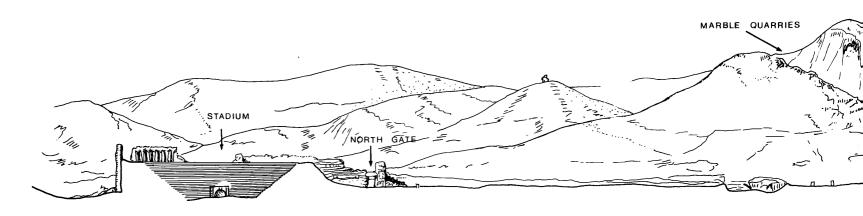


5. Prehistoric Trenches - A. Acropolis trenches, B. Pekmez trenches, C. Kuskalesi trenches.

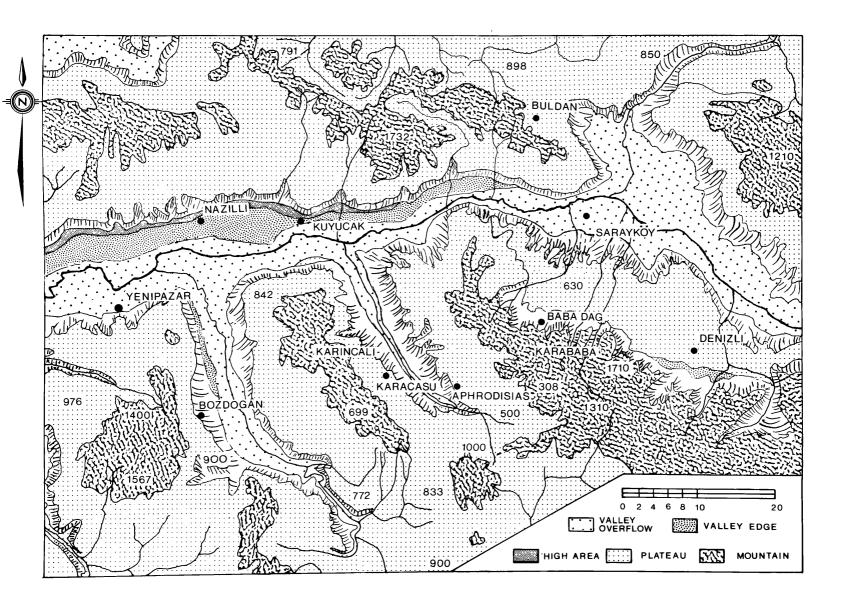
Numbers on the site plan refer to the positions of classical architectural components:

1. Temple of Aphrodite, 2. Bishop's Palace and Odeion, 3. North Temenos Complex, 4. Agora, 5. Baths and Portico of Tiberias,
6. Acropolis and Theater, 7. Basilica, 8. Gymnasium, 9. Stadium, 10. Tomb of Ibrahim, 11. Aqueduct and City Gate, 12. Southeast
City Gate, 13. Propylon, 14. Nympheum, 15. Aphrodisias Museum, 16. Theater Baths, 17. Monumental Gate, 18. Sebasteon.

6. The Acropolis Mound; North-South Section. Base section: P. Gaudin (Redrawn by Mary G. Winkes).



7. Map of the Dandalas Valley. Base Map: Büyük Menderes Bölgesi ve Cıvarının Morfolojik Haritası, Fig. 2 (Adapted by Mary G. Winkes).

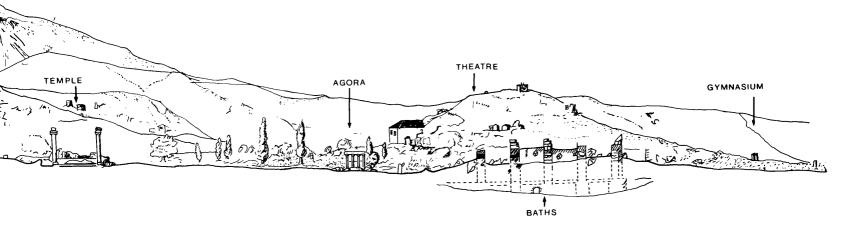


Μίαν πόλιν ταύτην ἐξ ὅλης τῆς ᾿Ασίας ἐμαυτῷ εἴληπφα. Τούτους οὕτω θέλω φυλαχθῆναι ὡς ἐμοὺς πολείτας.

« This one city I have taken for my own out of all of Asia. I wish these people to be protected as my own townsmen. »

Octavian (Augustus).

Trans. J. REYNOLDS (1982:96).



THE SITE

Location

Aphrodisias (37° 43′ N Latitude, 28° 48′ E Longitude) lies on a fertile plain in the valley of the Dandalas River (the ancient *Morsynos*, also referred to as the *Orsinos*), which is a southern tributary of the Upper or Great Maeander River of the *Büyük Menderes*, as it is known in Turkish (Figures 4, 7, 11). It is located approximately 230 km southeast of the modern port of İzmir in the vilāyet of Aydin (ancient Tralles) near the town of Karacasu. Until the Turkish government decree in 1979, the small modern hamlet known as Geyre was situated on the ancient site. For the protection of Aphrodisias' ancient legacy, the Turkish government has relocated and rebuilt homes for the old village farming community in an area (known as New Geyre) approximately 1 km to the west.

The elevation of this region is high; Aphrodisias lies some 600 m above sea level. To its north, the site is guarded by the western mountain slopes of the Salbakos or Baba Dağ (« Father Mountain » as it is known in English), which ranges to a height of 2308 m.

Topography

Topographically the 494 hectare (200 acre) site of Aphrodisias (Figures 5, 12) is relatively flat. Writing in 1839, C. Fellows (1852:251) observed:

« Aphrodisias is not in appearance the site of an ancient Greek city; it lies low, and its principal buildings are not, as usual, elevated above the rest of the town. »

Above the remains of the vast classical metropolis stand two conical mounds which are located in the central south and southeastern portions of the site, (Figure 5, Areas A and B). The larger of these is known as the Acropolis (Figures 3, 6, 60), which rises steeply on its north and west sides from the surrounding plain, reaching a maximum height of approximately 24 m from an approximate base diameter of 125 m. The east and a portion of the south side have been disturbed by a wellpreserved theater and baths of the Roman period. This mound is not an Acropolis in the true sense. It was so named by the Frenchman, Paul Gaudin. In 1966, the Acropolis mound was surveyed by Aloïs Machatschek; its topographic map was redrawn in 1969 by the Austrian architects H. Hambruch, W. Höhnl and F. Hueber of the Technische Hochschule, Vienna (Figure 5). This map is presented in the American Journal of Archaeology (Kadish 1971:122, Ill. I); it has been redrawn and implemented for this volume (Figure 61).

To the east of the Acropolis, separated by a saddle of land, lies the Pekmez mound (Figure 5, Area B), which gradually inclines to an approximate height of 13 m from a base diameter of roughly 125 m. « Pekmez » was named by K. T. Erim from a Turkish jellied grape extract which modern villagers used to process in reconverted Roman sarcophagi on this höyük. The present day appearance of this site is represented on Figure 19, and a partial topographic map is shown on Figure 20. On the flat plain, a short distance southwest of the Acropolis, is a third area known as Kuşkalesi ('bird tower' in English), where prehistoric remains have also been excavated (Figure 5, Area C).



8. Medium scale aerial view of Aphrodisias (Photo: J. Whittlesey).

The slopes of both the Acropolis and Pekmez mounds and the fields that surround these areas today have been disturbed by ancient and modern homeowners who have cut rubbish pits and house foundations, and have harvested crops on the deposits which lie below. In addition, the area is beset with frequent earthquakes. These disturbances can be visualized by referring to the aerial photographs found on Figures 8, 12 and 17.

Through the expropriation of the land by the Turkish government, Kuşkalesi, the Pekmez and Acropolis mounds, as well as other portions of the site, have been freed for excavation. Evidence of successive and heavy occupations from the prehistoric period onward indicates that these three areas were centers of activity throughout the history of the site. This prehistoric area lies within a massive Byzantine fortification wall, (3.5 km in length), which is clearly visible as it surrounds the site (Figure 12).

The Name of the Site 1

It is not until quite late in the Hellenistic period that the name « Aphrodisias », from the Greek name of the goddess of the principal shrine, Aphrodite, is attested for the city. The earliest reference in a literary source,² Appian, Civil Wars I, 453-5 (ed. Gabba p. 265-7), concerns an oracle of Delphi delivered to Sulla, probably soon after his invasion of Greece, in about 87 B.C. In this he was instructed to dedicate an axe to Aphrodite « where is the mighty town of the Carians, who dwell in the place named after Aphrodite ». It is significant that the oracle also refers to the mythological descent of the Romans from Aeneas, son of Aphrodite. For the city was to experience its great rise in size and prosperity primarily as a result of the favor of the Roman rulers, beginning with Sulla, Caesar and the triumvirs in the Republic and continuing with the emperors.³

A series of inscribed documents from the late Hellenistic period naming Aphrodisias came to light in the excavations of the theater, and they have recently been published as nos. 1-5 and 7 in Joyce Reynolds' Aphrodisias and Rome.⁴ The earliest of these which is explicitly dated (no. 2) belongs to 88 B.C., about the same time as the oracle mentioned above. But no. 1, a treaty of alliance between Plarasa/Aphrodisias and the Carian cities Cibyra and Tabae, is dated by the editor on the basis of its lettering to the late 2nd century B.C. In all of these documents Aphrodisias appears as part of the joint city (« sympolity ») Plarasa/Aphrodisias, and indeed as the junior part. All coins of Aphrodisias from the late Hellenistic and early imperial period are also issued by the joint entity (MacDonald 1976). Plarasa, a city of little importance, the site of which has been plausibly located at Bingec, about 9 miles south-west of Aphrodisias, eventually became a mere subdivision of Aphrodisias.⁵ The fact that Aphrodisias first appears as a city in the shadow of this place lends considerable weight to the view

of L. Robert,⁶ that its foundation as a *polis* belongs to the later 2nd century B.C., i.e. that it is only at this comparatively late period that the community which had grown up around the temple (which had been of importance from a much earlier date) became a self-governing entity in the Greek sense. There are a number of parallels in the Hellenistic period for a site which was originally only of religious importance eventually developing into a *polis*. Examples from Caria are Labraunda (temple of Zeus) and Amyzon (temple of Artemis).⁷

It is quite possible, then, that the name « Aphrodisias » does not predate the creation of the *polis* in the later Hellenistic period. However, since the goddess of the shrine must undoubtedly have been identified with the Greek Aphrodite at a much earlier period, the name « Aphrodisias » too may go back as far as the period of intense Hellenization of Caria, under the Hecatomnid dynasty in the 4th century B.C. In any case, before that name was applied to it, the agglomeration round the temple (which was not yet a « city » in the Greek sense) was presumably called by an indigenous name.

What that name was is doubtful. The only evidence on the topic is supplied by Stephanus of Byzantium, a late and often unreliable compiler of a work on the correct forms of geographical names. He writes as follows: 8 « Ninoe, Aphrodisias in Caria, founded by the Pelasgian Leleges. And it was called « City of the Leleges ». Then it was called « Great city » (Μεγάλη πόλις). Then « Ninoe », after « Ninos ». Of these names, the only one worth consideration is « Ninoe ». All of Stephanus' information must have come from the work of a local historian, plausibly conjectured to be Apollonius of Aphrodisias, who probably lived in the imperial period, and whose work is known almost exclusively from citations by Stephanus.9 « Leleges » was the name traditionally given by Greeks, beginning with Homer, 10 to various indigenous inhabitants of Asia Minor, including, but not confined to, Caria. 11 Both « city of the Leleges »

- 6. Expressed e.g. Inscriptions d'Aphrodisias, p. 425.
- 7. On Amyzon see J. and L. Robert 1983: especially p. 90-92, 140-41.
- Stephanus of Byzantium, s.v. Νινόη, ed. Meineke 1849:476 (cf. p. 438).
- 9. The meager fragments of Apollonius of Aphrodisias are collected in Müller, Vol. IV, 1851:310-14. The statement of Bean (1971:221), that Apollonius lived in the 3rd century B.C. and came from Egypt (whence he concludes that the name « Aphrodisias » goes back to the 3rd century) stems from a series of misunderstandings. If Apollonius was indeed an άρχιερεύς, as stated by Suidas, he was probably in charge of the local cult of the emperors (on the title άρχιερεύς see Robert 1966a:414 n.3.
- 10. Iliad 10.428.
- 11. See e.g. Herodotus I, 171; Strabo XII.7.3.; Athenaeus 6, 272, quoting another local historian of a Carian city, Philip of Theangela « On the Carians and Leleges ».

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^{1.} I owe a great debt to G. J. Toomer of Brown University for reading my text and supplying the essential corrections and research for this section.

Earlier references to « Aphrodisias » which are sometimes mistakenly attributed in modern works to Aphrodisias in Caria are shown by the context to be to other places of the same name, e.g. Livy 33.20 (197 B.C.), which must refer to Aphrodisias in Cilicia.

^{3.} The favor of Rome towards the city and shrine of Aphrodisias is abundantly attested by inscriptions (see Reynolds 1982). The most famous literary passage is Tacitus, *Annals* 3.62, who specifically refers to Julius Caesar and Augustus.

^{4.} No. 6, a letter of Octavian as triumvir, and no. 8, the so-called « Senatus consultum de Aphrodisiensibus », which belong to the same series, are the only Hellenistic inscriptions from Aphrodisias which have been known much longer, having been copied by Sherard in the early 18th century.

^{5.} This event appears, on the evidence of the coins, to belong to the reign of Augustus: see Reynolds 1982:108.

and « great city » were probably taken from poems on Aphrodisias by patriotic Greek bards of the imperial period, and are irrelevant to the question of the early name. « Ninoe », however, may be a genuine survival of an earlier indigenous name for the site. In support of its genuineness one may note the existence of a cult of Zeus Nineudios at Aphrodisias. 12 If the indigenous name was indeed Ninoe, it was inevitable that local antiquarians of a later time, anxious to claim great antiquity for their city, should connect it with Ninos, an ancient king of Assyria and a great conqueror in Greek legend. 13 And in fact recent excavations at Aphrodisias have brought to light a relief of the 3rd century A.D. in which the hero, Ninos, explicitly identified as such, is depicted making an offering near an altar topped by an eagle. 14 L. Robert has aptly adduced the parallel case of Anineta, where Ninos was also celebrated as founder on imperial coinage. 15 However, one cannot exclude the possibility that the name « Ninoe » was a back-formation in the late period, after local patriotism had claimed Ninos as the founder of the city (starting from the cult of Zeus Nineudios).

Although the name Aphrodisias survived long after the conversion of the emperor Constantine and the establishment of Christianity as the official religion of the empire in the 4th century, the association with the pagan goddess of love eventually became too much for Christian sensibilities, and the city's name was changed to « Stauropolis » (« City of the Cross »). It became the seat of the Metropolitan Bishop of Caria. Hence in Byzantine times it was often called simply « Caria ». It is under this name that it referred to by Nicetas Choniates when he records its sacking by the Seljuk Turks in 1196,16 one of several such raids mentioned by Byzantine historians. These certainly hastened the decline of the city: although it was still the seat of a Metropolitan as late as the end of the 14th century, it was so poor then that the Patriarch of Constantinople had to assign it the revenues of other bishoprics.¹⁷ Soon thereafter it must have sunk to the status of the village which occupied the site in modern times, whose name alone (« Geyre », presumably derived from « Caria ») preserved the memory of its former eminence.

ENVIRONMENT

Many archaeologists attempt to relate the culture of a site in a functional manner to its environment (Vita-Finzi, 1978). In fact, some of the more recent research conducted is directed to sites and their environmental relationships. Culture, society and environment are intimately interwoven into a fabric within which a site, including all of its socio-economic practices, is patterned. Some theorists have linked sites and culture to geographic or environmental determinism.

A site activity may be altered, or even initiated by the environment. For instance, artifact manufacture may be confined by the type of rock deposits lying nearby. The environment of the Aphrodisians undoubtedly influenced their technology and their material culture, but it did not determine the uses to which the natural resources were applied. Before turning our attention to the results of excavation, let us examine various aspects of the site's environment — the external world in which the Aphrodisians carried out their activities, i.e., the site itself as a natural habitat. Even with our imperfect understanding and uncertain knowledge of the ancient environment and ecology, we can make some simple observations regarding these factors.

Geography

Anatolia, the Greek name for Asia Minor, the area that comprises modern Turkey, is a complex land form that consists of a peninsula with an interior plateau surrounded by mountains that gradually fall off to low lands or to seashores of the Mediterranean, Aegean and Black Seas, or, to the Turkish straits. Although Turkey consists of a well-defined geographical area lying at the westernmost point of the Asian continent, it also includes a small arm of Europe — a part of the Balkan Peninsula — which represents 3 % of the country's area and is separated from Asiatic Turkey by the Bosphorus, the Sea of Marmara and the Dardanelles. These narrow straits are vital to the politics of the area.

The Republic of Turkey is 762,736 square km, plus 9,604 sq. km of marshes and lakes. Its present western frontier runs from Bulgaria to Greece; on the east it is bounded by the U.S.S.R., Iran and Iraq; on the southeast by Syria; and by the Black Sea on the north, the Mediterranean on the south, and the Aegean to the west. The seven major regions of the country are diverse. The Pontic mountains rise in the north and the Taurus mountains encircle the western and southern parts of the country. These two ranges meet to form a complex chain of mountains in the east. Turkey is physically disjointed

^{12.} See P. Paris and M. Holleaux, 1885:80.

^{13.} See e.g. Diodorus II.1.4 ff.

^{14.} Kenan T. Erim, 1978:324-5.

^{15.} L. Robert, 1980:332-4

^{16.} Nicetae Choniatae Historia ed. Bekker p. 655.

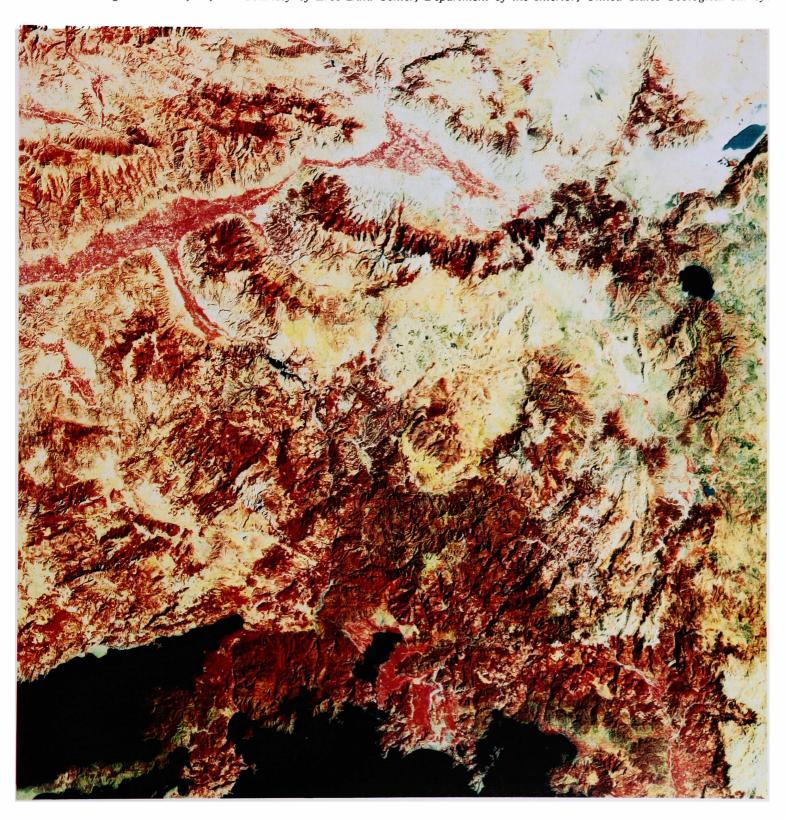
^{17.} See Wittek, 1934:114.

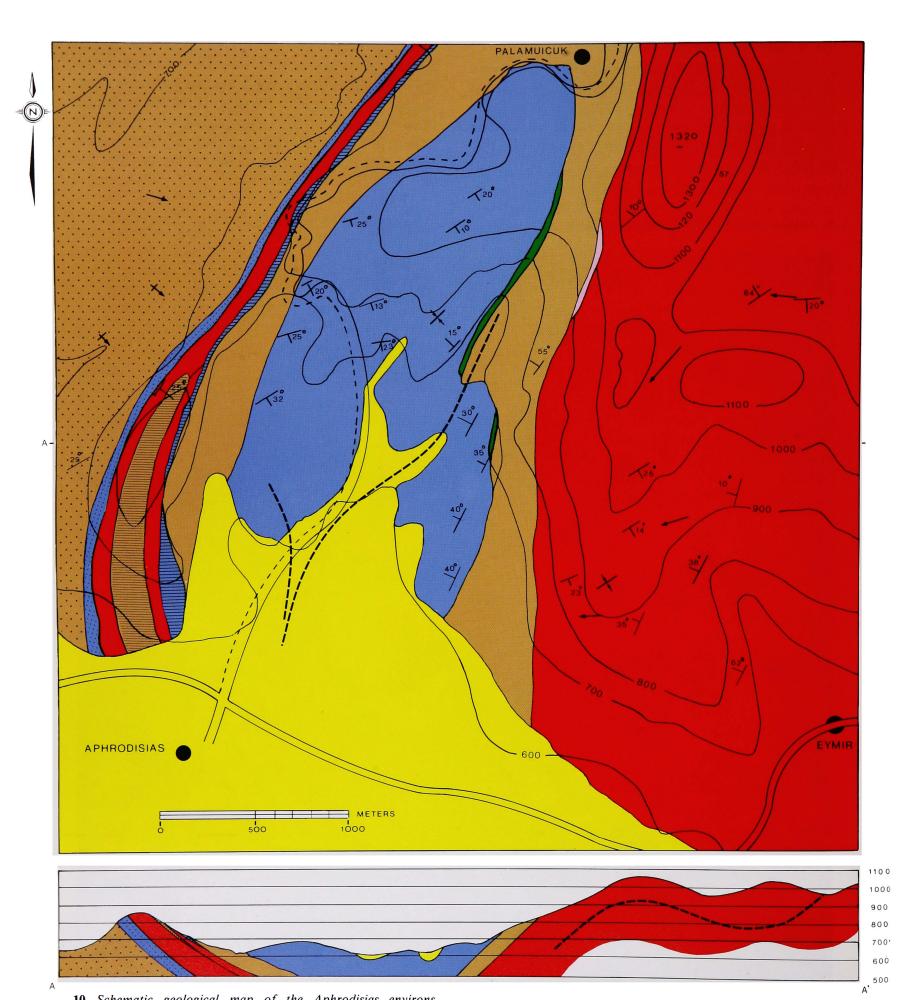
by these mountain ranges — it has neither a homogeneous nor a uniform geographic character.

Western Anatolia (W of longitude E) is better known in Europe and the Americas because of its classical interconnections with Greece and Rome. It is situated in a strategic geographical position, and since it is the center of trade and tourism, it is the most « westernized » part of the country.

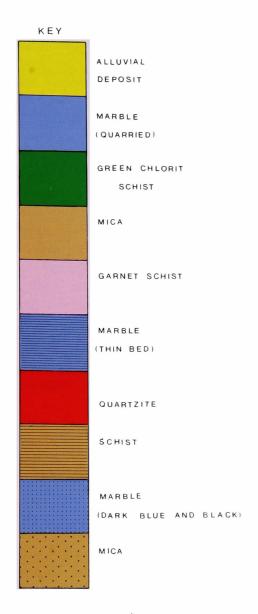
The connection between the prehistoric development and the geography of western Anatolia is both complex and intimate. The marked east-west alignment of the extraordinary mountain ranges running from the Central plateau into the Aegean, render its development peculiar when compared to the other geographical regions of Turkey. The Central Massif zone (part of which is known as the Central Plateau) includes the flat broad valleys and

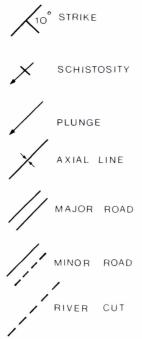
9. Landsat Image. Scale 1:3,369,000. Courtesy of Eros Data Center, Department of the Interior, United States Geological Survey.





10. Schematic geological map of the Aphrodisias environs Drawn by Mark Lesky 1972 (Redrawn by Mary G. Winkes).





troughs of the Gediz and Maeander Rivers extending inland approximately 150 km from the Aegean coast. In the interior of the country, the land becomes higher.

The Aegean coast is long, indented with harbors, and broken with islands and peninsulas, numerous faults of rift valleys and cliffs, caves and landlocked bays. The steep crest line of the Taurus rises above and follows the coast. Inland access is not easy except at a few points. In the western part of the country, there are a number of open plateaus and lakes, but the most important links between the interior and the coast are along the rivers, for the southwest, in particular the Maeander. The Maeander River is 386 km long and flows from the mountains of southern Phrygia west of Afyonkarahisar taking a winding course to drain southwest into the Aegean Sea, just south of the island of Samos. When the snow melts in spring, the Maeander swells and flows through isolated plains and steep mountain ranges to the sea. Flooding and erosion does occur in the alluvial marshlands, plains and valleys that lie along its course.

Geology

Landsat photograph: Figure 9.

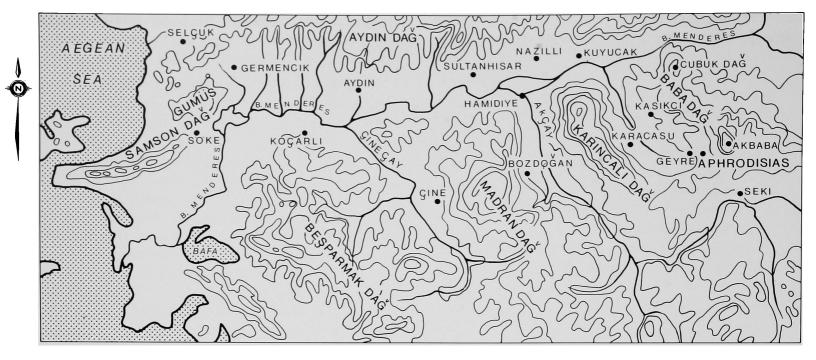
Aerial photographs of the site: Figures 8, 12.

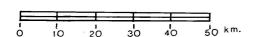
Schematic geological map: Figure 10.

The British Naval Intelligence Report (1945) devoted to Turkey has served as the source for much of the following information. Pınar-Erdem and İlhan (1977) include outlines of the stratigraphy and tectonics of Turkey.

For millions of years Anatolia has been an intensely active geological region; consequently its physical structure is complex. Among the most ancient rocks are schists, which were intruded by igneous masses. Sediments accumulated over this foundation. Some were carboniferous and created large coal beds; these were followed in Permian times by several limestones and sandstones. The folding that came about in later periods converted some limestones to marbles, and erosion exposed these deposits which have been exploited by man since antiquity. From the time these areas were first settled, they were quarried. This is particularly true of the marble and blue-gray limestone belt which extends southwest from Denizli to Milas and emerges again near Bodrum as well as in the Dodecanese islands of Cos, Kalymnos, and Leros.

Four major tectonic movements brought about the extensive uplifting and downfolding that created the modern topography of Anatolia with its three major mountain ranges: the Pontic, The Central Massif, and the Taurus. The first great movement in the late Palaeozoic period formed the Anatolian mass. Numerous chert





11. The Maeander Plain; Modern Towns and Topography. Base Map: Ş. Tül (1980) Plate 11.1 (Redrawn by Mary G. Winkes).

lenses formed from extrusion of submarine lavas. In the Middle Cretaceous period the second major folding took place, followed by a third during Middle Tertiary times. The result was the creation of a stable continental block in western Turkey. Deformation continued and altered the Oligocene units in southwestern Anatolia. Thrusting over Lower Miocene units near Antalya followed (Pınar-Erdem and Ilhan 1977:299-300). It is believed that the last compression occurred in the Late Miocene or Pliocene times. Again, movements and fracturing altered Anatolia to the extent that the entire region rose from sea level to its current altitude. Today the average height above sea level is 1240 m, and nearly 85 % of the land is above 500 m. Some of the lowest lying areas are the south and west coastal plains including Antalya, Adana, and the Konya basin — a sharp contrast to Mt. Ararat (5165 m) rising in the east.

Aphrodisias is situated between two mountain ranges. To the southeast is the Karıncalı Dağ (1699 m) and to its north-northeast is the Baba Dağ, which lies adjacent to the Çubuk Dağ range. The summit of Baba Dağ, Akbaba Tepe, lies ca. 13 km from Aphrodisias; it rises to a 2308 m height. These mountains and the topography of the Maeander valley are shown on Figure 11.

P. de Tchihatcheff (1853:461-462) writes:

« Ce massif composé de plusieurs chaînes, parmi lesquelles les plus considérables sont le Honas-dagh, le Zeītoun-dagh et le Baba-dagh, constitue un rempart dont la direction moyenne est de l'est à l'ouest et la longueur de près de dix-sept lieues. »

The botanist, E. Boissier, travelled to the area in 1842 and reports (Barbey 1890:19-20):

« Pour monter au Cadmus [Baba Dağ], on s'élève d'abord au sommet de ces collines calcaires qui ne sont que le penchant de longs contreforts descendus du Cadmus; elles forment les montagnes comparativement plus basses et assez étendues, qui sont interposées entre le plateau de Geyra et les plaines du Méandre... Tout cet ensemble présentait un aspect sublime que je n'oublierai jamais. Une petite coquille du genre Pupa se trouvait partout dans les fentes calcaires de cette sommité. »

Hills and plateaus constitute other forms of relief in the valley. Substrata of Karıncalı Dağ are composed of massifs of gneiss and mica schist of the Palaeozoic period, that are often cut by later deposits. In the south is the presence of limestone. In the substrata of Baba Dağ are the same Palaeozoic formations of mica schist, gneiss and limestone. The high plateaus of the valley contain limestone and graphite schist with crystalline marble lying above the limestone strata. The evidence of fossils (Cyprideis of Olessa, Candona sp. ilycypris expensa, Cypria) has led geologists to suggest that the valley took its present form in the Pleistocene period. The limestones have their origin in a lake formation, certain alluvial deposits were formed in the Tertiary era, and the humus belongs to the Quartenary period. Thus, an assortment of rocks formed in different periods with different colors and densities lie along side one another. The region is also characterized by numerous faults oriented east-west running parallel to the valley. These are more prominent in Karıncalı Dağ than in the Baba Dağ range. From time to time, adjustments take place and cause violent earthquakes (British Naval Intelligence 1945).

Louis Robert (1954:23, 25-26), who travelled extensively through the area in 1946, was a keen observer of the Tavas Plain and the mountain-surround.

« Depuis le village d'Avadan, on a une vue saisissante sur le plateau de Tabai, qui, avec sa bordure montagneuse, est posé devant le regard comme une maquette... c'est comme la scène d'un théâtre moderne vue des sièges de l'orchestre; on reconnaît, au fond, les agglomérations de Yerengüme et de Hirka devant les montagnes qui sont au pied du Boz Dağ; à l'extrémité gauche, la région de Vakıf et le Baba Dağ; à droite, au bout du plateau, les fortes hauteurs ou se cache Davas Kale.... Entre le plateau de Davas [Tavas] et cette région se dresse la formidable barrière du Baba Dağ, qui, avec son prolongement le Honaz Dağ, s'étend sur une soixantaine de kilomètres, revêtu en partie de forêts, en partie de maquis, les sommets restant nus. »

12. Aerial view of Aphrodisias (Photo: William Crovello).



L. Robert (op. cit. 23) quotes the description of the Rev. E. J. Davis who visited the area in 1872:

« À notre gauche, on voyait le mont Cadmus [Baba Dağ], dans toute sa longueur... Cette grande chaîne, avec ses trois principaux sommets, était d'une belle couleur cendrée de nuances variées; le pied en était couvert d'une épaisse forêt, mais toute la partie supérieure était nue, sauf le plus haut sommet à l'aspect de cratère de volcan éteint, qui était encore couvert de neige et s'élevait jusqu'à une hauteur de plus de 6.000 pieds. Devant nous, loin au-dessous, s'étendait la plaine de Dawas [Tavas], renommée pour son blé; sur le côté opposé de la plaine, à 7 ou 8 heures de distance, et s'étendant loin à droite, était la chaîne du Boz Dagh... dans l'antiquité Mont Salbacum, couvert de neiges perpétuelles... Encore plus loin à droite nous pouvions distinguer d'autres montagnes neigeuses, parties de la chaîne au-dessus de Muğla, et maintes chaînes plus petites s'élevaient de l'autre côté de la plaine. On était près du coucher du soleil ; le sommet du Boz Dağ brillait comme de l'or battu au soleil couchant, mais les ombres du soir s'étaient déjà installées sur la plaine sans nous empêcher de reconnaître les sombres forêts et le vert brillant du blé et de l'orage nouveaux. Involontairement nous tirâmes sur la bride et nous contemplâmes un moment avec admiration. »

The formidable Baba Dağ mountain range provided both protection and an ample supply of marble and clay for ancient sculptors and potters. In winter it is snow-covered, while in summer it is barren with white limestone crests and variegated darker jagged edges. Majestic summits rise above the site. Baba Dağ is rich and varied in its mineral resources. From prehistoric times its quarries provided various types of stone that were used by the inhabitants. Large quarry cuttings, which produced a blue-veined translucent fine quality marble, scar the mountain face 2.6 km northeast of Aphrodisias (Figure 13). This is known as Dağ Kesimi.

Typical rocks found in the valley include schists, flint or chert, limestone and marble, calcium carbonate, quartz and serpentinite. The positions of their deposits close to Aphrodisias can be found on the map (Figure 10), and they are briefly described.

13. The Marble Quarries, Aphrodisias 1980 (Photo: Sheila J. Ehlinger).



Schist. The mountains of the Dandalas Valley contain much mica schist. The schists at Aphrodisias are regionally metamorphosed and frequently found in shades of blue-gray or reddish pink. These schists were the foundation upon which later sediments accumulated.

Flint-chert. The word for flint in Turkish is çakmaktaşı or more properly, çakmaktaşı döven, meaning threshing sled stone. These are the same types of chipped flint that are inserted in the bottom of the threshing sleds that the Romans used (Latin tribulum or threshing machine). This device continues in use in the area today.

In the investigations for flint deposits, Bordaz (1962:16-17) found two sources both of which were located on the northeastern spur of Çubuk Dağ in the Maeander Valley. More will be reported of these investigations in the section devoted to chipped stone, Part 4, p. 240 ff.

Limestone and Marble. Some eroded limestone deposits, microgranular limestone, and silicious limestones are found along with veins of pure marble. The marbles at Aphrodisias are a metamorphosed limestone or recrystallized calcite. Some of these marbles are found to contain serpentine and are technically known as ophicalcites.

Calcium carbonate. Veins of this material, calcite, are found northwest of Aphrodisias at Kurudere (10-12 km), Aşılı Tepe (20 km), and at Kaşıkcıtepesi (25 km).

Quartz. A large percentage of the excavated chipped stone is quartz, which is in plentiful supply in the nearby mountain ranges. Many worked pieces are included in the chipped stone catalogue, but significant numbers of chipped quartz lumps are also found.¹⁸

Serpentinite. Geologically, serpentinite is a name ascribed to the parent rock, e.g., dunite serpentine occurs from an olivine rock and basite serpentine is from a hypersthene rock. We are not sure which of these rocks occurs near the site, but there can be little question that they are in the serpentinite family. Serpentinite is probably local, for so many of our tools are manufactured from it.

Soil

The Dandalas River Valley is approximately 14 km long and 5 km wide (Figure 7). It is composed of a rich alluvial soil of a variegated brown color (Munsell

18. Crystal quartz has been used for tools in various countries such as India and China and France where flint and obsidian are rare. We are grateful to Dr. George Harlow of the American Museum of Natural History, New York, for the identification of serpentinite. Further tests are now being carried out to identify its properties more closely.

2.5YR5/2; 5/4), ¹⁹ which appears throughout the excavations and represents the underlying component of the valley. The soil is largely composed of limestone and, though lacking humus, it contains iron and silica, making a suitable « terra rossa » for cultivation. Paths of ancient lava flows provide adequate drainage.

Water Supply - Hydrology

Snowy winters, precipitation and underground springs provide the source of Aphrodisias' plentiful supply of water. Snow remains on the slopes of the Akbaba Tepe until June. This source provides the main drainage area of streams that for many years have been diverted to serve the site, for throughout the long dry hot summer water forcefully flows through poplar-lined modern irrigation channels. It is also the watershed for the use of livestock. These streams which feed Aphrodisias today were, in antiquity, subsidiary sources of the Dandalas river (the ancient Morsynos), which in turn flowed as a southern tributary into the ancient Maeander river. The Dandalas River, known locally as the Geyre Çay or Dandalas Su where it leaves the Aphrodisias plain, flows approximately 50 km in a northwesterly direction towards the Maeander.

J. Bordaz (1962:4-6) researched the hydrology of the Dandalas :

« The easternmost part of this stream [the Geyre Çay], near Seki, is called the Ereci Deresi. It is said to be formed by two intermittent streams coming from the Avdan Dağ massif and by three from the Akbaba Dağ to the north, one of which is permanent, the Seki Deresi. The Ereci Deresi becomes the Eymir Çay near this village, and eventually the Geyre Çay as it enters Geyre... it receives numerous small tributaries below Karacasu from the chains of mountains to the east and west before meeting the Maeander.

An important source in the eastern part of the Geyre plain is the Kavaklar, a large spring on the southern side of the road in Seki, which is now used entirely in the village and does not flow to the river. But there are a large number of intermittent sources right in the bed of the Geyre Çay. This river, futhermore, receives water in the winter near Geyre from its two main affluents, the Suucurum (?) or Ayith Çüz, southwest of Geyre, and the Vargal or Balgar which has its source near Circivan, south of Geyre, on the slopes of Karıncalı Dağ.

The bed of the Geyre Çay is 1 km wide in places. The river branches off frequently, enclosing a large number of very small, fertile fields. There are settlements on both sides as well as on spurs in the center of the river bed. »

 Munsell, 1971 ed., Munsell Soil Color Charts., Munsell Color Company, Inc. Baltimore, Maryland 21218. All soil and pottery colors in this report have been referenced to these charts. Because the rivers may either dry up in summer, or do not provide enough water, the settlement may have been artificially irrigated in prehistoric times.

In classical times, the city had a massive irrigation system. Evidence indicates that there was a network of underground water canals, and a large aqueduct southeast of the village. Pausanias (I.36), in describing the cistern of sea water at the Erechtheum, remarked that, « this is no great marvel, for other inland regions have similar wells, in particular Aphrodisias in Caria. »

Bordaz (1962:6) reports:

« Reports obtained too late to be checked assert the existence of a large scale tunnel for water in the eastern slopes of the valley towards Seki. If this information is confirmed, it might lead to the solution of one of the most interesting questions relating to the city of Aphrodisias, which is known from inscriptions and coins to have depended for its water on the Morsynos (the modern Geyre Çay) and on water abducted from the Timeles which has not as yet been identified. L. and J. Robert hypothesized that the Timeles might refer to the Yenidere, which flows southeast of the Avdan Dağ in the Tavas plain (Robert 1954:48-49). The conduct near Seki, referred to above might provide the first confirmation of this hypothesis.

Once classical water sources are identified and the problem is solved as to where the various source(s) of supply were, an assessment might be then made of the prehistoric water supply. In prehistoric times, underground springs and perhaps a series of wells were dug. A well was reported during the excavations of Pekmez trench 2, unit 1468. In Site Field Notebook 52: p. 58, the water level was reported as « -12.30 below the surface. » This would indicate that the present water table lies at approximately + 0.76 above the + 0.00 site datum. It is not clear when this well was in use, but its remains suggest that it may have been used in the prehistoric period.

There are reported to be some 75 wells in the modern village of Geyre but none of this water is potable. Today the drinking water is brought to the village from Baba Dağ, where there is a large spring located in a plateau known as Mezartaşı Yayla. Water for irrigation is derived from springs and small streams that run off the Dandalas River.

Investigations at the site in 1966 revealed that the water table has risen since antiquity, as ancient remains have been located below its present level. M. Mellink (1964:269) suggests that this condition has also been found in Lycia. It also has been reported at Müskebi by E. Vermeule (1964:244-249).

Climate

Bioclimatic Map; Figure 14.

The lower coastal and southwestern regions of Anatolia are classed climatically as Mediterranean. This part of Anatolia, and western Anatolia in general, enjoy the most favorable climate in the country. It must be remembered, however, that there are contrasts within this zone. Dewdney (1971:35) more specifically describes the climate as a dry semi-continental variant of Mediterranean climate, or as a transition between Mediterranean and temperate continental. Winter coastal temperatures are higher than those inland. Annually, in the southwest, there are less than 10 days with snow, and less than 30 days of frost. (Central Anatolia has 80 days per year of snow and more than 125 days with frost.) Generally the summers are hot and the precipitation is limited to an average of 0.136 m from June to August. Other areas, like the west coast of the Thrace-Marmara regions, have more summer rainfall. In the winter months, the rainy season extends from November to March.

The meteorological station in Nazilli has furnished the following data, which provides additional criteria for the basic questions concerning the climate of the area. *Average annual rainfall*: 0.6166 m.

Average seasonal rainfall: Winter 0.3206 m; Spring 0.1388 m; Summer 0.0232 m; and Autumn 0.1361 m. Average annual days of rain: 71.9.

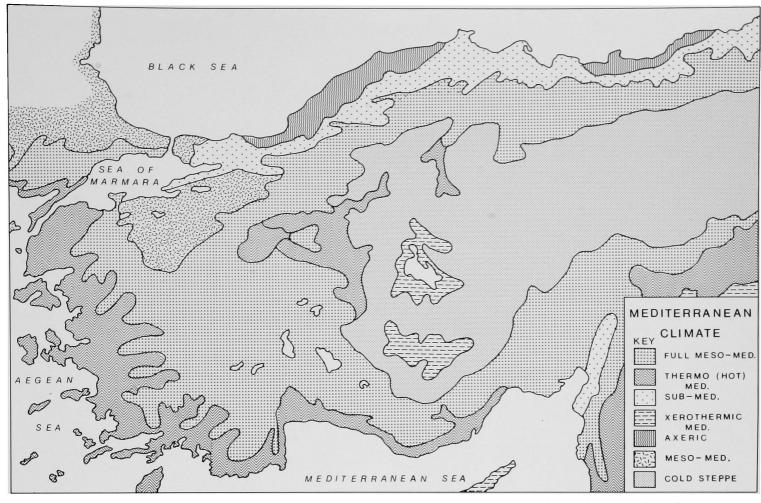
Other climatic conditions, days per year: Snow 3; Fog 1.5; Humidity 63; Frost 3.9.

Average annual temperatures: Maximum 24.5 C; Minimum 10.6 C; Average 13.9 C.

Winds are predominantly from the southwest; those that come from the northwest are infrequent.

Flora

Western Anatolia is the most fertile part of the country. The southwestern Anatolian coastline consists of a fertile strip of land which is backed by steep ranges enclosing plateaus and valleys. Aphrodisias, situated on a fertile valley floor, supports vegetation characteristic of other Mediterranean regions. The valley is optimum for agriculture and produces grapes, figs, pomegranates, pears, peaches, olives, tobacco, some sunflowers, and cotton. Other than wild grasses, staple grains are wheat, barley, rye, oats and maize. There are a few scattered pine forests — primarily *Pinus terebentinus*, cedar, oriental beech, and juniper; small oak or scrub oak — *Quercus aegilops, Quercus mirbeckii*, and *Quercus calliprinos*, and shrubs.



14. Bioclimatic Map of western Anatolia. Base map: UNESCO-FAO 1:5,000,000 (Adapted by Mary G. Winkes).

The botanist, Edmund Boissier (1890:21) describes the valley as he saw it in 1842:

« Arrivé au sommet des collines et descendant la pente méridionale, je les trouvai couvertes d'épais buissons du Cistus laurifolius L., dont les fleurs blanches ornaient tout le paysage... La plaine ellemême est formée d'un terreau fort profond et un peu argileux; presque partout cultivée, son aspect rappelle absolument celui de certaines parties plates du milieu de l'Europe : arbres fruitiers chétifs, tous d'espèces non méditerranéennes, cultures de froment... Rien absolument dans cet aspect n'eût pu faire croire à un observateur qu'il se trouvait en pleine Asie; et cependant, chose remarquable, la végétation spontanée d'un peu plus près offrait tous les caractères des plateaux du centre de l'Asie et différait déjà totalement de celle de Smyrne [Izmir], par exemple. »

L. Robert (1954:24) also provides a comprehensive description of the vegetation:

« ... la Messogis, rappel de la plantureuse vallée du Méandre, de ce jardin de figuiers, de citronniers, de grenadiers et d'oliviers, — vers Nazilli, où les caravanes de chameaux du pays de Tabai [Tavas] et d'Avdan apportent les cupules du chêne à vallonnée (sic), les étoffes et les tapis, et d'où elles rapportent les figues, les raisins, les légumes, les paniers de roseaux.

À voir ainsi à la fois deux des bornes de la Carie, aux pieds desquelles sont des pays si différents, on sent profondément la variété de cette province et de ces genres de vie. »²⁰

In antiquity it is probable that woods covered the mountains which now are, in great part, denuded. Morris (1972:422) states that the habitat of western Anatolia underwent a destructive exploitation by man during classical times which denuded forests and depleted soils.

Seed samples from the prehistoric levels were examined by Professor Jack R. Harlan, ²¹ who identified barley (arpa), a mixture of the two-rowed and six-rowed; proso or hog millet (Panicum mileaceum) and oats. The excavators identified flax; Turkish bağkla, one of the plants which grows among oats; a seed in Turkish called fi or nohut and wheat and rye. ²²

The feeding plain surrounding Aphrodisias is shown in an aerial photograph on Figure 15.

- 20. For a wealth of information on the vegetation of the valley, see L. Robert (1954:26, note 1).
- 21. Professor of Plant Genetics, Department of Agronomy, University of Illinois, College of Agriculture, Urbana, Illinois. A letter dated January 31, 1969 from Jack R. Harlan identifying these samples was found in the Field Notebook no. 18 of Acropolis trench 3: p. 105
- 22. Acropolis trench 4, Field Notebook 7: p. 311, 313.



15. The Dandalas Valley feeding plain from the marble quarries, looking S (Photo: Sheila J. Ehlinger).

Fauna

Modern animal husbandry includes sheep, goat, cattle (less numerous in the Maeander Valley), and poultry. Modern religious influences limit the selective breeding of the pig. The identification of species that were found in the prehistoric deposits include domestic cattle (Bos taurus), domestic sheep (Ovis aries), domestic goat (Capra hircus), domestic and wild pig (Sus scrofa), fallow deer (Dama dama), red and roe deer, dog (Canis familiaris), and some horse remains that were not identified by species. The faunal study is presented in Part 3 by Pam Jean Crabtree and Janet M. Monge.

Shells: Also in Part 3, a contribution by David S. Reese is devoted to the fresh and marine shells found in the prehistoric deposits. These include snails and fresh water molluscs that are probably local in origin, as well as marine species that were imported from the Aegean coast. Among the fresh water shells identified are Melanopsis praemorsa, Unio and Theodoxus anatolicus.

Communication

The geographical relationship of the prehistoric and classical sites lying along the Maeander River is shown in Figure 16. It is known that in the classical period Aphrodisias was located on the road which connected the five ancient cities of the Tavas Plain (Strabo Geography 12.8.13). The ancient Maeander flowed across northern Caria and in addition to Aphrodisias, the classical cities of Laodicea, Magnesia and Miletus lay on or near its banks. In classical times, Aphrodisias was situated on the Carian-Phrygian or the Carian-Lydian border. Many authors place it in Caria, but Strabo (Geography 12.8.13) lists it among the cities of Phrygia. Even though the border between Caria and Phrygia is unclear, the Baba Dağ (Salbakos) range acts as the natural border between the two provinces. Aphrodisias must, therefore, be considered a border city on both the north and the east. On the Carian-Lydian border, it lies southeast of Antioch on the Maeander, situated at the confluence of the Dandalas

and Maeander Rivers. K. T. Erim (1979:68) mentions that the city's position was strategic in the 11th to 13th centuries A.D., when it was captured four times by the Seljuks between 1080 and 1260.

The prehistoric picture, however, is not as clear. The sea coast is confined by mountains. But, preclassical overland trade routes and communication from Aphrodisias might have been possible north to the Maeander Valley, or perhaps via numerous early sites to the west such as Medet Höyük located 8 km south-southwest of Tavas, Solmaz Höyük (Lloyd and Mellaart 1962:70), and then north to Hamidiye where the Maeander is navigable. This is an easy route from the coast via the Hermos Valley, the Buldan Pass, Denizli and Cardak. Aphrodisias is not directly accessible from central Anatolia, but from the Konya Plain to the southwest one of the great trade routes led to the Aegean Sea from Afyon or through the great mountain passes extending from Yalvaç to Bozkır, to Dinar, and to the Maeander Valley and the Hermos River. Another road led from Afyon northeast to Kütahya and from there to Troy via the Balıkesir Plain. Today, as probably in antiquity, natural communication, particularly in the southwest, is oriented east-west. A series of fertile alluvial plains, each 10-12 km wide, lie along these great rivers. Smaller valleys and plains are separated by mountain ranges around the area.

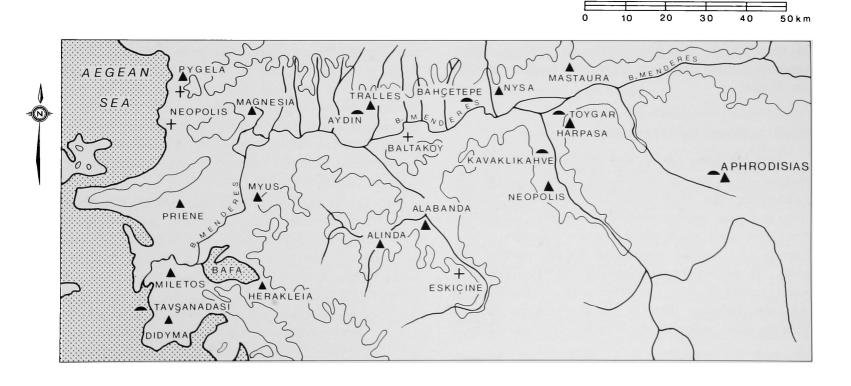
Huxley (1962:295) states that routes from the Aegean coast « ...do not appear to be easy to cross, even at closer acquaintance; indeed they become more bold and impressive. »

Aphrodisias is only 129 km east to Miletus and to the Aegean sea. Yet still unexplored communities may have been settled between Aphrodisias and the coast. At short distances from the present Aydın-Karacasu-Aphrodisias road, which twists its way through Maeander Valley's rocky hills and pine-forested plateaus, other prehistoric settlements have indeed been located. Mellaart (1954:179), who investigated portions of this area in the 1950's, stated,

« ...mounds on the southern plateau show the presence of settled agricultural population from the Chalcolithic period onwards. »

Four-hundred Early Bronze Age sites in southern Anatolia were also surveyed by Mellaart (1954:179) between the Cilician gates and Denizli, east of Aphrodisias. Thus the site was placed in a relatively strategic position for assimilating influences from culturally related areas.

Approximate travel by donkey could have taken 4-5 days to the Aegean, and 1½ days to either Beycesultan or Burdur.



HÖYÜK MOUND

▲ CLASSICAL SITE

+ PREHISTORIC REMAINS

RESEARCH AND EXCAVATION AT APHRODISIAS

Investigation of the site prior to 1961

Archaeological discoveries at Aphrodisias prior to 1961 began with the eighteenth century visits by a number of scholars. The first European known to have visited Geyre was William Sherard, in 1705. He was British consul at Smyrna, and a botanist (a pupil of the eminent French botanical writer Tournefort). Thanks to the inscriptions which he copied on the spot, the site was immediately identified as ancient Aphrodisias. During the course of the 18th and 19th centuries numerous other Europeans visited Aphrodisias, copied inscriptions, and described and depicted the monuments which were visible. But there were no excavations before the 20th century. 25

In 1892 Hamdi Bey, Director-General of the Imperial Museum in Istanbul, was inspired by a visit to Aphrodisias to plan an excavation. This was not actually begun until 1904, under the direction of Paul Gaudin, a French engineer who was Director of the Smyrna-Kasaba railroad and an amateur archaeologist. In that year a site plan was drawn up including the principal monuments surviving above ground as well as those discovered on the excavation. In 1905 the excavations were continued with the cooperation of the French Ministère de l'Instruction Publique, but then ceased, apart from some investigation of the baths of Hadrian in 1913. In 1937 an Italian expedition under G. Jacopi (1939-1940) made substantial discoveries.

Area Surveys for Prehistoric Remains

Comprehensive surveys in Caria for early prehistoric remains have yet to be conducted. No surveys for Palaeolithic sites have been undertaken even though there is a large limestone massif on the Boz Dağ close to the Geyre plain which might produce favorable results. Surveys of Neolithic remains in Turkey include four areas: 1) the well-known Neolithic culture of Cilicia in south central Turkey; 2) three areas in southwestern Anatolia, including those of the Konya Plain and the Pisidian lakes region (Lake Beyşehir and Lake Eğridir)

- 23. Op. cit., note 1, supra.
- 24. A summary list of these is given by Cormack (1955:5-7). An essential corrective and supplement to this is L. Robert (1965a: 111-16). There is much valuable information on some of the travellers in J. and L. Robert 1954 (see index s.v. Aphrodisias).
- 25. A good account of the earlier excavations is given by Kenan T. Erim (1967:233-243).
- 26. Gaudin's section of Aphrodisias has been redrawn for Figure 6.

where sites of the early Neolithic Çatal Hüyük culture have been found; 3) the vicinity of the Burdur and Acı lakes; and 4) in southwestern Pisidia. These last two are areas where sites of the Hacılar culture (Late Neolithic - Hacılar Levels IX-VI) have been located (Mellaart 1961b:60). Mellaart (1962) published an outline sketch map of both the Catal Hüyük and Hacılar culture zones indicating that Hacılar material had been found in the Tefenni plain southwest of Burdur; in the Elmalı plain in Lycia; near Denizli at two sites on the banks of the Ak Cay, close to the Maeander; near İsmir and Edremit on the Aegean coast; and on the island of Chios. Further, an aceramic Neolithic phase excavated at Hacilar (Hacılar I-VII), that precedes a gap between it and the Late Neolithic periods, has not been discovered anywhere else in southwestern Anatolia.

The Chalcolithic in Anatolia has been found in the Pisidian lakes area and the Konya Plain. No Chalcolithic sites were found west of 29° 30′ meridian east until 1961 when D. French (1961:101) located Beycesultan-type Late Chalcolithic pottery sherds in the valley of the Ak Çay at a site close to the Maeander, and at three other locations along the upper reaches of the river.

Surveys of areas contiguous to Aphrodisias have located one pre-classical site, Medet Hüyük, situated near the modern town of Medet (Figure 4), 8 km south-southwest of Tavas in the Tavas Plain. Sherds and chance finds (Joukowsky 1985) collected from this mound and its surrounding area were dated to the Early Bronze Age. Further afield, two Early Bronze Age sites were found near Denizli (Figure 4), and five were discovered in the Acipayam Plain. A great number of Early Bronze Age sites have been excavated in western Anatolia: the first five settlements of Troy (Blegen *et al.* 1950, 1951), Beycesultan Levels XIX-VI (Lloyd and Mellaart 1962-72), Karataş-Semayük (Mellink 1964-75), to name but a few. In addition, there are numerous sites located in the southern Sporades.²⁷

As far as the Late Bronze and Iron Age sites are concerned, the situation becomes more complex. Aside from Mellaart's work at Beycesultan, southwestern cultural horizons are far from clear. J. Bordaz (1962:11) wrote of the survey he undertook in 1962:

- « Previous surveys for later pre-classical remains generally indicated that Caria did not seem to be a favored area of prehistoric occupation. Too few sites had been found in the areas surveyed relatively to those discovered further to the east or north. A priori, however, it would appear unlikely that the Hellenistic city of Aphrodisias was not preceded by earlier settlements in the Geyre plain. »
- 27. Sites include The Heraion on Samos (Milojčić 1961), Thermi on Lesbos (Lamb 1936), and Poliochni on Lemnos (Bernabò-Brea 1964).

Although Caria is fairly well known in the classical periods through the research of L. and J. Robert (1937, 1954, 1965, 1966, 1966a, 1980, 1983) and the New York University excavations at Aphrodisias, it remains little known in prehistoric periods.

Classical Research and Excavations 1961-1982

In 1960, after a preliminary reconnaissance of the site, Kenan T. Erim, Professor of Classics at New York University, was awarded the concession to excavate the site of Aphrodisias by the General Directorate of Antiquities and Museum of Turkey. Excavations commenced in 1961 and have continued annually under K. T. Erim's direction to the present. The discoveries of spectacular sculpture as well as the excavation of Early Christian and Classical monuments including a theater, an enormous stadium, an odeon or concert hall, an agora, several baths and private residences, city walls, and most recently, the Sebasteion, have been reported in various periodicals. At present a full study and final publication of these and other important architectural and artifactual discoveries is being prepared (See the bibliography of the site's classical remains in Erim 1976:69-70).

HISTORY OF PREHISTORIC INVESTIGATIONS 1967-1972

Toward the end of the first season of excavation, K. T. Erim suspected that both the Acropolis and Pekmez mounds contained remains of prehistoric settlements. K. T. Erim then invited J. Bordaz of the University of Pennsylvania to survey the site itself and the Dandalas Valley for prehistoric remains (Bordaz 1962:1). In order to explore and discover the settlements of the Acropolis and Pekmez mounds, it was decided to excavate.

The modern investigation of prehistoric Aphrodisias can be divided roughly into three successive phases. The first phase includes the earliest excavations for prehistoric remains undertaken in 1966 after prehistoric artifacts had been recognized both from the classical excavations and surface scatters. These investigations, supervised by Stephanie Page, were exploratory but confirmed that the site contained prehistoric deposits that needed further exploration by excavation.

The second phase of this work was begun in 1967 and continued until 1974. Until 1967 stratified prehistoric deposits of Aphrodisias were unknown. The first impor-

tant prehistoric excavations were carried out under the supervision of Barbara Kadish in 1967-1972, and in 1973-74 excavations were continued under the supervision of Ronald Marchese. These years of intensive excavation yielded important information regarding the nature of the prehistoric deposits. To date, only preliminary reports have been published (Kadish 1969, 1971; Marchese 1976).

At the beginning of the 1975 expedition, K. T. Erim asked the author to be responsible for a detailed and comprehensive study and publication of the site's early periods. Thus, during the third phase of these investigations, from 1975-1983, the emphasis shifted from active excavation to the analysis of artifact corpus resulting from nine years of excavations. These investigations were carried out under the supervision of the author. This work was undertaken on the condition that no further prehistoric excavation should take place until a report describing the previous seasons of field work and the artifacts recovered from these excavations had become part of the public record.

Site selection: In the 1966 season, two test soundings were opened: Acropolis trenches 1-2 and Kuşkalesi 1. The results of these soundings were promising, and in 1967 three more soundings were opened: Acropolis 3, Kuşkalesi 2 and Pekmez 1. These soundings were supplemented by seven other soundings in the succeeding seasons of 1969-1974. The total area of these excavations totaled some 803 square m; ca. 561 square m on the Acropolis; ca. 134 square m on the Pekmez mound; and 108 square m in the Kuşkalesi area (Figure 5). Because the water table has risen since antiquity, bedrock was not reached in any of these areas — it lies somewhere below the present water table level.

With the exception of the Kuskalesi sondage (Figure 5, Area C), the positions of the soundings of the Acropolis (Figure 5, Area A),28 and Pekmez (Figure 5, Area B) were selected because of their proximity to the highest parts of the mound. The conjecture was that these areas should have been occupied at all major periods in the site's history. A trial trench on the Pekmez mound was also excavated with the expectation that it might be different in character from that of the Acropolis. The choice of the area to be excavated was selected after a preliminary reconnaissance. The excavators knew that the axial center of the mounds would provide them with the presence of a habitation deposit. However, to locate the excavation at the very top of the Pekmez and Acropolis mounds posed problems, for they either constituted a farmer's field, as in the case of Pekmez, or were on too steep an incline and access was difficult, as in the case of the Acropolis.

28. From the field report of Stephanie Page to K.T. Erim in 1966.

Year excavated	Excavation dates	Acropolis trench	Dimensions	Pekmez trench	Dimensions	Kuşkalesi trench	Dimensions
1966	6/29-7/23	1	3 × 10 m			1	6 × 9 m
	7/1-7/23	2	3.50 extension				
			of trench 1				
					6 × 9 m		
1967	7/14-8/22(?)	3	9 × 6 m	2	narrowed to	2	$6 \times 9 \text{ m}$
	. ,				6 × 2.5 m		
1968	6/23-9/5	4	8 × 6 m				
		5	$9 \times 6 \text{ m}$				
1969	6/24-9/7				8 × 10 m		
		6	6 × 10 m	2	narrowed to		
		6 7	$6 \times 11 \text{ m}$		Test Trench A		
					2 × 1 m		- W. W.
1970	?	7	continued	2	Test Trenches B and C		
1971	7/1-9/5	8	8 × 10 m				
		9	8 × 10 m				
1972	7/1-8/28	Continuation of work on trenches 8 & 9					
1973-1974	7/31-8/31	Trench 6 extended 7 × 7 m					

TABLE 1. CHART OF APHRODISIAS PREHISTORIC EXCAVATIONS

Grid and Datum Points: At the beginning of the excavation in 1961, a N-S/E-W grid with 200 m ordinates was surveyed and tied in with the Turkish Government survey stations. During the years of excavation, all soundings were begun within this grid (Figure 5). Each sounding, called a trench, was excavated as an independent entity; it was laid out according to the overall site grid and can be identified by its area (Acropolis, Pekmez, Kuşkalesi, or Areas A, B and C, Figure 5) and its number. All references in this text are based on true north. A zero datum point was established on the orchestra floor of the Roman theater from which all measurements were taken. All depths were recorded as + 00.00 above this datum control, i.e., orchestra « 0 ». The surface of each trench was registered as a +, or plus, to the Datum 0 of the orchestra, and depth measurements taken from each surface were then registered as a -, or minus, from the surface.

For example, the measurements for the Pekmez mound, which is approximately + 13.00 m above the Orchestra 00.00, were taken from the actual positions above the datum control; in Pekmez trench 1, the elevation is + 13.07 m, and for Pekmez trench 2, the

elevation is + 13.06 m. Thus most excavated deposits were recorded as minuses from their respective datum points. Subsequent subdatum points were established in each trench to provide uniformity and ease of recording (Kadish 1969:53; 1971:121; and Marchese 1976:393, note 22).

Terminology

The following definitions were those used by the original excavators and are employed throughout this volume.

Area: The area consists of an excavation field. As noted above, three fields were designated: the Acropolis mound, the Pekmez mound, and Kuşkalesi. Areas are defined on the site plan, Figure 5.

Trench: A trench is a subdivision within an area. The prehistoric excavations at Aphrodisias consist of thirteen trenches numbered with Arabic numbers: Acropolis trenches 1-9; Pekmez trenches 1 and 2, and Kuşkalesi trenches 1 and 2. They can be found on the site plan Figure 5, and Table 1 presents a chart of the areas and trenches excavated by year. Trenches varied in size.

A Test Trench is a probe or subdivision of a trench; it was given a capital alphabetic designation, i.e., Test Trench A, Pekmez trench 2. Test trenches were excavated to test the stratigraphy.

TABLE 2. APHRODISIAS TRENCHES AND THEIR ASSIGNED UNIT NUMBERS

TRENCH	Levels	Unit Numbers
Pekmez trench 1		1401-1418
Pekmez trench 2		1450-1599
Acropolis trenches 1-2*	19-1	
Acropolis trenches 3	5-9	200-299
Acropolis trench 4		300-374
Acropolis trench 5	6B-7B	400-549
Acropolis trench 6	4-3	
Extension	IIID	
Acropolis trench 7	2-7	550-799
Acropolis trench 8		2000-2999
Acropolis trench 9		3000-3999
Kuşkalesi trench 1	11-7	
Kuşkalesi trench 2	10-5	

Unit: Unit was a term used by the excavators for any distinct layer or feature, natural or cultural, that appeared in a trench or complex. Examples of units were soil lenses, layers, surfaces, occupational debris, fill, pits or other features, such as hearths. However, units may have been artificial and may not have corresponded to any physical or structural feature; they, therefore, may have contained a natural earth deposit with a uniform character. Each unit occupied a space that, theoretically, had a three-dimensional framework and had been defined according to its N-S and E-W coordinates. Unit numbers were designated by Arabic numbers that were given three or four decimal places; these were attached to field notes and objects. Sets of unit numbers were numbered consecutively for each trench (for Acropolis trench 3, the unit numbers were in the 200's (201, 202 ff.); for Pekmez trench 2, the numbers are in the 1500's and so on). In Table 2 the listing of units for each trench and the unit numbers assigned to them are presented.

Theoretically, sheet plastic transparencies of horizontal and vertical units were superimposed on scale drawings of balk sections or horizontal plans (including plans of architectural elements) for maximum analysis of strata.²⁹ The recording of the excavation by the unit was the basic device of documentation at Aphrodisias.

Complex: A complex was a major coherent element of the trench. It was the term used for a room, courtyard, or

installation that extended throughout one trench. Complexes were assigned either Roman numerals or Capital letters by the field supervisor for the trench. The same numbers may have been used for more than one trench, so caution must be excercised to associate a complex with a specific trench.

Level: This term is used to designate occupational levels up to the point where unit numbers in triangles, beginning with \triangle , \triangle , for the uppermost deposits including the pre-excavated surface. These deposits were usually disturbed to a depth of ca. 2.5 m by Byzantine and modern buildings. For the purpose of this volume, we have deleted the triangles in the discussion and simply call these, Level 1, Level 2, and so on. Thus Acropolis trench 1 Level 5 refers to the fifth archaeological deposit encountered in the excavation of Acropolis trench 1. In the recording of Acropolis trenches 1 and 2 and 6, and Kuşkalesi trenches 1 and 2, the unit system was not employed, thus only level numbers were used to designate these deposits.

Period: The excavators related major phases of occupation to one or more periods, (« Tentative chronological chart »: Kadish 1971:123, Ill. 2; « Tentative Chronological Chart: Western and Northern Slopes; Acropolis trenches 6, 8 and 9, » Marchese 1976:413). In Anatolia, these period divisions have been tentatively assigned on the basis of pottery and architectural features, and with radiocarbon analysis. At Aphrodisias, these divisions were not completely coordinated with Anatolian chronology; the coordination between the period chronology and the stratigraphy is tentative, but the term period will be employed until the stratigraphy can be verified by future excavation.

Publications

The results of radiocarbon analyses taken from the prehistoric excavations had been published by B. Lawn in Radiocarbon 1971(13):369-371, 1975(17):204-205, and 1977(19):225. K. T. Erim published annual comments on the progress of the prehistoric excavations in Türk Arkeoloji Dergisi 1961 12(1):14; 1966 15(2):56; 1967 16(1):70-71; 1968 17(1):43-45; 1970 18(2):88-89; 1971 19(1):60-62; 1973 20(1):67; 1974 21(1):42-43; 1975 22(2):78; 1976 23(1):29; in Anatolian Studies 1968(18):33-34; 1969(19): 14; 1970(20):22; 1971(21):28; 1972(22):35; 1973(23):23-24; 1975(25):20; 1978(28):11; 1979(29):188; and Anatolica 1967(1):29-30; 1968(2):52-55; 1969-70(3):48-49; 1971-72(4):40-44; 1973-76(5):88. In addition K. T. Erim presented three National Geographic Society Research Reports: « The 'Acropolis' of Aphrodisias in Caria: Investigations of the Theater and the Prehistoric Mounds 1966-1967 », 1973a:1-3; 101-112; « The 'Acropolis' of

^{29.} From an informal report by C. Winters, trench supervisor 1971-1972. None of these transparencies, however, were located.

Aphrodisias in Caria: Investigations of the Theater and the Prehistoric Mounds, 1968-1970 », 1974a:102-103; and « The 'Acropolis' of Aphrodisias in Caria: Investigations of the Theater and the Prehistoric Mounds, 1971-1977 », 1978:202-203.

At present, the published records devoted exclusively to the prehistoric remains are limited to the three preliminary reports. B. Kadish published the results of the 1966-1967 excavations in *The American Journal of Archaeology*, (1969:49-65, pls 25-30), and the results of the 1968-1969 excavations in *The American Journal of Archaeology* (1971:121-40), pls. 25-30). R. Marchese published the results of the excavations of 1971-1973 inclusive in *The American Journal of Archaeology* (1976:393-413).

The material published by B. Kadish in *The American Journal of Archaeology* covers a summary of S. Page's excavations on Acropolis trenches 1 and 2, and Kuşkalesi trench 1; B. Kadish's excavations on Kuşkalesi trench 2, Pekmez trenches 1 and 2, and Acropolis trenches 3-5, and the Bronze Age deposits of Acropolis trenches 6 and 7. R. Marchese's publication is confined to the excavations of Acropolis trench 6 (the Iron Age deposits), and Acropolis trenches 8 and 9. Some of the finds and commentaries of this work have also been published by M. Mellink in her annual documentary on the excavations in Asia Minor for *The American Journal of Archaeology*, (1963-1979, see bibliography). All of these publications, however, are preliminary statements.

It is clear that B. Kadish and R. Marchese made farreaching discoveries in these excavations. Far more than anyone could have realized — for over a semi-continuous 4000-year life span, Aphrodisias demonstrates either close links with co-existing cultures or manifests an independent development. Nevertheless, neither Kadish nor Marchese had the opportunity to produce a reanalysis of their earlier work. Although their reports put the levels, periods and significant finds into some perspective, a more detailed and analytic study of these remains is needed to provide a major source for early Anatolian cultural history in general, and that of the Anatolian southwest in particular.

RESEARCH 1975-1984, DESIGN AND IMPLEMENTATION

As previously mentioned, the third phase of the prehistoric Aphrodisias project has stretched over nine years (1975-1984). The general area of research interest was established by deciding that our first investigations should center primarily upon an analysis of the prehistoric levels of Aphrodisias, i.e., the stratigraphy and recovered artifacts, and the mounds' immediate surroundings. If time permitted, these results would then be set against a regional problem-oriented research project. Implementation of research began early in 1976 when a feasibility study was conducted to determine the scope and priorities for research. I selected a formal procedure that guided the research process into a series of stages. A proposal was written and submitted to K. T. Erim of New York University, the late Jean Deshayes of the University of Paris, and to sponsors to determine interest and support for the project. What was clear was that this project could not have been attempted without the interest and expertise of archaeologists who volunteered to define and carry out these problem-oriented objectives.

Many methods of data acquisition were used. Raw data from the excavations were processed in the field laboratory located in the site headquaters. All facets of this processing were supervised by the author who was assisted by members of the field research staff. Following the various stages of processing, objects were then placed in storage in the site storerooms or were turned over to the Aphrodisias Museum.

The prehistoric project staff included the director (the author) and three supervisors. These four people served as the nucleus of the work force. The project director was responsible for the overall planning, the writing of research proposals, feasibility studies, and the purchasing of supplies. Provisional assessments of this work have been published or treated in dissertations or in theses as these studies were completed. (See bibliographic references to Ehlinger, Joukowsky, and Léon Leurquin).

Reconnaissance Surveys

From 1970 to 1980, Şükrü Tül, a student of classical archaeology at Ankara University, undertook a survey of the Lower Maeander Valley. The results of this survey will serve as a basis for future studies of the area. A summary appears in Appendix 1.

Reconnaissance research was also directed to the Dandalas valley region in order to locate undocumented areas of prehistoric activity. This survey, planned by the author in 1980, was carried out in 1982 by J. Léon Leurquin and Ş. Tül and assisted by T. Sezer and A. Gaffaroğlu, representatives of the general Directorate of Antiquities and Museums of Turkey. A summary of this work appears in Appendix 2.

Site Surface Surveys

In 1977, hot air balloon aerial reconnaissance was undertaken by Julian Whittlesey and members of a team directed by Cevat Erder of the Middle East Technical University at Ankara. This survey included direct observation and a variety of photographic recording formats (Figures 8, 17). In addition, this coverage produced a good picture of cropmarks and shadows of concentrated artifacts that surrounded the site itself.

Subsequently, in 1978, the author undertook a topographic survey with compass, theodolite, and tape of the S side of the Pekmez mound and a detailed contour map of that site was completed (Figure 20). As the Pekmez trench 2 datum point, originally established by B. Kadish, could not be located, an arbitrary datum point was established on a boulder, which was marked to provide elevation control for the work.³⁰

Published Reports

In 1975, background research was begun in order to document the relevant previous archaeological work at the site. The first data analysis undertaken involved an indepth study of the published preliminary reports by B. Kadish and R. Marchese and other written records, such as J. Bordaz's impressions of the area (Bordaz 1962).

Field Notebooks

The basic objective of our study of the field notes was to gain an understanding of the original excavation mechanics and documentation of the sequence of the site that had been directly observed through its excavation. These documents were our prime sources and served as the relevant background and starting point to much of our understanding of the site.

30. The vertical provenience control for the work was assumed to be + 100.00 m above sea level. A N-S baseline was used to establish horizontal control — and to extend vertical control from the baseline. Spaced stakes, each with a known elevation, were placed at regular intervals. The ground-and-aerial-based findings supported one another, and with modern photographic analysis we were able to substantiate that the surround of the site provided more than sufficient area to serve as the site's feeding plain.

The field investigators had used a standardized record form that they designed to record the unit — giving its location by co-ordinates, elevations (opening and closing), associations with other features, context evaluation, and contents (features, artifacts and ecofacts). Each page was backed with graph paper (in inches) for ease of drawings, sections and plans. These notes formed a running chronicle of the progress of the excavation. Scale drawings were used to record features accurately in their horizontal and vertical dimensions, and black and white photographs and polaroid pictures served to document and supplement all other record forms. The vertical sections and plans provided by the notes were the keys to the sequence of a multitude of superimposed units.

In our processing of these records, and for ease of referral, we have numbered each of the 57 notebooks and their pages. The identification of each trench analysis and the drawings of plans and sections will be referenced to the specific trench notebook(s), should future researchers wish to refer to this data.

Illustrations

M. Winkes is to be credited with the redrafting of maps including Turkey, the Maeander Plain, the Dandalas Valley, the geological map and the plan of the excavations. Other credits are given in the Figure listing.

All of the trench drawings, with the exception of the Pekmez trench 2 topographic maps, are based on the original excavators' field notebook drawings. Notebook number(s) and page number(s) are indicated under the drawing. These drawings were redrafted by the author. Reference control points such as datum points have been included in the section drawings when given in the field notebooks.

The soil type that regularly appeared throughout these excavations is of a variegated brown color, generally intermixed with lenses of ash, charcoal deposits, burnt mud-brick, and other occupational debris. In the illustrations, mud brick is designated by hatching on the plans; on the sections, medium brown earth by cross-hatching and charcoal by blackened-in areas; on both plans and sections, ash is indicated by dots.

In the main, original artifact drawings were undertaken by N. and M. Joukowsky; all have been redrawn or redrafted and processed by the author.

The majority of the color photographs were taken by David L. Brill. Black-and-white aerial photographs were taken by J. Whittlesey, and black-and-white site photographs were taken by members of our research group. Trench photographs were all taken from 1967 to 1974 by

the original excavators — they were reprocessed for this volume. Artifact photographs were taken by S. Ehlinger, N. Joukowsky or the author unless otherwise noted. The reader should refer to the listing of the Figures for specific credits.

SPECIAL CONSIDERATIONS

As in any research, the strategy is directly related to the evolution of the objectives of the study of the site, the nature of the source materials and the resources available for work. Any analysis which did not take into account the difficulties, briefly discussed below, would fail to reveal the problems in the nature of the evidence presented. The following section addresses the implications of several practical difficulties including a variety of factors operating at different levels that inhibited the work.

Finances

The proposed research required financial support. Funds earmarked for excavation at Aphrodisias were not available for prehistoric research. Even though the prehistoric research project was associated with the classical excavation, it was financially independent. The team's responsibilities involved payment of their own transportation and equipment for the study of the site, plus photographic work, computer analysis, and the preparation of this report. K. T. Erim very kindly provided us with storage facilities, a field laboratory, room and board, and Turkish government permission to carry out the project. Unfortunately the research plan had to be modified each year, depending on the availability of the personnel who could finance their passage to and from the site. The lack of funds resulted in a limited but explicit set of objectives. As a result, only artifact analysis could begin in 1976; work continued on a modest scale in 1977 and 1978, and was essentially completed in 1982.

Excavation Strategy and Mechanics

Maximum information was not obtained from the prehistoric excavations for several reasons. Excavating should have been slowed down or halted periodically until a complete analysis of the evidence and, particularly, the stratigraphy could have been completed. Once this analysis had been done, the excavation procedure would have been more problem-oriented, and work could have been

concentrated in one large area — either Pekmez or the Acropolis. Once the stratigraphy of parallel trenches in the area had been confirmed, there would have been a clearer understanding of the layer-by-layer exposure of the area, the recovery of horizontal lay-outs, and architectural elements of complexes, as well as settlement patterns. Without this information, it is difficult to correlate the network of unit, walls and complexes in one trench — and to interpret these remains in relation to any other.

We could not determine how actual excavation procedures were handled. For example, there was no indication that either sifting or flotation were an ongoing part of the excavations.

Stratigraphy and the Unit System

The unit system was too complex a process for these excavations. In all but two trenches, the stratigraphic drawings of units on vertical sections was incomplete. More attention should have been paid to the complexities of the stratigraphy itself. In addition, there were no photographs of primary balks to confirm this critical information.

One of the central concerns of this project was to identify cultural periods of activity so that a coherent plan of the excavations could be gleaned. It was decided to base our study on deposits having clearly recognizable patterns of use. In working with the field notes, we could find few clear divisions of levels or floors. When the original excavators had recognized these divisions, they created level or complex attributions, but did not, or could not, delimit cultural periods. In our approach to the stratigraphy, we found that the small unit distinctions were unworkable and could not be considered a clear definition of cultural levels. Sometimes we were able to align the field notes of a unit excavation to a specific period, but often we had to assign units and levels, in some cases arbitrarily. Critics may well question the selection of units, complexes or levels for the chronological phases as presented. The author can only ask for tolerant recognition of the fact that although it may have been unwise to place these into cultural periods, there was no alternative.

In my examination of the depths recorded in the field notebooks, I found that in some instances there was a conflict with the evidence as it was quoted in the preliminary reports. Which depth measurements actually belong to « floors » and which to some units is not in all cases clear — the conflict suggests an error somewhere. Generally, the highest or latest depth measurement has been selected when the field notebooks gave more than one opening elevation, and the lowest elevation selected when more than one closing elevation was listed. The

interested reader should refer to the unit-by-unit discussion in the field notebooks for specific depth references. All the measurements presented in this report have been taken from the field notebooks and represent absolute depths, i.e., as adjusted from the given respective datum points or subdatum points of the various soundings. It is of interest to note that some units may fall chronologically earlier than the general terminus of their assignment, or they may overlap more than one phase or level, but generally, when this has been the case, they have been assigned to a later or higher level attribution. The subdivisions of each of these levels need confirmation by future excavation and artifact analysis — hopefully to establish the natural stratigraphy.

Because the stratigraphic evidence is so circumstantial, there are disturbances in all the trenches, and since few sealed floor levels exist, we can only assume that some artifacts and features are mixed. Floor materials cannot be considered distinct from the fill both under and above them. The excavators had combined the two kinds of deposits, and as a result it was impossible for us to separate them. Further, when we began to correlate the units, levels, and complexes with those that we had assigned to a period, there was little certainty about the alignment, particularly in the balk, ramp, and wall cleanings.

In a few instances it was found that the same unit number was assigned to two different excavation areas, in different trenches. Originally in Pekmez trench 1, numbers beginning with 400 were assigned; the same numbers were also assigned to artifacts and deposits in Acropolis trench 5. Generally there has been little problem in distinguishing these because the original excavators corrected their mistakes in time, but in approximately a dozen instances, marked finds may be confused. In addition, as many as 77 units had questionable depth measurements, and all too often opening and closing depths and elevations were not recorded. As the boundaries and depths of each unit are independent and different from every other unit, there may be some confusion because some of the unit plans are not included in the field notebooks. The records often did not indicate exactly what boundaries the units had. Therefore, the plans and sections that are included in this volume are formed from those that were recorded in the preliminary published reports or by written description and/or drawings in the field notebooks.

In order to maintain as « pure » a sample as possible, each cultural level has within it correspondences that are probable, but not secure. The levels of most of these trenches have been difficult to determine because of the size of the excavated area and the lack of structural remains. In addition, the lower levels were so physically confined that it is almost impossible to present other than

a tentative assessment of the depositional patterning of these early settlements.

Incomplete Records

My understanding of the excavation field mechanics may be incomplete due to the fact that these records were not consistently maintained in the field notebooks. We could find no site diary for these excavations. Except for the unit sheets themselves, there is no indication of the work done, the number of people at work, and any problems that may have arisen. Other than the published reports, there is no record of excavation procedures and proceedings.

With the exception of trenches 8 and 9, whatever interpretation and ideas that might have occurred to the excavators were not recorded. There is little specific clarity in the notebooks as to soil colors (no Munsell color charts were used), and textures for these were inconsistently recorded. Their terminology was subjectively assessed, and was not as informative as it might have been. For example, unit 508 of Acropolis trench 5, was recorded as being located under unit 504 in the NW quarter of the trench; its opening below the 4.00 m subdatum point; then opened from 1.13 to 1.21 m, and closed below the subdatum at 1.51 to -1.54 m. The deposit is then described (Notebook no. 9: 161-162):

« Brown earth with some charcoal, then scattered ash and yellow *pise*, scattered ash in brown dirt, yellow in NW, brown mixed with some yellow, 2 rocks in SW quarter and a pile? of rocks in NE quarter. Mudbrick coming from S central edge of unit below brown dirt, scattered heavyish charcoal amidst yellow and burnt red and charcoal in N part of trench. »

On the back of the page, a sketch plan had been drawn on *inch* graph paper, but it is not clear what this plan means.

The lack of section drawings, plans, and at times confused or incomplete field notes (along with the physical limitation of the areas excavated) provided us with evidence that was far from easy to assess. I am not sure whether the documentation was misplaced or whether it ever existed.

Artifact Analysis

Phase two archaeological work at Aphrodisias (1967-1974) involved the excavation of trenches, but few of the unearthed artifacts had been classified or analyzed. The field notebooks did not maintain a listing of boxed finds, nor were these containers given numbers. This listing would have been important for it would have provided a guide to the finds themselves. Most of the artifacts had

apparently been kept, many had been catalogued, but there was no indication as to how or where they were stored in different areas at the site headquarters. The storerooms had to be inventoried. Hundreds of wooden collection containers plus single artifacts stored on shelves had to be ordered by material and trench, and numbered before the research could begin. The excavators' catalogue, photographs and field notebooks were combed for clues, but there was little indication of the quantity or condition of the collected artifacts and ecofacts. For the pottery, there was no standardization of nomenclature. As I mentioned above, Munsell colors were not used in color definitions. Some of the pottery had been drawn, but no stance or diameter notations were given. Only after these problems were assessed, could artifact analysis begin. In addition, the catalogue records were incomplete, thus, all of the artifacts had to be restudied, catalogued, redrawn, and ordered. The processes that evolved will be examined in Part 4 devoted to artifact industries. Copies have been made of all these lists, and the assembled file of background information is now housed at the site for easy reference.

Publication of Comparable Material

Although prehistoric Aphrodisias had been excavated, it had certainly not been fully investigated yet it has the potential of yielding data bearing upon important unresolved questions concerning the prehistoric periods of the region as a whole. Despite the archaeological work at Aphrodisias, nearby Beycesultan, and Karataş-Semayük, there has been little published archaeological data from the Anatolian southwest. Research was further complicated by the fact that there are few publications of comparable sites. Moreover, few Anatolian site reports have included analyses of floral and faunal remains, climate, soils, artifact studies of chipped stone, or the composition of ware fabrics, so there is little synchronic material with which to work.

Unfortunately, the information housed at New York University or at the site itself is far from complete, and the task of integrating these data has been formidable. However, in spite of all the aforementioned problems, the excavators did maintain the unit-by-unit field records, and despite the drawbacks of the unit system, these records have been the single, most informative element of the excavations. Information on the stratigraphy, radiocarbon samples for analysis, artifacts and ecofacts, in many cases, has been found in direct association with the units. Therefore, the key unit sequences representing several cultural periods with hundreds of years of site use have not been lost. These have provided the basic elements for this study.

But it should be clear that this report has been researched and written under less than ideal conditions. This publication is an effort to rescue what information remains about these prehistoric investigations. Archaeological reports must be judged for their completeness, consistency and clarity. This report cannot be complete; its merit is in the presentation of the extant evidence.

DISPOSAL OF EXCAVATION MATERIALS

The majority of the excavation field records are stored at Department of Classics, New York University. Storage facilities for the prehistoric artifacts have been provided in storerooms located in the site headquarters. For those who may wish to examine the original material now stored at the site (reorganized by our team), there are four disposal areas where objects are retained:

Ceramics

- 1. All pottery fragments of the Pekmez trenches and Acropolis trenches 3, 4, 5, and part of 7 have been retained in their original labeled unit containers, and stacked in the prehistoric storeroom located off the main courtyard of the site headquarters.
- 2. The type series components have been taken from the unit containers and are stored together in wooden boxes labeled « Type Series Bowls, » « Type Series Bases, » etc. Each component has been marked with its type number, but should the unit number not be marked on the fragment itself, the context of each element may be found by consulting the catalogue of this report, or by examining the computer sheets. Serial numbers given to drawings of type series components can be found in the index of drawings in the « Type Series Field Notebook. » The type series, the majority of catalogued objects, outsized ground stone tools and the Late Bronze and Iron Age ceramics are stored in the backyard storeroom under the small house.
- 3. The Iron Age Lydian ceramics are housed in the storeroom located under the stairs of the main house.
- 4. The garage storeroom contains the early pottery of Acropolis trench 7, the reconstructed pithoi, the bones of the Acropolis and Kuşkalesi trenches, and other samples of organic origin.

Catalogued Small Finds

Small finds of the Chalcolithic are all placed together in wooden containers at the site museum along with some of the catalogued pottery. A few catalogued pieces including some metal objects and the figurines, are on display in the Aphrodisias Museum, along with the other catalogued objects from later periods of the prehistoric excavations. Most of the Bronze Age catalogued pieces, however, are in the storeroom located under the small house in the backyard of the excavation headquarters.

Chipped stone

Most of the chipped stone is labeled with its catalogue number and each was placed in a separate labeled bag in wooden collection containers for each trench. The remaining waste was grouped together in collection containers, and is kept is labeled bags. These are also stored in the storeroom under the small house. Most of the Chalcolithic obsidian has been sent to the Smithsonian Institution, Conservation Analytical Laboratory for analysis; four pieces are on display in the Aphrodisias Museum.

Excavation Records

At the close of the project a complete duplicate set of records, together with duplicates of all the background information was stored at the site in Turkey.

The original field notebooks, maps, drawings, computer input documents and cards, catalogue, plus notes used in the preparation of this volume are stored at the Department of Classics, New York University, where they may be studied. Computer magnetic tape reproduction with the compilation of the ceramic raw data may be ordered at cost from Dr. Susan S. Lukesh, Systems Analyst, Management Information Services c/o The Center for Old World Archaeology and Art, 70 Waterman Street, Brown University, Providence, Rhode Island 02912 USA.

A copy of this volume will be kept at the site in the library. Anyone interested in studying the original material should contact Dr. Kenan T. Erim, Classics Department, New York University, Washington Square, New York, New York, 10003.

INTRODUCTION TO THESE VOLUMES

For clarity in this volume, I have tried, whenever possible, to credit the original excavators with their accomplishments and to separate from that the subsequent work undertaken by us. I would like to point out that whenever « we » is referred to in the following manuscript, it indicates the research team that worked on the excavated materials from 1975-1984.

The groundwork for this publication of the prehistoric material from Aphrodisias began during my first field expedition to the site in the summer of 1975, but the greater part of the study was prepared during 1977-1983. Thus, since the beginning of 1975, the author has worked with the site plans, field notebooks, catalogue cards, and photographs that were stored in the Classics Department at New York University. Annual investigations (1975-82) have been undertaken at the site itself where the artifacts from the seven seasons of prehistoric excavations were stored.

The following report presents a detailed account of the stratigraphy and of the artifact catalogues of the prehistoric excavations. The chronology and interpretation of the three areas of excavation, together with a limited analysis of comparative material drawn from contiguous sites, is also discussed. This volume concentrates on the similarities and differences of stratigraphy and artifacts within the site itself. Only the strata and features associated with the prehistoric periods are discussed in detail.

This study is presented in two volumes. Volume I is divided into five parts.

Part 1 the introduction, summarizes the site environment, its history, the excavations undertaken by the original participants (1961-1974), and our research objectives (1975-1984).

Part 2 contains the presentation of the stratigraphy. Also included are the results of radiocarbon analyses, preliminary chronological assessments, and tentative conclusions.

Part 3 covers specialist analyses of the faunal remains of these excavations. The first section of this part, written by Pam Jean Crabtree and Janet M. Monge, is devoted to the faunal analysis of the Pekmez deposits. The second section, contributed by David S. Reese, is a study of shells found in the prehistoric deposits.

Part 4 describes artifact industries. The introduction presents the field recording systems that we adopted for our use. This is followed by a series of separate analyses of specific artifact materials; ground stone, chipped stone,

worked bone, metal, and ceramics. Of particular interest is the study of figurines by Pat Getz-Preziosi. The prehistoric chipped stone industry is discussed by J. Léon Leurquin followed by the neutron activation analysis of the obsidian by M. James Blackman. In addition to these special contributions there is a study of the worked bone and metal artifacts. The following section deals with ceramics. It contains the quantitative analysis of the frequency and distribution patterns of major ceramic shape types and thus places at the disposal of the reader all the relevant types on which conclusions are based. This includes a summary of predominant interrelationships between ceramic classes.

Part 5 presents an account of the miscellaneous ceramics that do not fall into the standard type series. This section concludes with a contribution by William E. Mierse on Iron Age Lydian wares, followed by a brief discussion of the Carian jar by Anna S. Benjamin, and also Frederick M. Lauritsen's comments on the earliest inscription found at Aphrodisias.

In the Conclusions the interpretation of this prehistoric material is considered. These interpretations include temporal and spatial frameworks and ancient activity patterns. These are preliminary in the sense that they await verification or refutation from other programs undertaken at the site itself or at allied sites. Thereafter follows a

discussion of inter-site correspondences and additional remarks about alliances.

I have tried to discuss Aphrodisias' interrelationships with sites having like materials. When nearby sites are researched, it is anticipated that they will add a great deal to our understanding of the Late Chalcolithic, Bronze and Iron Ages at Aphrodisias itself and the area as a whole. Economic and possible political ties among settlements of these periods are of particular importance.

These conclusions are directed to the cultural-historical type of interpretation, for I hope they will provide the necessary framework upon which expanded cultural interpretations can be made in the future. Perhaps here a number of ideas have been generated that can be tested to reveal the causal processes of prehistoric Aphrodisias' cultural changes.

Volume II is the presentation of abbreviations, a selected Bibliography, followed by the object catalogue from each trench. The major object groups are ground stone, chipped stone, bone, metal, shell, and ceramics. Artifacts are individually described, and measurements, material, color, state of preservation, and other pertinent information is given.

Appendixes 1 and 2 are devoted to surveys in the area. The list of Illustrations and Tables conclude this volume.

PART 2

STRATIGRAPHY

« The first rule about stratification is that there is no rule. »

Sir Mortimer Wheeler (1956:62)



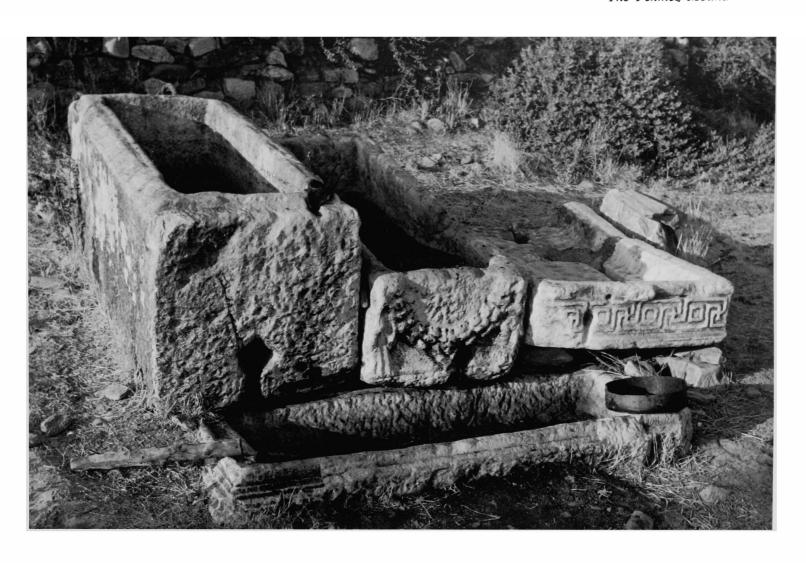
INTRODUCTION

The subject of Part 2 is the stratigraphy of the prehistoric deposits at Aphrodisias. Its object is to develop an understanding of the strata, and to describe and interrelate them in a manner as coherent as possible... so that the role of the site can be better known... for itself, and for its place in southwestern Anatolian prehistory.

In this part is the description of the excavations of the 13 trenches at Aphrodisias, and in this order: an introduction of each trench, followed by the presentation from earliest to latest of its levels or complexes and their subdivision « units » (see Terminology, Part 1, p. 36), with the opening and closing depths, description of the soil deposit, and archaeological features. Its artifactual and non-artifactual material as well as significant pottery finds are presented and then referred to again in the Catalogue, Volume II. Each trench is described on the basis of its stratigraphy and the problems that are directly related to that. Thus each trench is isolated and treated as a separate entity as if it were an individual site. At the conclusion of Part 2, a cross-trench analysis is given in an attempt to interlink the entire prehistoric picture at Aphrodisias.

Radiocarbon dates are presented with their respective trench deposit — first, the B.P. (Before Present), followed by a date based on both the 5568 and 5730 Half Life, and then the most recent calibrated or corrected date. These are based on the same data base and statistical methods published in 1982 (Klein et al., p. 103-150). These dates were reworked by B. Lawn in 1983 and supersede previously published radiocarbon results from these deposits. A discussion of the results is given later in this part and the complete listing can be found on Table 5, p. 163.

From all of this a rough timetable has evolved — from my studying the individual stratum in the trenches as well as the original excavators' field notes, from the artifact corpus stored at the site and, of course, from the carbon-14 dates. This timetable is presented after the trench-by-trench analysis p. 155 so that tentative chronological correspondences with other sites can be made in Part 5, p. 427.



18. Sarcophagi for the manufacture of Pekmez on the Pekmez mound (Photo: Sheila J. Ehlinger).

THE PEKMEZ MOUND

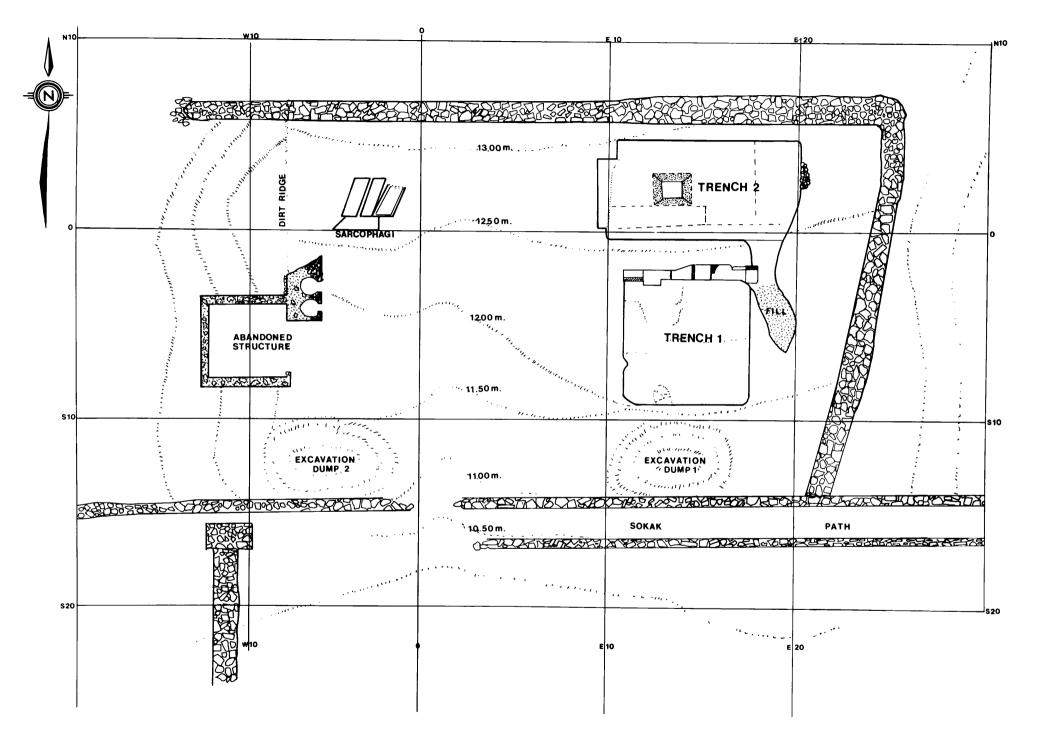
The Pekmez mound (Figures 19-20 and 5, Area B) lies just S of the site museum piazza from where it climbs gradually to its 12 m height. Its approximate two acre extent then gently descends into the southern feeding plain that is cultivated with tobacco, wheat, squash and other crops. Unfortunately, its surface has been abraded by erosion and disturbed by modern landowners, who use it for their homes as well as a base for their farming activities (Figures 18-19). Just W of the excavated areas are the remains of three sarcophagi dating to the Classical

period that have now been adapted by farmers for their extraction of « pekmez », the jellied grape extract from which the höyük derives its intriguing name.

Under the supervision of B. Kadish, the excavators devoted part of three seasons' work to sounding of Trenches 1 and 2, located on the S side of the mound. Pekmez trench 1 was excavated in 1967, and Pekmez Trench 2 in 1969 and 1970. Together the two trenches covered an area of 120 square m. Bedrock was not reached in either trench.



19. Summit of the Pekmez mound (Photo: the author).



PEKMEZ TRENCH 1

Sections: Figures 21-24

Pithos burials: Figures 25, 371 - Artifacts: Figures 372-374 - Photographs: Figures 26, 373

Artifact assemblages: Figures 369, 370, 374

Site field notebooks: 42-43

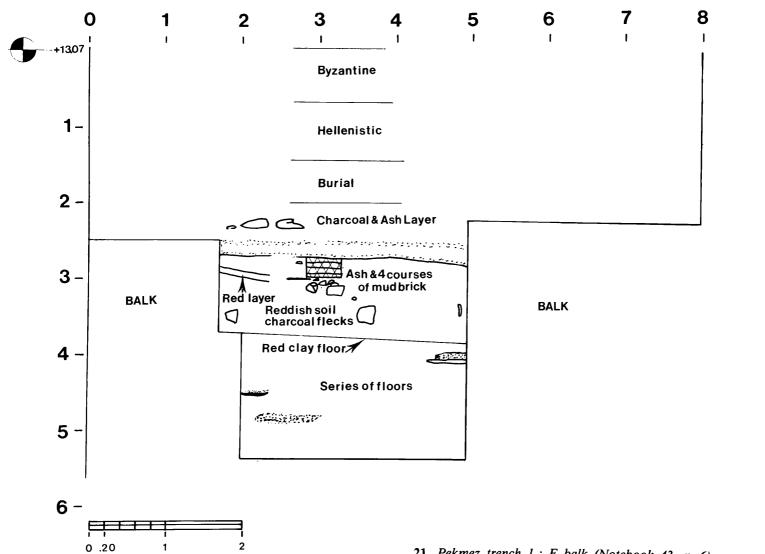
SYNOPSIS

LEVELS	UNITS	
Level X	1415, 1417	
Levels IX-VII	1402 (?) ¹ , 1403, 1405 (?), 1406, 1407 (?), 1409-1414	
Level VI	1401, 1404 (?), Pithos burial	
Level V	1418	
Level IV	Mixed deposit	

Excavated in 1967, Pekmez Trench 1 was the initial 6.00 by 9.00 m exploratory sondage of the Pekmez mound (Kadish 1969). The cutting of this trench was at + 13.07 m above the + 00.00 datum point on the orchestra floor of the Roman theater. It was subsequently narrowed as the excavation progressed. At a -2.00 m depth the trench was reduced to 2.50×9.00 (?) m; at a -3.50 m depth to $3.00 \times 2.50 \text{ m}$; and finally at a -4.00 m depth to 1.50 × 2.00 m. Its closing below the trench subdatum corresponded to a -5.38 m depth. The location of this trench can be found on the site plan (Figures 5, Area B; 20).

The excavators identified ten « levels », listed from I-X. Seven levels — including Level X, the earliest, to IV, the latest — are applicable to the prehistoric deposits.²

- 1. A question mark in parenthesis following a unit number indicates either that the excavators did not assign the unit to a level or that I am not sure my own assignment is correct.
- 2. The upper two strata are « historic » and the third level, Level III, is mixed in context.



21. Pekmez trench 1; E balk (Notebook 43, p. 6).

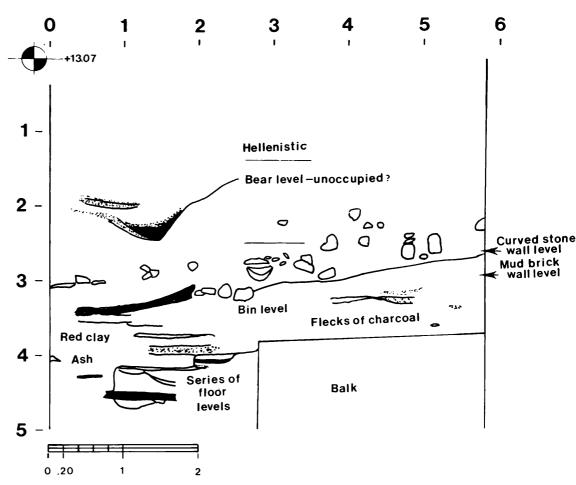
No unit section diagrams for any of these levels were present in the field notebooks. And only 34 pottery containers for this entire trench could be located in the prehistoric site storerooms. When we examined the ceramics in 1980, we found that much of this pottery was unwashed — and that other artifactual material such as chipped stone tools and bone fragments had been intermixed in the collection containers. Nevertheless. our team managed to classify all the available pottery³ as well as chipped stone artifacts, and a great part of the faunal remains.

Level X, ca. -4.52 to -5.38 m

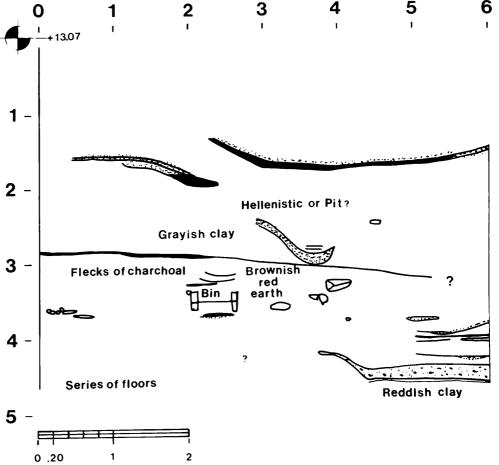
No architectural remains were present in this deposit, but random charcoal and burnt clay fragments were unearthed. Artifacts include sparsely scattered sherds and chipped and ground stone implements. The three units, 1415-1417 inclusive, contain the earliest cultural material encountered in Pekmez Trench 1—but with so little evidence, this deposit can only be fully understood if this area is excavated further.

Level IX, ca. -3.94 m to -4.51 m

In Level IX, containing units 1413-1414, a series of fragmented floors were unearthed: at a – 4.28 m depth a partial charcoal layer was found, at a –4.11 m depth a fragmented plaster floor was discovered, and at a –4.04 m depth was a clay floor with charcoal flecks and ash on top of it. It would appear that all the architecture associated with these patchy floor remains had been disturbed by later builders.



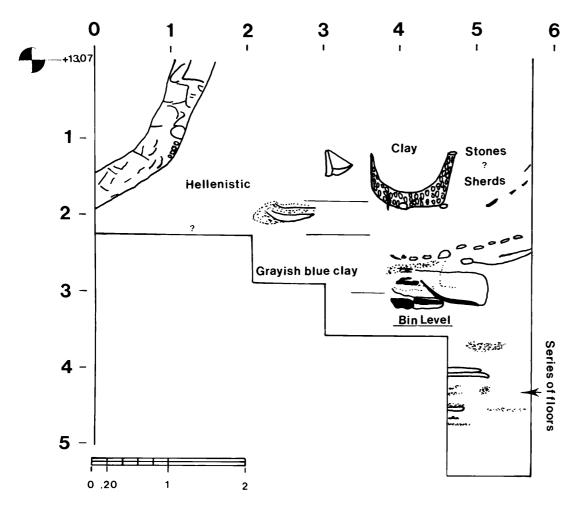
22. Pekmez trench 1; N balk (Notebook 43, p. 8).



23. Pekmez trench 1; S balk (Notebook 43, p. 4).

^{3.} It appears that not all sherds were retained when this trench was excavated; in some containers only distinctive fragments were found.

Child Pithos Burials

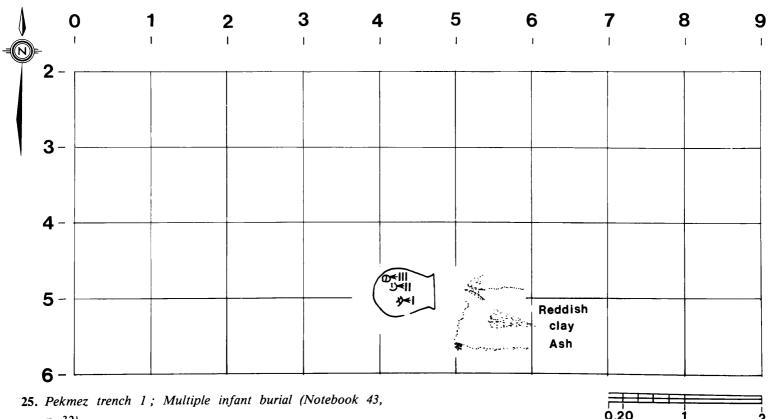


24. Pekmez trench 1; W balk (Notebook 43, p. 11).

Level VIII,
ca.
$$-3.53$$
 to -4.00 m

This level contained units 1409-1412 inclusive. At a -3.93 m depth outlined in the escarpment was a wall built of two courses of rough stone with a course of mudbrick. A charcoal floor interspersed with plaster was uncovered at -3.75 m in the NW corner, and a layer of ash which underlay a bin appeared at a depth of -3.74 m.

At the E end of unit 1410, between -3.73 m and -3.98 m depth, under a stone next to a floor of burnt clay mixed with ash, was discovered a fragmented pithos (cat. no. 1410.I, Figures 26, 373). It was oriented with its mouth to the E (Figure 25), and contained multiple child burials — three skulls intermixed with scattered pieces of charcoal and a deposit of dark homogeneous clay. The pithos mouth was covered by a large mudbrick. Two of the skulls were considered « very young », and



p. 32).



the third was judged to be « pre-adolescent ».4 One of the skulls was intact; the largest skull was located in the bottom of the pot. The only funerary objects buried with them were three highly polished *Columbella rustica*, marine gastropod shells, *cat. nos. 1409.1a, 1409.1b, 1409.1c* (Figure 369.9). The level from which this grave was dug could not be determined at the time of its excavation, but the pithos is postulated to have been inserted into the accumulated debris of Level VIII at some point during the occupation of the level's later deposits.

Level VII, ca. -3.35 to -3.53 m

Overlaying the pithos burial, a number of burnt layers were unearthed, possibly indicating that this level was in constant reuse after multiple conflagrations. Two, perhaps three levels of mixed architectural features were uncovered, including plaster pieces and burned mudbrick. A bin was excavated from -3.54 to -3.61 m, its walls covered with a gritty mud plaster. The recovery of this bin could not be completed, for it extended into the unexcavated portion of the trench.

Female's Pithos Burial

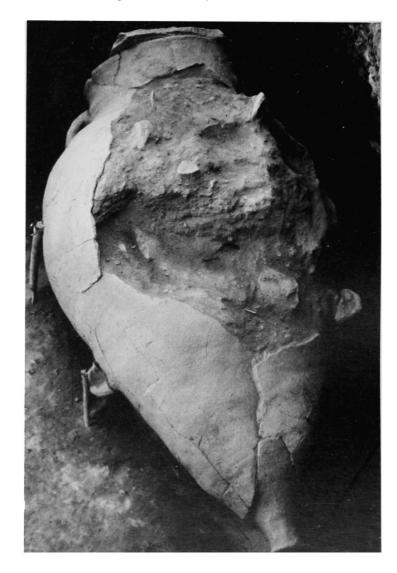
Level VI, ca. -2.88 to -3.35 m

The stratigraphy of this level is confused by pits made by the ancient inhabitants. A disturbed pithos burial covered by a stone slab was discovered at a -2.88 m depth with its base resting at -3.37 m (Figure 26). The jar contained a female accompanied by domestic articles including: three spindle whorls (cat. nos. 1401.16-1401.18, Figures 312.4; 374.1, 3, 6); a small brown slipped burnished juglet decorated with white-filled incisions (cat. no. 1404.13, Figures 372.1; 374.13); a loom weight (cat. no. 1401.1), as well as two silver-colored bracelets 5 (cat. nos. 1401.14a-1401.14b, Figures 372.3; 372.4; 374.15; 374.16 respectively), and 24 gold leaf beads (cat. no. 1401.19; Figures 368; 372.2; 374.14). This burial was probably inserted from an upper and later level. It is notably richer than any of the other burials excavated at Aphrodisias, featuring the highest quality and quantity of items of adornment.

Levels V-IV, ca. -2.60 to -2.88 m

Level V is not defined clearly in either the preliminary report or in the field notebooks. It appears that this level included pits. Between $-2.60 \, \text{m}$ and $-2.88 \, \text{m}$, an ash area encircled by charcoal was found; black slipped burnished pottery was associated with this deposit. At a depth of $-2.60 \, \text{m}$, a hard-packed surface was uncovered, and at $-2.28 \, \text{m}$ a fragmented floor with a double-layer of plaster. Unfortunately, neither of these floor surfaces completely overlay the trench — which would have helped determine the time when the pithos burial from Level VI was inserted.

26. Pekmez trench 1; Pithos burial of a female, in situ. (Photo: original excavators).



^{4.} The bone collection container of the child burials we found to have been violated by rodents; only a few scattered bones remained lying in a morass of shredded paper and droppings.

These have been published as « copper/bronze »; however, as far as we know, no analysis has been made of their ore content. See Kadish 1969, pl. 28, figs 37-38.

PEKMEZ TRENCH 2

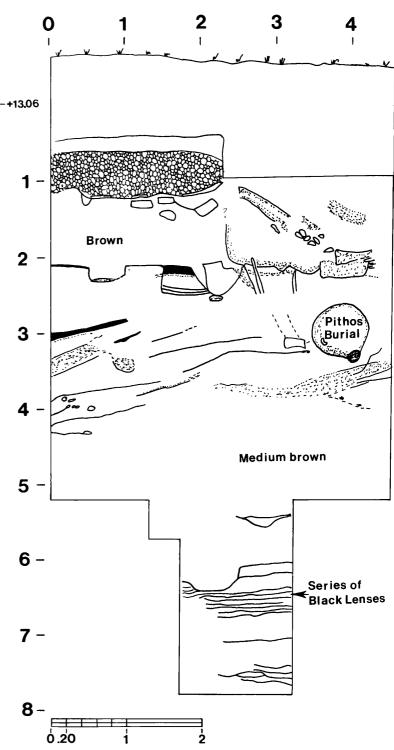
Plans: Figures 35-37, 45-47, 49-50, 57-58 Photographs: Figures 38-39, 44, 51-56, 59 Sections: Figures 27-34, 40-43, 48 Artifact assemblages: Figures 375-416 Chipped stone drawings: Figures 253-256 Site field notebooks: 44-46, 48-52 inclusive

SYNOPSIS

LEVELS	UNITS
Level VIIIC	1599e, 1599d (Test Trench C)
Levels VIIIB	1599a-1599c (Test Trench C) 1597-1597f (Test Trench A),
VIIIA	1598-1598f (Test Trench B)
Level VIID	1576, 1578, 1580-1584, 1586, 1588, 1590- 1596
Level VIIC	1546a, 1546b, 1549, 1561, 1563a-1563c, 1566-1566c, 1568, 1569, 1571-1573, 1585, 1589
Levels VIIB-VIIA	1515-1515a, 1519, 1520, 1523, 1525, 1527, 1532-1533, 1535-1540, 1546-1547a, 1553, 1554, 1558-1560, 1563, 1575
Level VII	1501, 1501-a/b, 1506, 1508, 1513, 1516, 1526, 1550-1552, 1574 (?), 1587 (?)
Level VI	1497, 1500, 1502a, 1507a-1507b, 1524b/c, 1528-1529, 1531, 1548, 1554, 1555, 1567, 1570
Levels V-IVe	1468, 1470, 1473, 1476, 1478-1481, 1483- 1486, 1488, 1491, 1493-1495, 1501a, 1503, 1509, 1511, 1511a (?), 1517
Levels IVd IVc IVb	1460-1462, 1464, 1466, 1467, 1471a, 1496, 1499, 1502, 1505a, 1508, 1512, 1518a, 1521, 1522, 1524, 1534, 1541 1534, 1557, 1577, 1579
, ,	
Level IVa	1452, 1455, 1457-1459, 1462, 1463-1463a, 1471-1472, 1474-1475, 1487, 1494, 1498, 1504, 1518
Level III	1449-1451, 1453, 1465, 1543, 1548, 1562, 1562a, 1564

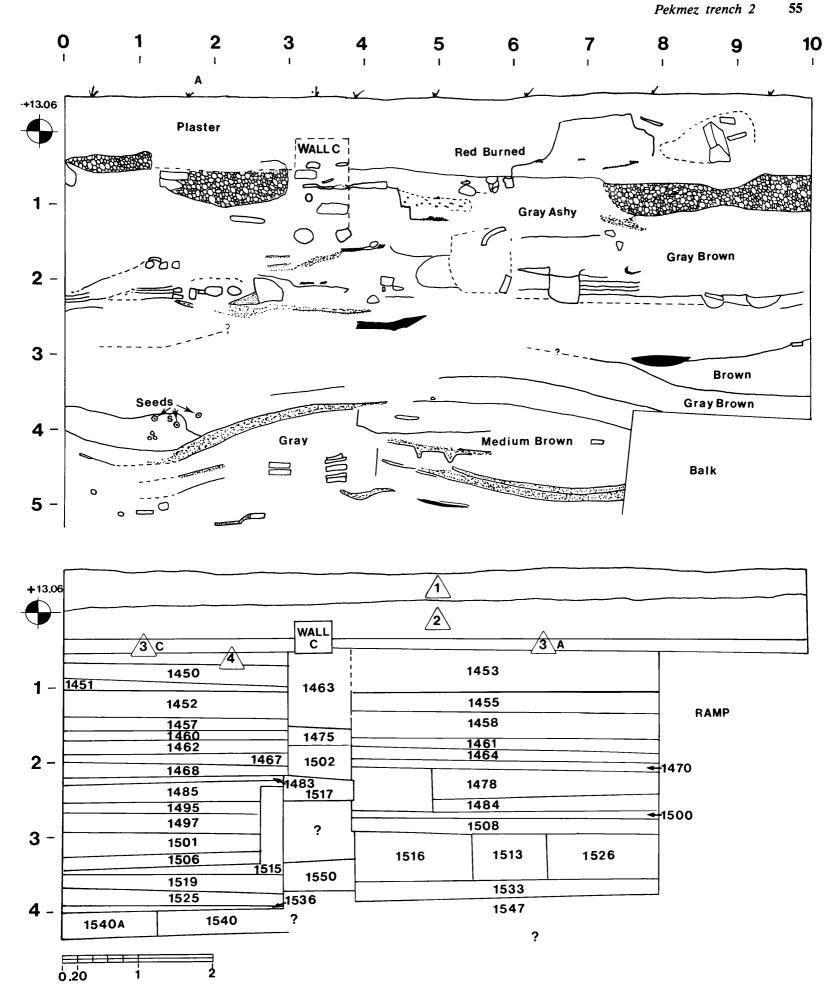
Pekmez Trench 2 can be located in the site plan on Figure 5, Area B. In 1969 the area was surveyed, and the trench located approximately +13.06 m above the +00.00 datum control of the theater orchestra. Trench 2 was laid out 10.00 m N-S by 8.00 m E-W. It was excavated to a depth of 3 m and then, on its S escarpment, was subsequently stepped at varying depths to allow for the removal of debris.

From a depth of approximately -5.20 m, operations were begun in two test trenches: Test Trench A, excavated in 1969, was an irregularly shaped 2.00×1.00 m

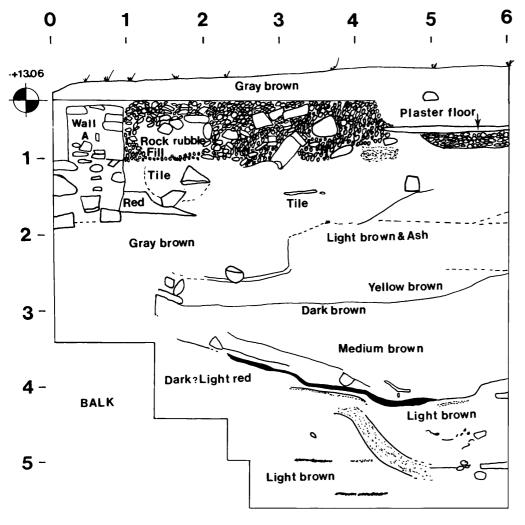


27. Pekmez trench 2; E balk section (Notebook 52, p. 515, 530b, 531).

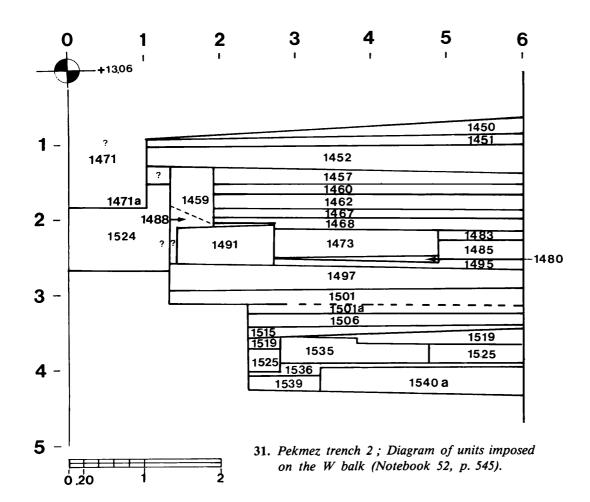
trench; and Test Trench B, excavated in 1970, formed an irregular L-shape adjacent to Test Trench A. The plans of both test trenches are represented on Figure 19. Following the completion of Test Trench B, the area under both test trenches was cleared and a third trench was sunk, an irregularly shaped 2.00×2.00 m, known only as « unit 1599 » which, for the sake of clarity, I have arbitrarily redesignated as Test Trench C. This trench was excavated beyond a depth of -9.49 m the deepest of any trench at Aphrodisias. Its plan can be seen on Figure 35.



28. Pekmez trench 2; N balk section (Notebook 52, p. 495, 499). 29. Pekmez trench 2; Diagram of units imposed of the N balk (Notebook 52, p. 543).



30. Pekmez trench 2; Partial W balk section (Notebook 52, p. 497).



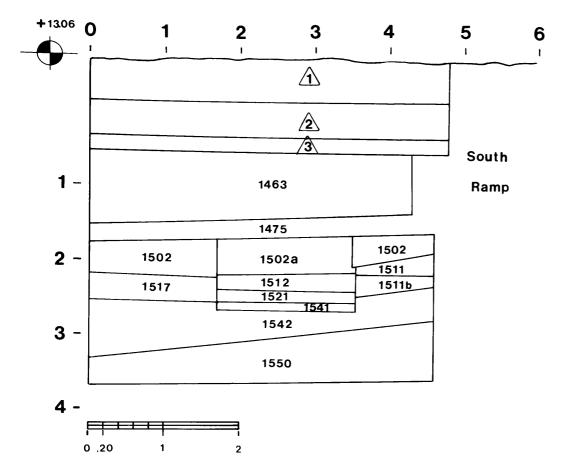
The objective implicit in the excavation of these three test trenches was to ascertain the depth of occupation debris, and to define its material culture. When the Pekmez mound was originally explored in 1967, the excavation of Trench 1 had yielded a rich array of artifacts but a confused stratigraphic picture. One of the objectives of Trench 2 was a hope for discovery of well-stratified remains, remains that would fill out the record of successive periods of Anatolian prehistory, as well as tell the excavators more about the nature of the superimposed settlements on Pekmez itself.

However, only further probings will determine whether or not earlier occupation levels exist, for the excavators themselves were not sure that the lower limit of occupation had been reached. In his preliminary report, K.T. Erim (1971:61) comments that it is not certain:

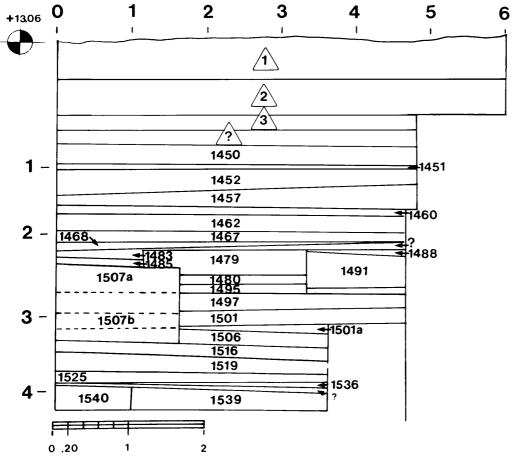
« (...) whether it is already virgin soil (hence signifying the end of the habitation levels at Pekmez). The latter may be the case since a few small red-on-white painted sherds were recorded among the last finds made above this stratum. »

The aforementioned sherds, supposedly from unit 1599e of Test Trench C, would be of great significance for determining intercultural lines of connection — perhaps with Hacılar, famous for its red-on-white painted pottery — and for the dating of this deposit. Yet, as important as these fragments are, no mention was made of them in any of the field notebooks, nor could we find them in the site storerooms.

Notwithstanding these problems the trench 2 excavation,



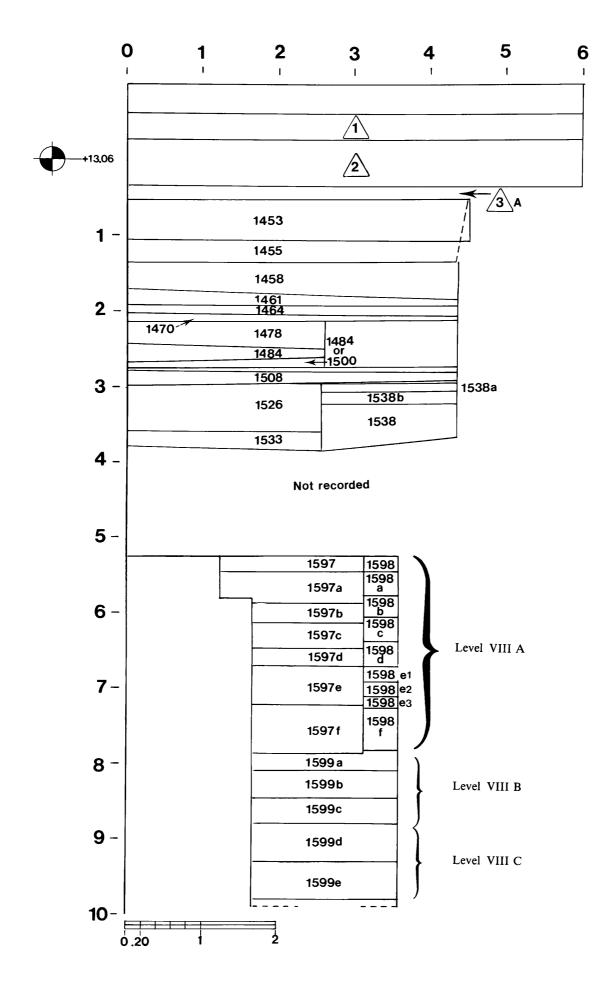
32. Pekmez trench 2; Units imposed on the E face of the central balk (Notebook 52, p. 555).



33. Pekmez trench 2; Units imposed on the W face of the central balk (Notebook 52, p. 547).

with its three test trenches, was meaningful. It clarified what we were able to define as an occupation earlier than anyone had expected — a possible Late Neolithic level — and also it gave us a stratified progression of Late Chalcolithic deposits.

We thought it extraordinary that in those three test trenches of Pekmez Trench 2, a total of 36,158 pieces of pottery were recovered — 59 % of the total for the entire Aphrodisias site. And in the little 2.00 × 2.00 m Trench C alone were found over 19,000 fragments! All this pottery plus the other excavated artifacts located in the storerooms have been processed by our team.



34. Pekmez trench 2; Units diagrammed against the E balk (Notebook 52, p. 530-559). Note that units 1597-1597f inclusive, belong to Test Trench A; those of units 1598-1598f inclusive, to Test Trench B, and units 1599a-1599f inclusive, to Test Trench C.

Level VIIIC, ca. -8.98 to -9.49 m

Plan: Figure 35

0.20

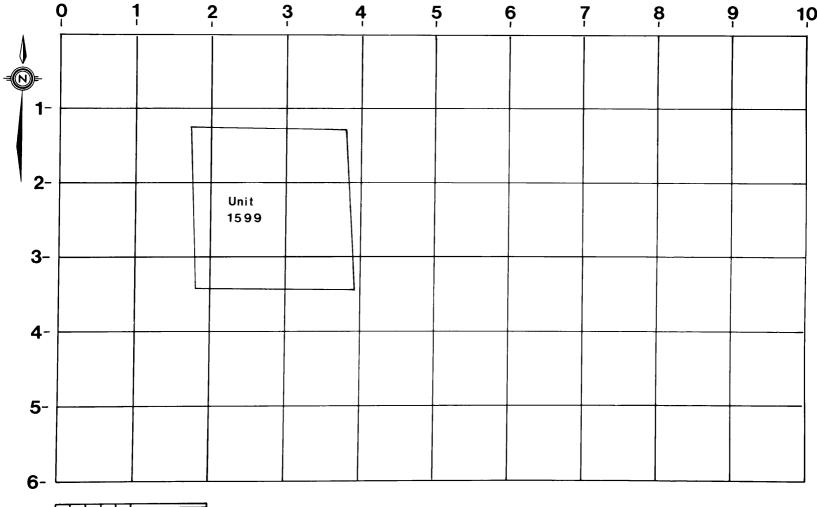
Pottery: Figures 297, 375

Level VIIIC is the earliest level in this excavated sequence. It is the lower layer of the 2.00×2.00 m square pit-Test Trench C or unit « 1599 ». This consists of two subdivisions: unit 1599d, which was excavated from -8.98 to -9.49 m; and unit 1599e, which was opened at -9.49 m. No closing elevation for 1599e was recorded; this is most unfortunate since it is from here that the missing red-on-white painted fragments were supposedly recovered. It must be assumed that the excavation of this unit went below its opening of -9.49 m, and that it was closed down soon after it was begun. We do know that the season ended shortly thereafter.

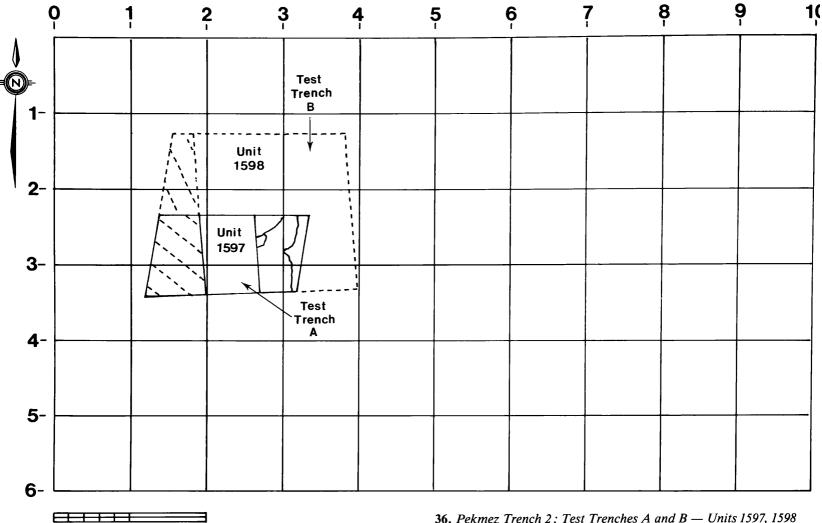
Unit 1599e, the earliest stratum reached at Aphrodisias, consists of a whitish clay deposit interspersed with gravel. No artifactual evidence is recorded in the field notebook, and no pottery container could be located in

the site storeroom. However, we do have K.T. Erim's comment (supra p. 56) indicating the discovery of those « few small red-on-white painted sherds. » Should these be found and ever become available for analysis, more weight might be placed on the chronological significance of this unit and a notable link established with the succeeding unit 1599d, as well as with other early settlements in the area.

Unit 1599d represents deposit of some 0.51 m. There are few remarks in the field notebook concerning the excavation of this unit, with the exception that at its close the earth had changed from a brownish colour to a very light buff with a clay consistency. It is this change in colour and texture that delimited unit 1599d from 1599c. No artifacts or ecofacts were recorded in the original catalogue, however, the pottery stored at the site does present an interesting corpus of ware-fabrics, forms and surface finishes. An assemblage of these ceramics is presented in Figure 297, and in the photograph on Figure 375, and will be discussed on p. 348, and again in Part 5.



35. Pekmez trench 2; Plan of Test Trench C — Unit 1599 (Notebook 52, p. 473).



36. Pekmez Trench 2; Test Trenches A and B — Units 1597, 1598 (Notebook 52, p. 427ff.).

Level VIIIB, ca. -7.98 to -8.98 m

Plan: Figure 36

0.20

Chipped stone: Figures 253, 378 Artifact assemblage: Figure 376

1

Pottery: Figure 377

Level VIIIB represents 1 m of debris, and is the uppermost deposit of the 2.00×2.00 m Test Trench C. It contains unit 1599c, excavated from -8.62 to -8.98 m; unit 1599b, from -8.23 to -8.62 m; and unit 1599a, from -7.98 to -8.23 m. These superimposed units directly overlay Level VIIIC. In the field notebook, there was one section drawing for unit 1599b but none for units 1599a and c. No photographs remain that cover this phase. A few distinctive sherds, however, are represented in Figure 377, and photographs of the ground stone tools and other objects are shown in Figure 376. Chipped stone implements are presented on Figures 253, 378.

The division of VIIIC from VIIIB, I had made after examining the pottery; and Level VIIIB from the level above it, VIIIA, I divided because I expected these levels too would reveal subtle changes in the ceramic evidence. When the pottery from each of these unit subdivisions was compared, a few significant changes were indeed ascertained (Joukowsky 1982:170-171). Within the units 1599c-1599a inclusive, few stratigraphic changes were determined. However, unit 1599c was the greatest single artifact assemblage.

RADIOCARBON SAMPLE

In Level VIIIB an ash and wood charcoal sample, P-2031, was taken from the clayey gray-brown deposit of unit 1599a. The field notebook reports that this was collected at the opening of the unit or at -7.97 m below the trench subdatum. The results are B.P. 5280 ± 70 , or 3490 ± 80 B.C., calibrated to 4160-3900 B.C. In B. Lawn's personal communication of 1983, this sample is reported as having been collected from both units 1599a and 1599b.

Level VIIIA, ca. -5.20 to -7.98 m

Section: Figure 27 Plan: Figure 36

Artifact assemblage: Figures 379-381 Chipped stone: Figures 253-254, 381, 383 Distinctive pottery: Figures 384-385 Air-dried objects: Photo: Figure 386

Level VIIIA contains the entire excavated remains of the two test Trenches A and B — 16 units comprising 1597 and 1598 with their alphabetic subdivisions. It extends from Level VIID down to the top of VIIIB or to -7.98 m, the boundary of Test Trench C. With a 2.78 m depth, Level VIIIA has a substantially thicker deposit than any other at Aphrodisias and contains more objects; for these reasons I have decided to present it in detail — unit by unit (infra).

Since the primary purpose of the excavation of these test trenches was to study the chronology of prehistoric Aphrodisias, it is probable that the original excavation plan called for the Pekmez mound to be test-trenched to bedrock — however, the size of the trench prevented this. We assume that the depth of deposit was far greater than the excavators originally anticipated, and that once dug they feared the possibility of cave-ins. It is understandable that the confined size of the exposed area did not allow a clear stratigraphic picture to emerge. And although no architecture was found within these units, the fact that there were many superimposed layers of continued activity is clear from the wealth of other evidence.

The study of this level with its series of units can best be understood in conjunction with a few preliminary statements concerning the plan and mechanics of this part of the excavation.

Excavation Mechanics

TEST TRENCH A

Test Trench A, containing the 7 units of 1597 and its alphabetic subdivisions, was excavated in 1969. It measured approximately 2 m E-W by 1.50 m N-S (see plan, Figure 36). The section drawing which I have taken from the field notebook and represented in Figure 34, shows that at an elevation of -6.00 m, the trench was stepped so that its measurements were further confined to 2.00 m E-W by 1.00 m N-S. The opening depth of Test Trench A was registered in unit 1597 at -5.20 m, and its closing in unit 1597f as being -7.43 m below the subdatum. Although this represents the significantly deep deposit of 2.23 m, the field notes of units 1597a-1597f are too sketchy for an in-depth study. To make matters worse, four pottery containers holding the sherds of units 1597c, 1597d, 1597d/e, and 1597e were upset by an earthquake during

the summer of 1976⁶. Fortunately, the discussion of this trench was summarized in the published preliminary report. (Kadish 1969:128).⁷

TEST TRENCH B

Test Trench B is comprised of the nine units of 1598 and its alphabetic/alphanumeric subdivisions. It lies adjacent to the N escarpment of Test Trench A and was excavated in 1970. An inverted L-shape (Figure 36), it measures 2.00 m E-W on its N side, 2.00 m N-S on its E side, and 0.75 m E-W on its S side. It is subsequently stepped 1.00 m on its W side, running NE to SW, and 1.50 m E-W on its S side.

This test trench was excavated from -5.27 m to a depth of -7.98 m. It should be noted that its opening does not correspond exactly to that in the adjacent trench — unit 1597 in Test Trench A, excavated from -5.20 to -5.45 m, whereas unit 1598 in Test Trench B is excavated from -5.27 m to -5.54 m. It is not clear why the excavators did not keep the units of the two test trenches at the same depth, but it is probable that the stratigraphy was approached with greater concern, or in a manner that would provide as many small units as possible for comparative analysis.

This question of difference might also have been allowed for the clearing of debris from Test Trench A—since it had lain idle through the winter of 1969 before Test Trench B was dug. Thus scrutiny of the comparative elevations of the two trenches reveals a discrepancy of some 0.48 m between them: a 0.07 m difference in their opening, and a 0.41 m difference in their closing. We do know that the inception of Test Trench C, dug below Trenches A and B of Level VIIIA, begins at a depth of -7.98 m. (The Trench C, Levels VIIIB and VIIIC, containing units 1599-1599e, was discussed above.)

To summarize, the records presented us with: 1) a confusing picture as to the opening and closing elevations for the units of Trenches A and B; 2) a lack of photographs for both trenches; 3) sketchy field notes for units 1597-1597f of Trench A, but complete field notes for units 1598-1598f of Trench B; 4) no stratigraphy records for Trench A, but good stratigraphy records for Trench B; 5) one section drawing for Trench A, but none for Trench B; 6) a quake-disturbed pottery record for Trench A, but a complete undisturbed pottery record for Trench B; finally and most providentially, 7) a complete artifact catalogue for both test trenches.

- Only distinctive sherds are represented in the figures. The pottery statistics do not include the study of unit 1597.
- Unfortunately little is said in this report. Relevant information regarding Test Trench A follows the presentation of the material from Test Trench B.

Presentation of the evidence

In such a complex situation, I have decided to strike a compromise with the available data. Since the field records for the excavation of Test Trench B (units 1598-1598f) are complete, plus having its full pottery record, I will confine the unit breakdown — of soil deposits, artifact finds, and ceramic statistical analysis — to this Trench B. However, I am able to present certain distinctive ceramics from luckily undisturbed containers of Test Trench A, plus some sherds that were marked by the excavators with the unit numbers of that trench.

As there are complete catalogue descriptions of artifacts from both trenches, I will combine and present them here and in the Catalogue, Volume II, with the corresponding alphabetic subdivision of units — artifacts from unit 1597a of Test Trench A will be given *after* those found in unit 1598a (the more completely represented Test Trench B), 1597b after 1598b, and so on.

Further, as there are no section drawings for units 1598-1598f, and in order to present all possible evidence, I have included the one section drawing of 1597-1597f in Test Trench A that was found in the field notebook (and reproduced as part of Figure 27).

The photographs of the artifacts, taken by our team, are presented in two groups because of their great number: 8 artifacts from the earlier deposits are seen in Figures 379, 381; and artifacts from the later deposits in Figure 380.

Unit 1598 f

Unit 1598f was excavated from -7.33 m to -7.98 m below the Pekmez Trench 2 subdatum. This 0.65 m deposit was composed of brown soil, but in the W part of the trench, this was noted to be mixed with extensive ash areas and a residue of burnt mudbrick. In the SE corner,⁹ it is recorded that a small hole, possibly a pit, was found containing sherds intermixed with bones. Also a fragmented large brown-slipped jug (cat. no. 1598f.I, Figure 385.24) was unearthed containing what seemed to

- 8. For the review of the object catalogue, we have divided the photographs of the catalogued artifacts and the chipped stone tools into separate parts. Shown together on Figures 379; 384; 385, are artifacts from units 1598c-f and 1597c-f. On Figures 380; 387, are the registered artifacts from units 1598, 1598a-b; 1597, 1597a-b. Photographs of chipped stone tools from units 1598f and 1597f are shown on Figure 381; in Figure 382, chipped stone from units 1598c-e and 1597c-e are shown; and on Figure 383, the chipped stone from units 1598 and 1598a-b, 1597 and 1597a-b are represented. Drawings can be found in Figures 253-254.
- 9. A soil sample from this area was submitted for analysis, but there is no record of these results, or where they were sent to be analyzed.

be the bones of a young animal, or possibly an infant intermixed with a spongy fibrous soil.¹⁰ This jar appeared to have been buried in a pit encircled by a ring of stones, and may have been inserted from the unit above, 1598e.¹¹

Catalogued were 11 ground stones from unit 1598f and five from unit 1597f, 32 chipped stone pieces from unit 1598f and four from unit 1597f. A marine shell, Cerastoderma edule, the edible cockle, (cat. no. 1598f.16, Figures 194.1, 379.28), was discovered in this unit. It is the earliest marine shell to be found associated with the Pekmez deposits.

Only one originally catalogued ceramic could be located — a large one-handled jug (cat. no. 1598f.I, Figure 385.24), but we were able to find uncatalogued distinctive white-painted wares from this unit. They appear in Figures 384 and 385. From a micro-analysis of bowl forms, it was already clear that the pottery in unit 1598f of Test Trench B was a continuation of that found in the preceding unit, 1599a of the Test Trench C. The repertoire of the two units is similar but for the appearance in unit 1598f of several new forms that include flared rolled rims, inverted and carinated, flaring, and everted shapes. But by far the most significant shape of this unit is the continuation of the plain flared form (Joukowsky 1982:118-120).

Units 1598e3-1598e Inclusive

In the following discussion of units 1598e3-1598e, the ceramic analysis will be considered as a group — but the catalogued finds, distinctive ceramics, and soil deposits are discussed separately with their unit's stratigraphy infra.

Unit 1598e3

Unit 1598e3 was excavated between -7.20 m and -7.33 m and consisted of a brown soil.

Three ceramic pieces were catalogued in unit 1598e3. A flared hemispherical, thick-walled bowl (cat. no. 1598e3.1, Figure 384.26) was found in a fragmented condition, but with a complete profile. It has a rounded base, an articulated rim that bears an exterior groove, and it is black-slipped and burnished to a low luster. Half a spindle whorl (cat. no. 1598e3.10, Figures 311.10, 379.30, 385.32) was also recovered, as well as a complete one (cat. no. 1598e3.3a, Figures 311.6, 379.29, 384.29). Distinctive

- 10. No analysis of these bones has yet been made.
- 11. These field notes are inconsistent; in one place this deposit is recorded as having been in the SE corner, in another, in the SW corner.

pottery fragments include black-slipped wares that are white-painted with both horizontal bands (Figure 384) and vertical-and-horizontal bands (Figure 384.49).

Unit 1598e2

Unit 1598e2 was excavated from -6.97 to -7.20 m in the SE of the trench where a thick ash lens was reported; during excavation other such lenses were found scattered in the W sector as well as other parts of the trench. In this 0.23 m deposit the artifact assemblage was similar to the preceding units — with four ground stone tools, three chipped blades and flakes plus one « bone » object, a polished antler (cat. no. 1598e2.7, Figure 379.23).

Of particular interest is the torso of a marble figurine (cat. no. 1598e2.5, Figures 197, 207, 379.31, 385.47) unearthed in the E center of the trench at a depth of -7.05 m. This is a two-dimensional flattish idol of a rather rare type. Its simple, carefully polished and smoothed so called « Kilia » shape will be discussed in Part 4, p. 206, along with the other figurine of the Kilia type 12 (unearthed in Pekmez Trench 2 unit 1598a, infra). The upper body is typically stylized with the flipper-like arms bent at the elbows and raised over the breasts.

Units 1598e1 and 1598e

Units 1598e1 and 1598e were combined by the excavators in their field records, but the allocation of the artifact numbers in their original catalogue was kept distinct. Both units were excavated from -6.76 m to -6.97 m. The soil was dark brown in color with some ashy streaks running through it.

In unit 1598e1, one of the distinctive fragments is a flared black-slipped, white-painted bowl (cat. no. 1598e1.4*, Figure 384.27) with a vertical spool lug handle attached just below the rim. It is painted with diagonal bands and burnished to a high luster.

In unit 1598e, two distinctive white-painted fragments were found along with a black-slipped bowl rim that was white-painted in a crisscross motif and burnished to a high luster (cat. no. 1598e.7*, Figure 384.15). Other fragments painted with banded motifs are represented in Figures 384 and 385.

Within the adjacent Test Trench A, unit 1597e was excavated from -6.82 to -6.92 m below the trench subdatum. This unit is mentioned here because we discovered some distinctive black-slipped, white-painted fragments in a container that had not been damaged by earthquake.

Unit 1598d

Unit 1598d, a 0.31 m layer, was excavated from a -6.45 m to a -6.76 m depth. In addition to the large amount of charcoal unearthed in this unit, the soil deposit appeared somewhat burned and carbonized in some areas. In the E of the trench it was noted that the charcoal was cut into by small pits filled with rocks, pits probably dug and used by the Aphrodisians of later 1598c.

Few artifacts were recovered — only three ground stones and one chipped stone. However an interesting knobbed, nail-shaped ceramic (cat. no. 1598d.3) with a projecting conical cap and a plug attachment was noted. Its drawing can be found in Figure 387.24.

Roughly within the -6.45 to -6.76 m depth of 1598d unit of Test Trench B — was excavated unit 1597d of Test Trench A, from -6.52 to -6.82 m. Because of this close stratigraphic connection, the artifact catalogue and distinctive pieces of both units can be thought to represent a simultaneous development. And for both, there were no major changes in the pottery tradition — only clear antecedents in earlier deposits, units 1598e and 1597e.

RADIOCARBON SAMPLES

Two samples of charcoal, P-2029 and P-2030, are reported by B. Lawn (1975:205) as having come from *Pekmez Trench 2*, *Test Trench B*, *unit 1589d*, $-6.55 \, m$ below subdatum. I have taken the liberty of placing the collections of these samples in this unit, 1598d, as presumably the error in digit reversal took place during either the reporting or publication stages involved with this material. In accepting the placement of these samples here, we are assuming that the depth recording of $-6.55 \, m$ is accurate which is within the excavated depth of this unit — reported to have been dug from $-6.45 \, to \, 6.76 \, m$ below the trench subdatum.

P-2030 was charcoal from a lens of heavily blackened earth. (It was not NaOH treated, which may account for the difference between its date and that of sample P-2029.) The results are B.P. 4860 \pm 80 or 3050 \pm 80 B.C. and a recalibrated date ca. 3800-3520 B.C. P-2029 is from the same deposit; pretreated with NaOH, its results are B.P. 5450 \pm 80, 3660 \pm 80 B.C. and recalibrated to 4430-4110 B.C. (Lawn 1977:225. This date is corrected in this publication.). The results of these tests will be discussed further at the conclusion of this part.

Unit 1598c

Unit 1598c was excavated from -6.12 m to -6.45 m, a 0.33 m deposit. Many areas consisting of burnt lenses were found, and in the center S and center N of the trench, extensive burnt mudbrick debris was unearthed — indicating that a large conflagration had taken place. At this base of the unit, at a depth of -6.45 m, the whole trench showed evidence of burning.

^{12.} This is named after the « find place of the first intact example to be published ». (O. Höckmann 1977; see also F. Calvert 1901:329. On the type, see J.L. Caskey 1972:192ff.)

Few artifacts were recovered: three ground stone tools, 12 chipped stone pieces, and another *Cerastoderma edule*, a marine cockell shell (cat. no. 1598c.2, Figures 194.2, 379.34) similar to the one found in unit 1598f. However, a pin (cat. no. 1598c.12, Figures 274.1, 379.36) — the earliest example of metal work so far excavated at Aphrodisias — was discovered. Its ore content was tested in New York City and is reported in Part 4, p. 288.

Unit 1598b

Unit 1598b was excavated from -5.88 to -6.12 m below the trench subdatum. The soil was gray-brown in color. Two large rocks were located in a pit in the SW corner of the trench, at a depth of -5.92 to -6.12 m. Possibly this pit was dug by later settlers using the area of unit 1598a or perhaps even unit 1598.

Eleven ground stone tools, three smoothed stones as well as five chipped chert pieces were recovered here — but no bone, shell or metal objects.

This 0.24 m deposit had a collection of the smallest-sized sherds of any unit excavated and the condition of many of them was poor. (In our assessment of this deposit, we found that approximately 500 fragments were under 0.03 m in size.) This might be an indicator of heavy traffic in the area during the time of its use, or that it may have gone out of use and become a « walked-on » level.

Unit 1598a

Unit 1598a was excavated from -5.54 to -5.83 m. This 0.29 m deposit consisted of brown soil interspersed with some ash lenses plus a concentration of burnt mudbrick that were unearthed in the S of the trench. At its closing, several ash lenses were reported to have appeared in the NW.

This unit was particularly rich in its artifact assemblage. Of special interest is a fragmented marble figurine (cat. no. 1598a.3, Figures 198, 208, 380.15, 385.51) discovered at a -5.60 m depth on the E side of the trench. This decapitated figurine resembles the earlier Kilia, that was unearthed at a depth of -7.05 m in unit 1598e or 1.45 m below this one. 13 As stated earlier, these figurines are rare — approximately 21 that we know of in existence. A study of these distinctive fragments and a comparison of their types is given by Joukowsky (1982:87). And see also Part 4, p. 206; Getz-Preziosi, p. 217 ff.

Five ground stone pieces were found, as well as a rich array of chipped stone including ten chert pieces and two of obsidian. In the N of the trench, five well-

smoothed bone spatulas were recovered at an approximate depth of -5.73 m. Having catalogue numbers 1598a.12 and 1598a.17 to 1598a.20 inclusive, they are represented in the drawings on Figure 385, and in photograph on Figure 390.

Three ceramic objects were recorded: a spindle whorl (Cat. no. 1598a.II, Figures 311.7, 380.17, 385.30) found in the W sector of the trench; a pinch cup with a fragmented handle (cat. no. 1598a.I, Figure 385.3) from the far SW corner; as well as a second spindle whorl (cat. no. 1598a.7, Figures 311.3, 380.13, 385.29).

This unit contains materials that are similar to previous assemblages. As no stratigraphic, ceramic, or dramatic changes appear in its artifact collection, it can be inferred that it represents a continuum of the earlier activities.

Unit 1598

The latest unit recorded in Test Trench B is 1598, excavated from -5.25 to -5.53 m. This 0.65 m deposit was composed of a dry brown soil, interspersed with ash in the S of the trench.

The contiguous *unit 1597* had the same sort of deposit of brown soil but the ash area was more pronounced in the E sector of the trench. It was excavated from -5.20 to -5.45 m. The section drawing on Figures 27 and 34, shows the complex nature of the stratigraphy of these two units.

In unit 1598 an architectural feature, wall A, was mentioned in the field notes and in the publication (Kadish 1971:126) as extending into the W and N balks of the trench — but it was only the outline of this structure that was noted, and it was not represented on any of the plans or section drawings.

Unit 1598 produced ten chipped stones, all of which seem to be similar to the artifact corpus unearthed in the earlier phases of this trench. One worked and highly polished bone object (cat. no. 1598.14) was recovered which may have been the tip of a spatula. It is represented both in the drawings (Figure 385.40) and in the photographs (Figure 380.10). Also 12 heavily encrusted dried clay objects were classified, as four « sling pellets » and eight « enigmatic » objects.

The pottery assemblage is characterized by an overall similarity of material to that of earlier units, and holdovers are considerable... but slight modifications do continue, and when comparing this unit to 1598a there are indeed indicators of change that may provide us with certain keys to the evolution of decoration and shapeform analysis (Joukowsky 1982:155).

From the adjacent *unit 1597* in Test Trench A, one of the distinctive fragments catalogued was a black-slipped incurving bowl rim (*cat. no. 1597.I*, Figures 279.2, 320, 380.8, 384.46). Just below the rim a successful perforation was drilled after the vessel was fired; another perforation was attempted from the exterior of the vessel, but was left incompleted (see the section of this vessel, Figure 384.46 and its colour photograph in Figure 320). Decorating the exterior is a white-painted, crossed chevron motif which is close-burnished to a high glossy luster.

Levels VIID - VII Inclusive, ca. -2.77 to -5.20/5.30 m

Immediately over Level VIIIA of Test Trenches A and B lie Levels VIID-VII, a 2.50 m deposit excavated in 1969. These levels consist of a series of occupation layers plus a wall system, Walls A, B, C and D/E, that had been built at the beginning of the period. It should be noted that the stratigraphic connection between Levels VIIIA and VIID was not broken, and that I have arbitrarily separated these levels because of this wall complex — and then made the further divisions into Levels VIIC, B, A, and VII — in order to define better the various phases of the wall system and of the continuing occupation. 14

To demonstrate possible reuse activity associated with Walls A, B, D/E and principally with Wall C, the excavators had divided the deposit by assigning Levels VIIa-c. In the published preliminary report the bottoms of these levels have been presumably designated by plaster floor fragments (units 1563 and 1563b). To quote from Kadish (1971:127):

« Level VII occupies a stratum from ca. -3 m to -5.30 m and contains several subdivisions which need verification by future excavation. ... The evidence for a series of fragmentary floor remains, associated with VIIa, b and c, however, occupies the east part of the trench ... The series of occupation levels in VII, the most recent of which is VIIa, ends the occupation

- 14. It is difficult to reconstruct the dimensions of the trench. From the section and plans in Figures 37, 45-49, it will be noted that at the E balk (Figure 27) the trench was stepped at about -5.20 m; and on it's S side an approximate depth of -4.27 m, each time probably for the removal of debris. It may be reasonably assumed then that Levels VIID-VII of Pekmez Trench 2 have E-W limits of 8.00 m, N-S limits of 3.00 m at the E escarpment, and an approximate dimension of its W limit of 4.00 m.
- 15. VIIa-c. The excavators had not indicated the units for Levels a-c as having been a part of a specific level. Also since the elevations for these units were not clearly indicated in the field notebooks, I thought it necessary to realign units to « reasonable » depth measurements, and then assign these units to levels. My own subdivision into VII-VIID is based on the wall system and its reuse, on subtle pottery changes, and on the floor fragments.

continuity that exists from the depth so far reached in VIII up through VIIa. After this period Level VI accumulation built up on Pekmez mound (shows) no evidence of building activity. »

It should be noted that some ambiguity in the interpretation of these floor deposits is necessary because of the slanting tip lines, shown in the W balk section drawing (Figure 30) and in the photograph (Figure 38). Due to a lack of clear architectural evidence, we might assume that the floor fragments were a part of the reuse of the area.

Level VIID, ca. -4.90 to -5.20/30 m¹⁶

Plans: Figures 37, 45-47 Wall sections: Figures 38-44

Artifact assemblage: Photo: Figure 394

Chipped stone: Figures 255, 395; Photo: Figure 388

Distinctive pottery: Figure 389

Level VIID¹⁷ is the earth immediately above the two Test Trenches A and B, lying directly over their respective units 1597 and 1598 of Level VIIIA. It is comprised of 21 units ¹⁸ and represents a deposit of approximately 0.35 m. As there is some confusion in the field notebooks regarding elevation and unit areas actually excavated, the picture is far from complete. The soil in most of the trench is medium brown with characteristic ash, charcoal, and burnt mudbrick deposits.

The Wall System. VIID is the construction level of the Walls A-C and D/E (the excavators suggest that Wall E may have been an extension of Wall D), and also of the mysterious Structure A (infra). The partial wall fragments unearthed are illustrated on the plan in Figures 38-39, 44. In this level no well-defined floors but hearths are associated with these walls. The floors must have been merely of beaten earth — for they show no signs of having been plaster-coated until later levels when vestiges of plaster are indeed found. The hearths appear to have been constructed either directly on this earthen floor or raised. No post holes were discovered, so it cannot be determined whether or not this area in Level VIID or even part of it was roofed.

The incompletely preserved walls are composed of sun-dried bricks laid on stretchers, and although built without stone foundations, the construction shows care in execution. Large irregularly rectangular mudbricks had been staggered to form both walls C and D/E, indicating that they were probably laid at the same time. The principal wall, Wall C, extends in an E-W direction (Figure 37).

^{16.} Specific units ascribed to each level (Levels VIID-VII inclusive) are listed in their respective level discussion.

^{17.} For photographs, plans, wall sections and catalogued objects of this level, see also Kadish 1971: pls 26.11-12; 27.14-15, and ill. 5.

^{18.} Units 1576, 1578, 1580-84, 1586, 1588, and 1590-96.

To the W and perpendicular to Wall C is Wall D/E which extends in a N-S direction. It is probable that cross-walls or partitions existed in this complex — shown by fragmented Walls A and B, bonded to Wall C and extending N and S respectively. Neither Wall C nor D/E seem to be complete in length. In height, Wall C is preserved to 0.80 m and Wall D/E to 0.30 m. Their width is irregular and varies from 0.30 to 0.50 m.

The slant and alignment of the bricks probably followed the ancient floor level of the area — or their excavated stance may have been due to shifts in the earth. As no tip lines were recorded in the field notebook for these walls, plus there is a lack of clear stratigraphy for VIID, it is perhaps safer to assume that the wall alignment did indeed follow the ancient floor level. We noted that the W end of Wall C and the adjacent E end of Wall D/E are squared-off (Figure 37), as if to form a passageway.

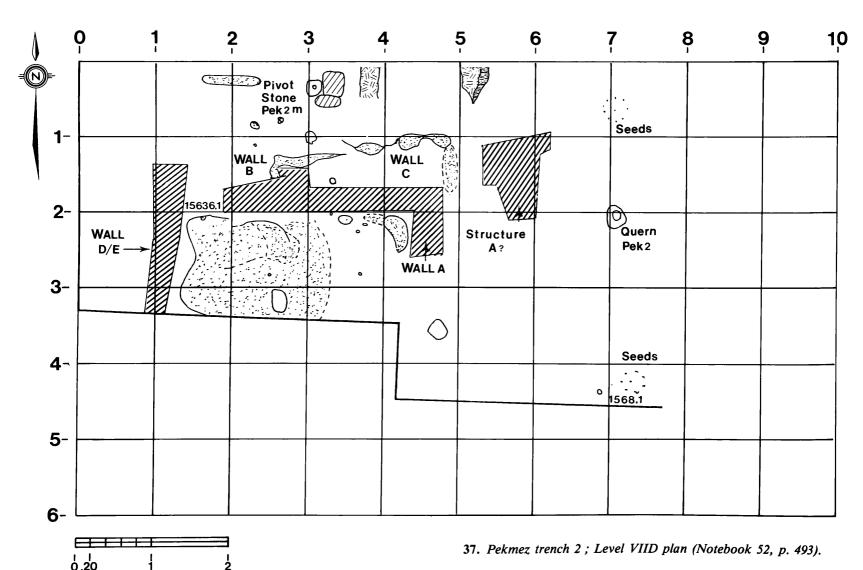
The puzzling Structure A was encountered in the NE part of the trench. Later use of the area plus incomplete preservation of this structure have made it impossible to interpret. Perhaps it was part of the wall system. The

outline of its irregular form is presented in the plan on Figure 37, and in photograph on Figure 53.

Some of the units in this level had been reserved by the excavators for the final recording of Walls A-C, D/E and Structure A — as well as for the straightening of ramp areas, and finally, for the actual removal of all structures. Level VIID, therefore, can be accepted as the layer in use when the walls were constructed — but the scope for stratigraphic investigation of this area was, as stated, limited.

It is difficult to say at what depth the walls were unearthed as this is not made clear in the surviving notes. We must assume that it was in this level at a depth of approximately -5.10/5.20 m that the base of the walls had been reached. Unfortunately, this base revealed no well-defined floors, only the aforementioned beaten earth. Summing it up, there is no evidence of foundation construction, roofing, or of floor surfaces for this important Level VIID.

Throughout the trench, this study will show it was not possible for us to separate, to treat distinctly the material related to the wall construction because of the



intrusions from balk debris, the removal of the structures themselves, and the fact that the walls were probably laid directly over the inhabitants' leveling off of the earlier material in VIIIA. We noted that no sections for VIID were recorded or aligned on the escarpment walls or in the site notebook (except for profiles of the walls themselves seen in Figures 40-43).

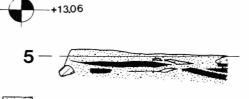
But within the limits of Walls C and D, a wide range of artifacts had been unearthed on the NE side of the trench. As they are at the base of Wall C, they are considered to be relatively contemporary with its construction. Also the larger numbers of chipped stone and pottery fragments lying inside the wall area throughout its periods of successive use indicates this space probably served as an interior domestic area. Of note are a few white-on-black ceramics (Figure 389), undecorated spindle whorls, plus several stone and ceramic disks found with a ceramic cup or ladle (cat. no. 1576.III, Figure 389.44). Ground stone as well as tools are present as well as a continuing deposit of chipped stone implements in chert and obsidian — including blades, flakes, and a core.



38. Pekmez trench 2; Wall C section, N face looking E.



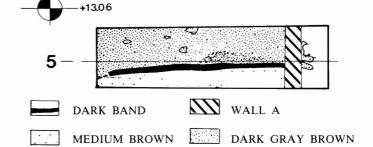
39. Pekmez trench 2; S face of Wall C, looking E with Wall D/E in the background.



GRAY/BROWN & CHARCOAL

DARK LENS 1.20 1 2

40. Pekmez trench 2; Level VIID; Wall D/E, W face section (Notebook 52, p. 533).



41. Pekmez trench 2; Wall C, S face section (Notebook 52, p. 530c).



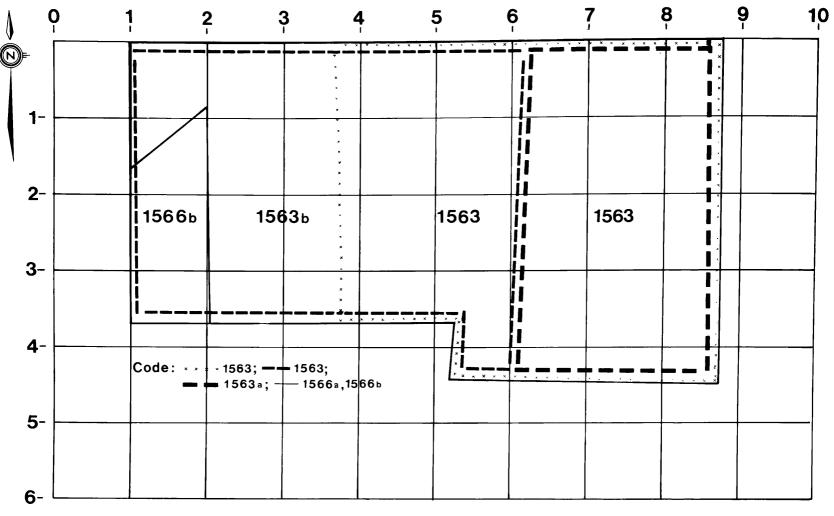
42. Pekmez trench 2; Wall C, N face section (Notebook 52, p. 530c).



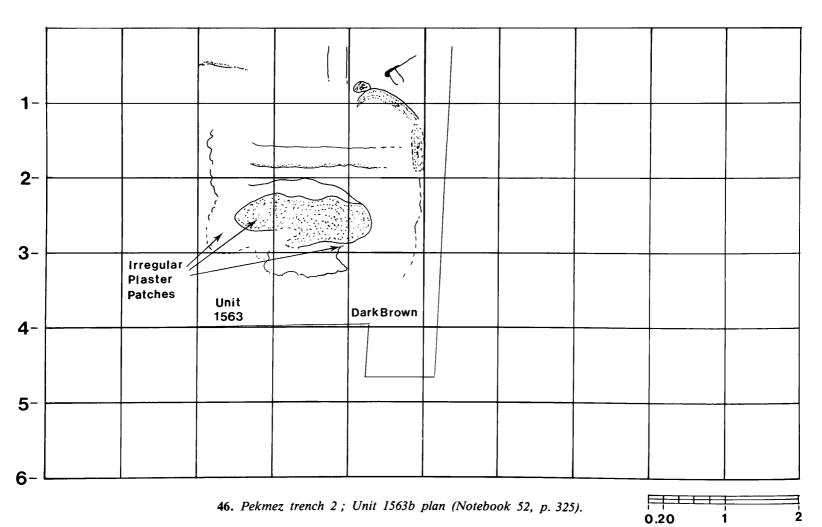
43. Pekmez trench 2; Wall D/E, E face section (Notebook 52, p. 535).



44. Pekmez trench 2; S face of Wall C, looking N.



45. Pekmez trench 2; Plans of units 1563, 1563a, 1563b, 1566a (Notebook 52, p. 323, 325, 335, 342).



46. Pekmez trench 2; Unit 1563b plan (Notebook 52, p. 325).

Level VIIC, ca. -4.20 to -4.90 m

Plan: Figures 45-47 Section; Figure 48

Artifact assemblage: Figure 397 Ceramics: Figures 392-393 Chipped stone: Figure 255

Photo: Figure 391

0.20

Level VIIC also contained 18 units, ¹⁹ none with well-stratified remains.²⁰ There is, however, some observable stratification for this 0.70 m deposit plus minor alterations of the VIID wall system. Of the 18 units, 15 are considered « certain » in that there is relative certainty for their assignment in this level. The other three units are listed as « probable », meaning that we have reserved judgment for their placement here.

This is an area of light brown soil intermixed with occupation debris, partially sealed off from Level VIIB by ash bands and different colored soils. It can be assumed that VIIC is a cultural continuation of VIID as is VIIB which succeeds it, and also between Levels VIIB and VIIA

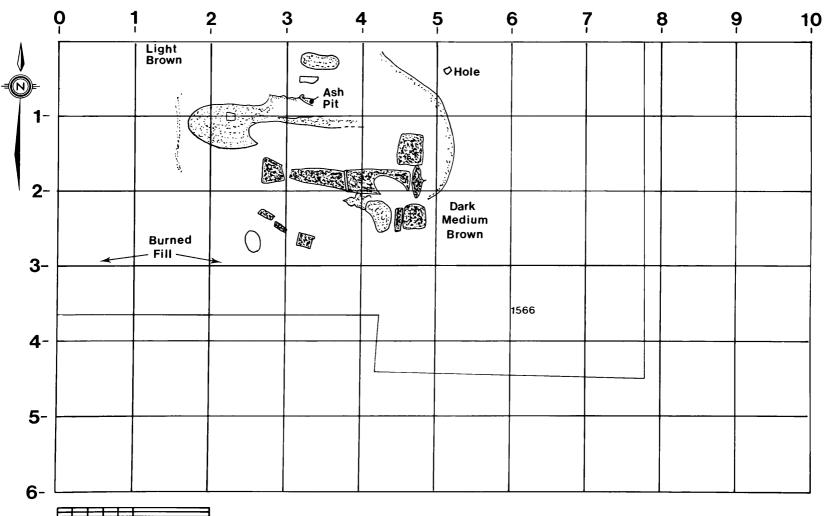
2

we can assume a continuity of development... since the units through these periods contain much the same ceramic tradition with only minor modifications. Thus the area seems to have been reused through different times without changes that would be considered fundamental.

Earlier Level VIIC. During this phase the wall system begun in Level VIID continued in use, but little still is revealed about the nature of the construction of these « buildings » and their floor levels. Insufficient evidence and the lack of bonded walls do not allow us to draw any certain conclusions.

Outside, or to the north of Wall C, there is evidence of mudbrick debris, burnt and unburnt clay deposits, and large stones. It is not clear, if this debris indicates another wall in the area which could not be identified. As there is an absence of ground stone tools and distinctive pottery, and only four chipped stone implements, we are forced to examine what pottery was collected. For the interpretation of this locus, a wide spectrum of bowls, cooking pots, baking trays, bases and handles clearly shows that this continued as a domestic area — although in this level not a single spindle whorl was found.

In the E part, areas of ash, scattered seeds, a quern, a few ground stone tools, some six chipped stone implements,



47. Pekmez trench 2; Unit 1566 plan (Notebook 52, p. 335, 337).

^{19.} Units 1546a-b, 1549, 1561, 1563a-c, 1566, 1566a-c, 1568, 1569, 1571, 1573, 1585, 1589.

^{20.} For a full discussion of each of these areas, see Joukowsky 1982: 206ff.

and a wide selection of distinctive pottery was unearthed.²¹ There is no clear pattern of arrangement except that near the E escarpment there may have been a place reserved for seed preparation.

Immediately to the S of Wall C, a large piece of charcoal was uncovered with ash deposits, possibly indicating that a roof constructed of wood burned during this early phase of the Level VIIC settlement.²² The area to the W of Wall D/E is so incomplete in both excavation and artifactual evidence, that nothing can be understood about it at this time.

Although some special features can be recognized in these deposits, to a large extent they were disturbed by later builders — and our exercise in separating them for a specific analysis has shown us little patterning or arrangement that might be considered conclusive.

Later Level VIIC. These later units of Level VIIC are still contemporary with the various uses of Wall C — but they seem to belong to the latest identifiable phase of this building complex. The other walls that were associated with Wall C appear to have fallen into disuse. Again, there are widespread patches of ash. No structural remains of importance are found — except for one recognizable fragmented plaster floor uncovered in unit 1563b (supra).

By this time Wall C itself has become somewhat ill-defined — and the activity of the locus is hard to reconstruct, particularly since the area is represented by overlapping units. Their delineation and interrelationship is often indefinite and hence difficult to interpret.

Level VIIB, ca. -3.97 to -4.19 m

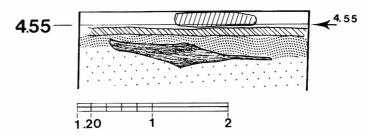
Plans: Figure 46

Chipped stone: Figure 256; Photo: Figure 395 Artifact assemblage: Figure 396; Photo: Figure 394

Only nine units ²³ have been assigned to this level, and of the nine only six are certain. Level VIIB represents the deposit lying above the latest possible use of the Level VIID wall system — in Level VIIC — and thereby provides a transition between Level VIIC below and VIIA above it. No structure was seen here, with the exception of areas of fragmentary yellowish plaster along with ash concentrations (*supra*).

- 21. In unit 1568, 1200 pottery fragments were collected of which 691 or 57 % were classified. There is a wide range of function, and use of both slip and burnish. The areal extent of this locus is the largest of those excavated in conjunction with the wall system, so it may not be that these figures are meaningful.
- 22. The pottery from this burned deposit shows no traces of secondary burning. In this deposit 439 pottery fragments were collected; 231 or 51 % were classified. This may indicate that a great deal of activity took place here. But few fragments could be considered shape types (see Part 4), because many were too small for classification. A wide selection of types and wares, however, were found along with a variety of slip and plastic decoration techniques.





48. Pekmez trench 2; Unit 1566c section (Notebook 52, p. 346).

The assemblage includes seven ground stone tools — whetstones, smoothed stones, grindstones. All these can be found in Figure 394. Numerous chipped stone artifacts will be noted above.

Level VIIA, ca. -3.33 to -3.85 m

Plans: Figure 49

Section: Figures 32, 33, 34 Artifact assemblage: Figure 397 Distinctive ceramics: Figure 399

Chipped stone: Drawings: Figure 256; Photo: Figure 398

Level VIIA does not survive in a coherent plan. (This can be seen on the composite plan of Levels VIIA, VII, and VI, Figure 49). Its base is not given in either the preliminary report (Kadish 1971:126) or in the field notebook, so I have assumed its demarcation and arbitrarily defined it as a 0.52 m depth of debris roughly extending from -3.33 to -3.85 m, comprised of 15 units.²⁴ Little can be learned from the stratigraphy except that there were scattered plaster fragments found indicating the possibility of a floor.

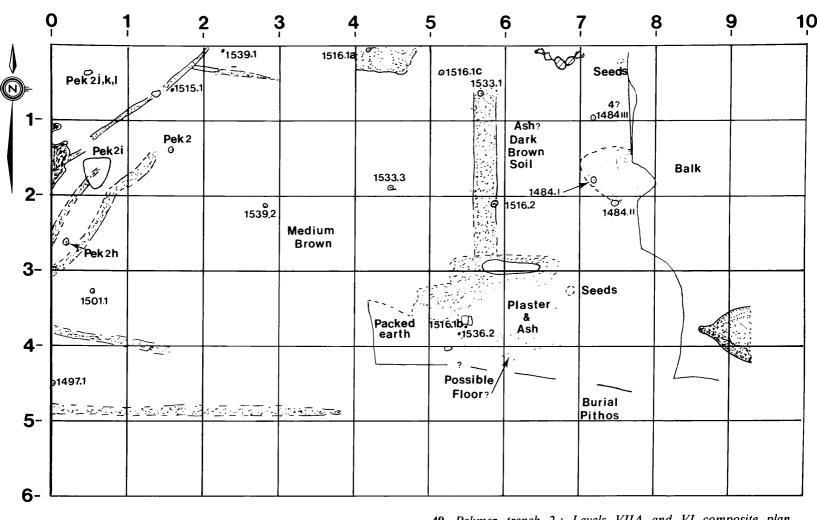
23. The six « certain » units in this deposit are evenly distributed between the eastern trench and the western trench.

Level VIIB - « Certain » Units

Western	Depth in m	Eastern	Depth in m
Units	below subdatum	Units	below subdatum
1539	-4.90 to -4.29	1563	-4.19 to -4.53
1536	-3.88 to -4.05	1560	-4.02 to -4.19
1540	-3.96 to -4.33	1547	-3.86 to -4.02
		1547a	?

Thus in the western trench, this level runs a depth of about 0.45 m and in the east to a depth of approximately 0.51 m. Some of these units can be found positioned on the unit diagrams presented in Figures 29, 31-33. Of the nine units assigned to this level there are no field records for unit 1546, and unit 1537 was a locus allocated for the straightening of the W escarpment.

24. Units of Level VIIA are 1515, 1515a, 1519-20, 1523, 1525, 1527, 1532-33, 1535, 1554, 1558-59, 1575.



49. Pekmez trench 2; Levels VIIA and VI composite plan (Notebook 52, p. 491, 530a).

The pottery analysis clearly shows us that some changes are taking place. There is a dramatic increase of bowls with incurving, inverted and carinated shapes — an indicator that the student of Anatolian prehistoric ceramics will not ignore. More will be said about these factors in Part 4. An artifact of interest is an imported carnelian bead with an attempted perforation (cat. no. 1533.3, Figure 399.48.

RADIOCARBON SAMPLE

1

0.20

A « combined »²⁵ charcoal sample, P-1655, was taken by the original excavators from « below the level of the plaster (?) floor »²⁶ in unit 1523 of Level VIIA and at a depth of

- 25. B. Lawn states, « ... combined small charcoal sample from Level 7, Pekmez mound, Trench 2 » which referred to the sample having been gathered from several different places within the unit.
- 26. In the field notebook (52:197-198) the excavators first reported a « hard area » or « floor » in unit 1523. It was recorded as composed of « hard clay » that is then referred to as « plaster » (ibid.). Whatever the consistency of the floor, it is described as having a concentration of « little bits of gravel... bits of bone and broken fragments of pots on the floor ». The extent of this area is shown on the composite plan (Figure 49) and is represented as plaster for the purpose of delimiting it from other deposits.

-3.57 m. The results of the sample are B.P. 2250 ± 60 , 370 ± 60 B.C. and corrected to 410-360 B.C. (Lawn 1971:371). This date will be discussed *infra*, p. 163.

Level VII, ca. -2.77 to -3.33 m

Plans: Figures 49, 50

Sections: Figures 29, 32, 33, 34, 37

Artifact assemblage: Figure 402; Photo: Figure 400

Distinctive ceramics²⁷: Photo: Figure 319

Chipped stone: Drawings: Figure 256; Photo: Figure 401

Thirteen units²⁸ have been ascribed to Level VII, a 0.56 m deposit. This level is the last subdivision of cultural Level VII series, the latest of these deposits. To judge by the evidence shown on the composite plan of Figure 49, little architectural evidence survived.

- 27. For photographs of the small crude cups associated with these deposits, see Kadish 1971: pl. 26.13.
- 28. Units 1501, 1501a, 1501b, 1508, 1513, 1516, 1526, 1550, 1551, 1552, 1574, 1587. The stratigraphy of relevant units will be discussed individually, but units 1551, 1550, 1552, 1574, and 1587 are considered to be stratigraphically unreliable because they were designated for balk cleaning.

However, ceramics we considered worthy of note were: podic cooking-pot bases; several inverted bowl fragments (Figure 402); and a bowl fragment with double-cordeye handles (cat. no. 1516.1, Figure 402.10). Also three metal objects were recovered: a pendant (cat. no. 1550.1, Figures 274.3, 400.15); a broken bent wire (cat. no. 1516.1, Figures 274.4, 400.21); and a bead (cat. no. 1516.2, Figures 274.5, 400.22).

An intrusive burial was unearthed within unit 1516, excavated from -2.85 to -3.63 m; consisting only of a human skull.²⁹ Associated with the skull were a number of artifacts, five of especial interest: a possible « fat lady » figurine of calcium carbonate (cat. no. 1516.3, Figure 222); a fragmented stone axe (cat. no. 1516.4, Figure 400.6); a stone ball that shows allover pitting (cat. no. 1516.7, Figure 400.23); a smaller stone ball (cat. no. 1516.6, Figure 400.19); and a black bead (cat. no. 1516.6, Figure 400.20) that was possibly part of a necklace, but no other beads were found.

Summation

These strata had opened in Level VIID with the construction of the wall complex... which continued in use through VIIC. Following the build-up of debris and partial ruin of the living areas in each of the levels, beginning as early as VIIC, numerous modifications had taken place... until by the end of Level VII these areas no longer served the inhabitants and became covered over with fill.

Level VI, ca. -2.15 to -2.77 m

Plans: Figures 49, 50

Artifact assemblage: Figure 405; Photo: Figure 403

Distinctive ceramics: Figure 405 Chipped stone: Photo: Figure 404

Level VI contained 20 units, 30 with a deposit of 0.62 m. There is a minimum of confusion relating to its upper limits at -2.15 m due to the accumulation of homogeneous dark brown earth covering a major part of the trench; there is confusion, however, as to its lower limits, and its separation from Level VII since there is no definite delineation between them.

We also know that during the final period of Level VI it was used as a burial ground — because of intrusions of artifacts as well as insertions of pithoi from Level V or even IV, and because pits from later levels disturb the area. As a result the picture of its living pattern, if indeed there was one, cannot be recreated. Since little evidence of settlement activity could be noted, it seems a fair indication the area was not inhabited.

For the most part, we tentatively accept the reconstruction put forth by the excavators in the preliminary report (Kadish 1971:126):

« Since there was in Trench 2 no evidence of buildings of any kind and since most of the pottery seems so far to be disconnected and unreconstructable sherds, it is difficult as yet to know how the earth accumulated and how long it took to do so. This will probably become clear as the excavation and pottery study continue and when the results of the charcoal dating begin to yield evidence. The uppermost 10 cm of this stratum is consistently a darker brown than the rest of the layer and gives the appearance of an accumulation resulting from a period of heavier vegetation than had taken place during the rest of the build up of VI. »

Some interesting artifacts give further suggestion the deposit was disturbed: a piece of blue schist (cat. no. 1524c.1, Figures 223, 403.7) which I was able to determine was a figurine (see p. 213), was found associated with a few beak-spouted ceramic fragments (cat. nos. 1502a.I, Figure 405.8, and 1548.I, Figure 414.5).

Levels V-IVe, ca. -1.40 to -2.15 m

Catalogue assemblage: Figure 408

These two levels are presented together because little difference could be discerned between them — the architectural features were not distinctive, and the area was so disturbed with pits and pithoi that it was difficult to determine what level either belonged. The following is an attempt to delineate their features.

Separating Level V³² from Level VI below is the aforementioned deposit of brown earth.³³ In the NE corner of the trench the earth became clayey brown with ash deposits. In the ash were found a small ceramic bowl with horizontal loop handle (cat. no. 1495.I, Figure 405.15); a quern Pek. 2d, Figure 414.10); and a grindstone (Pek. 2e).

Above this ash deposit was a wall and partial floor, both of yellow-colored mudbrick. Associated with the floor was a knobbed cooking pot (cat. no. 1495.II, Figure 405.25), and a pithos fragment with a crescentic lug handle (cat. no. 1475.1*, Figure 412.15). Above the floor lay more brown earth intermixed with charcoal flecks.

An interesting discovery were four huge fragmented storage jars.³⁴ One, referred to as Pithos C, was complete but for rim and neck. Another, Pithos D, containing animal bones and ash, had probably been sunk from the ashy level that covered the deposit. All were said to be

^{29.} To date, no anthropometric study has been performed.

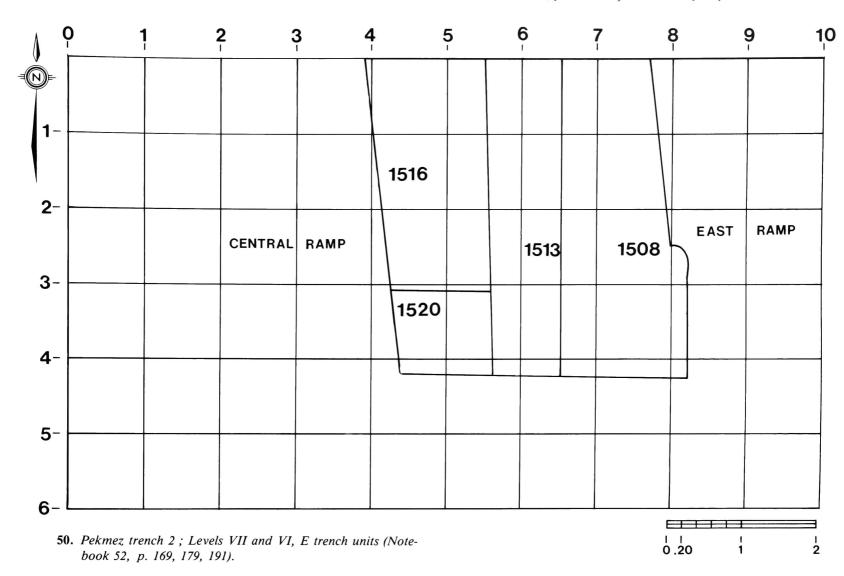
^{30.} Units 1497, 1500, 1502a, 1507a-b, 1524b-c, 1528-29, 1531, 1548, 1554, 1555, 1567, 1570.

^{31.} There are no carbon-14 dates available from this deposit.

^{32.} In Levels V-IVe are units 1468, 1470, 1473, 1476, 1478-81, 1483-86, 1488, 1491, 1493-95, 1501a, 1503, 1509, 1511, 1511a (?), 1517.

^{33.} For a plan of this stratum see Kadish 1971: ill. 3.

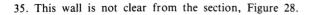
^{34.} One of the pithoi could not be found for documentation.



- 51. Pekmez trench 2; E balk with Pithos C.
- 52. Pekmez trench 2; Unit 1460 hearth.

covered with this ash. Fallen mudbrick with a thin line of mortar lay to the E of these pithoi in the NE sector Associated with this deposit were two spindle whorls with bilateral white-filled incisions (cat. nos. 1491.1, Figures 406.3; 407.23 and 1491.2, Figures 406.4, 407.20).

A semi-circular arrangement of stones, probably forming a hearth, was uncovered at a -2.28 m depth. In the N escarpment (Figure 28) a house wall (?) was unearthed which may have been associated with this hearth.³⁵ A series of plaster floor fragments plus more ashy deposits was found between -2.09 m and -2.19 m, and another spindle whorl with bilateral white-filled incisions (cat. no. 1488.1, Figures 406.2, 407.21).







Pits interlaced this entire stratum. Red pigment associated with these pits led the excavators to suggest the area may have served for pottery production.

Level IVd. ca. -2.15 m

This « level » contained a few centimeters of earth — presumably it was a unit of excavation used to divide Level IVc from the earlier trench deposits of Level V. The three levels d-b contained 18 units.³⁶

Levels IVc and IVb. ca. -1.80 to -2.15 m

These levels are combined due to inconsistencies in reporting. They were both excavated to approximately a – 1.80 m depth. No walls or foundations were found, only a large stone-packed ash circle, which probably served as a cooking area. It is because this cooking area, unit 1467, was assigned to both IVc and IVb that I thought it best to combine the two levels. Uncovered in this unit were sherds, animal bones and pottery fragments, including a neck-grooved, beak-spouted vessel (cat. no. 1467.1, ³⁷ Figure 408.28).

Level IVb is reported as having a brown soil with scattered rocks, small ash areas, and interlaced with large pits excavated by its ancient inhabitants. In the preliminary report the excavator (Kadish 1971:124) says « bits of evidence suggest metal working » was carried on here. We did find a few fragments of slag in the collection container, which may have provided the basis for this statement.

Level IVa, ca. -1.40 to -1.80 m

This level is characterized by a mixed deposit: intrusive artifacts of the classical period were found. No architectural features were reported. There are 17 units.³⁸

Level III, ca. -1.12 to -1.40 m

This level is also an admixture of prehistoric and classical materials. The excavators have labeled it « Hellenistic » with good reason, for the majority of the artifacts appear to be of that period. It contains ten units.³⁹

The Pekmez Trench 2 Pithos Burials

Plans: Figures 57-58 Sections: Figure 27

Artifact assemblage: Figures 53-56, 59, 410-411

In lowering the E ramp of Trench 2, a fragmented pithos containing two skeletons was discovered at a depth from ca. -2.22 to -3.32 m below the trench subdatum. We have been able to ascertain that this burial actually involved four units: unit 1534 was the discovery of the pithos; unit 1579 was the excavation of the pithos interior; unit 1531 was where its base rested; and unit 1577 was devoted to the final excavation and removal of the pithos. Figures 53 and 59 show its position in the trench.

The burial is undoubtedly intrusive. Although Level VI seems to be the upper limit of the pithos, with the base resting in Level VII, the actual level from which this pithos was interred is problematic as it did not break through any clearly defined floor. The excavators thought that « the pithos did not appear to have been sunk into this level from the level above (V) ». But we think it can

53. Pekmez trench 2; Pithos Burial in situ with Level VIID walls.



^{36. 1460-62, 1464, 1466-7, 1471}a, 1496, 1499, 1502, 1505a, 1508, 1512, 1499, 1502, 1505a, 1508, 1512, 1518a, 1521-2, 1524, 1534, 1541.

^{37.} Kadish 1971: pl. 25, fig. 2.

^{38. 1452, 1455, 1457-59, 1462, 1463-63}a, 1471-2, 1474-5, 1487, 1494, 1498, 1504, 1518.

^{39, 1449-51, 1453, 1465, 1543, 1548, 1562, 1562}a, 1564.



54. Pekmez trench 2; Burial Pithos with offerings of skeleton (a) in situ.



55. Pekmez trench 2; Burial Pithos with offerings of skeleton (a) in situ.



56. Pekmez trench 2; Burial Pithos with offerings of skeletons (a) and (b).

be inferred the burial was inserted either from Level V or, even more probably, from the one above that, Level IV. The question will be discussed in Part 4, a section devoted to distinctive ceramics, when parallels to the black-slipped wares associated with this burial are made. Following is a breakdown of this excavation by unit.

Unit 1534

This unit of the actual discovery of the pithos burial opened at -2.33 m and closed at -2.86 m. The field notes describe the soil conditions as difficult to understand, because the area was concentrated with ash and root growth (which had even impenetrated it). This huge vessel (Figures 410-411) was discovered lying on its side in a pit, with its mouth pointing toward the E. Unearthed with the pithos at a depth of -2.38 m were black-slipped wares and pithos sherds, undoubtedly from the fragmented jar itself.⁴⁰ The only stone in association was the thin slab of capstone which had sealed it.⁴¹

In this unit's collection container we found one chipped stone tool that had been catalogued in 1970; two other chipped stone pieces were catalogued by us. One was a translucent chert « sickle » blade (cat. no. 1534.1, Figure 409.2) exhibiting fine retouch with silica sheen on its left edge, a sharp corner on its right distal surface and then a rounding off with small regular parallel scars. ⁴² Other tools include a quartz blade (cat. no. 1534.50, Figure 409.1) and a black chert waste flake (cat. no. 1534.51).

Unit 1577

This unit involved the removal of the pithos (after its interior had been excavated in unit 1579, *infra*). Just to the W of the pithos mouth an ash pit had been noticed. And at a depth of -2.41 m, a seed sample was taken.⁴³

No ground stone tools were found in this unit, but eight chipped stone artifacts of chert had been catalogued. Of interest is a blade with silica sheen (cat. no. 1577.1, Figure 409.3). On both its ventral edges there are signs of denticulation, with sheen appearing on edges and surfaces; the retouch becomes extremely heavy and invasive on the left dorsal edge. Cat. no. 1577.2 (Figure 409.4) is a denticulated blade. Other than a blade blank (cat. no. 1577.3, Figure 409.5), the five remaining chert pieces are of chipped waste and include catalogue numbers 1577.100 to 1577.104 inclusive. One fragment of quartz waste was also recovered.

- 40. Level VI, see unit 1531 discussion in Joukowsky 1982:336.
- 41. A search for this slab was made so that its accurate dimensions could be given, but it was not located.
- 42. It is of interest to note that the silica sheen does not overlap onto other surfaces as is commonly found with such tools.
- 43. No results have been registered of its analysis.

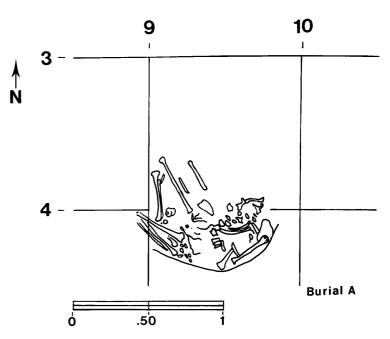
The only pottery of importance in this unit is the pithos itself. Its photograph is represented in Figure 410, and its drawing in Figure 411. This multi-handled vessel bears three sets of three rounded vertically positioned loop handles - placed on the sides of the neck, on the upper body/shoulder, and on the upper part of the conical base. The pithos is 1.30 m in height and 1.10 m at its widest point; the diameter of its rim is approximately 0.42 m. The ware-fabric is a dark reddish brown 2.5YR3/4, the core is black, and parts of the surface fabric of both the interior and exterior are worn away. It is densely tempered with inclusions. The vessel walls range from a thick 0.05 to 0.08 m. This burial pithos was particularly shattered on the upper surface of its base, and it was here that the roots and ashy earth probably entered.

Unit 1579

It is this unit that was reserved for the excavation of the pithos interior. At the outset a fine-textured brown soil was encountered containing land snail shells, scattered sherds, loose bones, and seeds from which more samples were taken for analysis.44 All of this artifactual and nonartifactual material was considered to be intrusive. Inside the pithos, below the soil, the two inhumations were discovered. Both skeleton (a) and skeleton (b) were found in states of varying disarray.

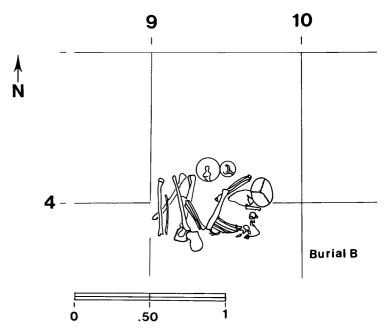
Skeleton (a) was encountered lying on its right side, partially flexed,45 with its head oriented toward the mouth of the pithos, or to the E (Figures 56, 57). Below its rib cage and under most of (a) was noticed an area of reddish-brown unidentified powdery material; perhaps the skeleton had been laid on a mat or some other woven material when it was interred. Because the bones were partially disarrayed, it is not known whether or not this was a secondary or primary burial; it is possible that the body decayed and was then placed inside in a somewhat articulated position. Found behind the legs of skeleton (a) was a flat everted black-burnished rim sherd.

Skeleton (b) was discovered lying slightly to the SW of skeleton (a) with its bones completely disarranged (Figures 56 and 58). Its skull was found collapsed onto its pelvic area, the scapula was found in the SW part of the pithos, and the vertebrae were found scattered all around with loose bones recovered from areas N and S of skeleton (a).



57. Pekmez trench 2; Pithos Burial Skeleton (a) (Notebook 52, p. 395).

The state of disarray was such that it was impossible to recognize the original position of the body. This was probably due to the reuse of the pithos for the interment of skeleton (a). Thus skeleton (b) was presumably an earlier burial found behind the legs of (a). The bones of (b) had obviously been brushed aside for the later interment. The association of the two individuals may indicate that this was a family tomb. Unfortunately no physical anthropometric analyses have been performed on the bones.⁴⁶



58. Pekmez trench 2; Pithos Burial Skeleton (b). (Notebook 52, p. 391-393).

^{44.} There is no note in the field notebooks or other site records as to the results of this analysis, or to where the seeds were sent for this

^{45.} The size of the pithos would preclude the bodies from being extended.

^{46.} It is presumed that anthropometrical investigations were hampered by the nature of the fragments, as there were no reports concerning these.

In the field notebook it was clearly indicated that only jar offerings accompanied the dead. But we discovered three ground stone tools and seven chipped stone pieces in the collection containers and accordingly catalogued them. Six of the seven chipped stones are of chert — the seventh, the only piece of real interest, is a clear colorless obsidian microlith-sized bladelet (cat. no. 1579.105, Figure 409.7). All the others are waste flakes including cat. no. 1579.101 (Figure 409.6). No metal or bone artifacts were found in the pithos.

Besides the rim sherd mentioned above, ceramic jar offerings accompanied the dead. Three of these are definitely associated with skeleton (a) since they were discovered resting in front of the body (cat. nos. 1579.I, II, and III, Figures 343.1-3, 344, 411.2-4). But the fourth jug (cat. no. 1579.IV, Figures 343.4, 344, 411.1) was recovered from behind skeleton (a) and may have remained there from the earlier burial.

Cat. no. 1579.I (Figures 343.2, 344.2, 411.3) is a jar characterized by a large cutaway spout. Cat. nos. 1579.II (Figures 343.1, 411.4) and 1579.IV (Figures 343.4, 344, 411.1) are both small beak-and-cutaway spouted jugs with a burnished black-slip polished to a high luster — but 1579.II is further decorated with appliqued knobs. Cat. no. 1579.III (Figures 343.3, 344, 411.2) is a drinking vessel with cutaway spout and is sometimes known as an « infant feeder »; its small tubular spout was not recovered in the burial. Cat. no. 1579. IV (Figures 343.4, 344, 411.1), found at -3.17 m, is a small jug with a black slip that is burnished to a high, glossy luster.⁴⁷ The first three of these vessels - I, II, and III - bear stains of an irregular crisscross pattern on some sort of woven material.⁴⁸ No complete black-slipped cutaway jugs have been found in other contexts at Aphrodisias — it is postulated that they were manufactured specifically for these two burials and may have been imported. Further discussion will be found in Part 4 in the section devoted to ceramics, p. 404.

Pithos Burial Summary

These two burials would seem to indicate the continuous use of the same pithos, or that after some interval the second body, skeleton (a), was inserted. It was perhaps at this time that the pithos was so badly shattered at its base, but this must remain a point of conjecture. There was no use of stones to support or protect the huge jar, with the exception of the aforementioned capstone.

The pottery from this burial does not cover a great

range of form. The jug types with high projecting cutaway spouts are found at Beycesultan, Kusura and also Troy — but these variants and parallels will be discussed in Part 4. The presence of chipped stone tools in this deposit are relevant to the interpretation of the burial, for it is by no means clear whether they were deliberately placed with the pithos in context or simply represent part of the accumulation of occupational debris. Further, it can be questioned whether or not they owe their presence to a confusion in excavation reporting. It is curious that *cat. no. 1534.1* (Figure 409.2) is the same type of chert as a piece in Level VII (*cat. no. 1516.100*, Figure 401.2).

The information that can most appropriately be sought from the pithos insertion and from its stratigraphy is that in our chronicling of events there is a shifting of cultural use of Pekmez between Level VII and the time of the burials. Further investigation of these levels may reveal whether we can ascribe this to inevitable cultural change — change that eventually involved the abandonment of the Pekmez mound sometime before or after the pithos was inserted.

For well-documented parallels of this type of burial, we can look to the Early Bronze Age cemetery at Yortan (CRAI 1901: nos. 810-817), and at Karataş-Semayük (Mellink 1965c:241 ff.) where all the burials were contained in jars or pithoi. And although rare, stone slabs were also used there as capstones — and most of the jars faced E (*ibid.*, p. 241). In her report, M. Mellink states that in secondary burials:

« ... the bones of the previous occupants were pushed to the base of the pithos along with whatever tomb gifts were left. The additional body was neatly inserted in the main available space, tomb gifts were added and the original cover was put into place. »

If this process holds true for the burial at Aphrodisias, and it certainly seems to, then it might be reckoned that all of the jar offerings accompanied only the second burial, skeleton (a).



59. Pekmez trench 2; Burial Pithos in the E ramp looking E.

^{47.} Kadish 1971: pl. 26.10.

^{48.} There is no indication if these stains may have been brought about in manufacture of the pots, or whether they resulted from their position in the burial. Reason would indicate that the burial deterioration might have produced them, for *cat. no. 1579.IV* did not bear any stains.



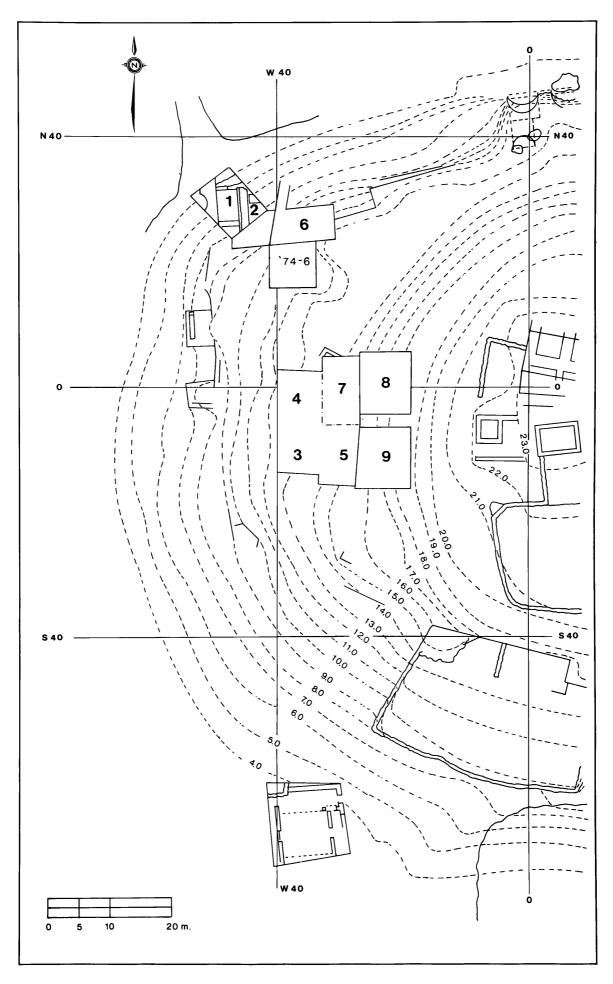
60. View of the Acropolis Mound looking NW with the Roman theater and baths (Photo: the author).

THE ACROPOLIS MOUND

If one stands at the summit of the Acropolis, there is a spectacular unobstructed view as far as the eye can see. Below is the monumental classical site... its feeding plain, the plateau, and beyond, the surrounding mountains. The Acropolis mound dominates the site of Aphrodisias. It appears to be entirely man-made, for native soil was not reached in any of the nine trenches that were cut into its 24 m high slope. In Figure 12, may be seen the ruins of a Byzantine defense wall that stands on the lower W slope NW of Trenches 3 and 4, as well as the ruins of the historic period seen near the highest point of the mound.

For nine one-to-two month summer seasons, in the 1960s, the Acropolis site was excavated. Even with half the mound dug away by the Romans for their theater, K.T. Erim's choice to excavate the W side of the mound proved providential. Work began in 1966 in Acropolis Trenches 1 and 2, and was conducted annually through 1974. The program of excavation can be found in Table 1, Part 1, p. 36.

In the following discussion, the stratigraphy of each of the seven trenches will be presented, and then the two Kuşkalesi trenches, located to the S of the Acropolis.



61. Topographic map and plan of the West Acropolis mound (Drawn by F. Hueber, H. Hambruch and W. Höhnl; redrawn by James Heyle and Mary G. Winkes).



62. The Acropolis mound looking W from Pekmez. (Photo: the author).

ACROPOLIS TRENCHES 1 AND 2

Artifact drawings: Figure 418 Photographs: Figure 417 Site notebooks: 3 and 4

Synopsis: Prehistoric pottery scattered throughout Levels 1-20

Acropolis Trenches 1 and 2, excavated in 1966 under the supervision of Stephanie Page, were located at the NW base of the Acropolis (Figure 5, Area C). The purpose of the soundings was to test if the Acropolis was a natural or man-made mound of accumulation. The latter was confirmed. It was also determined that the superimposed strata were of the Hellenistic, Roman and Byzantine periods.

Trench 1 measured 3.00×10.00 m and Trench 2 was designated as a 3.50 m extension of Trench 1. Twenty strata, excavated to a depth of approximately -8.50 to -9.00 m, were identified in the deposits. In stratum 19 the water table was reached — and attempts to pump out the trench for the investigation of earlier periods were in vain. However the excavators were able to determine that

the soil below the water level contained coarse wheelmade wares. As far as the prehistoric material in these two trenches is concerned, only sherds of dark gray burnished handmade pottery were found (Figures 417, 418).⁴⁹ And the earliest deposits actually reached are as late as the Hellenistic period. But the presence of those handmade wares plus a few stone tools, such as a stray handaxe unearthed in the Byzantine levels, were of prehistoric manufacture. Thus, the Byzantine and Roman strata indicated that a much earlier origin for the Acropolis mound might indeed be postulated. It was also concluded that the water table had risen considerably since the Hellenistic period.

No plans or sections are presented for these trenches because the deposits are mixed and their late-date strata are beyond the scope of this report. Some of the hand-made pottery plus a few objects are presented in the catalogue. These we were able to recover during our 1980-1981 seasons from their collection containers — and we washed, numbered, and catalogued them at that time.

49. A preliminary report was published in Kadish 1969.



63. The Acropolis mound viewed from the W (Photo: Sheila J. Ehlinger).



64. The Acropolis mound showing the excavated prehistoric trenches viewed from the W (Photo: Sheila J. Ehlinger).

ACROPOLIS TRENCH 3

Sections: Figures 65-70, 74-75 Plans: Figures 71-73, 76-78

Artifact drawings: Figures 419, 421, 423, 425-428, 431, 434

Artifact photos: Figures 420, 422, 429-430, 432-433

Chipped stone: Figure 257

2 -

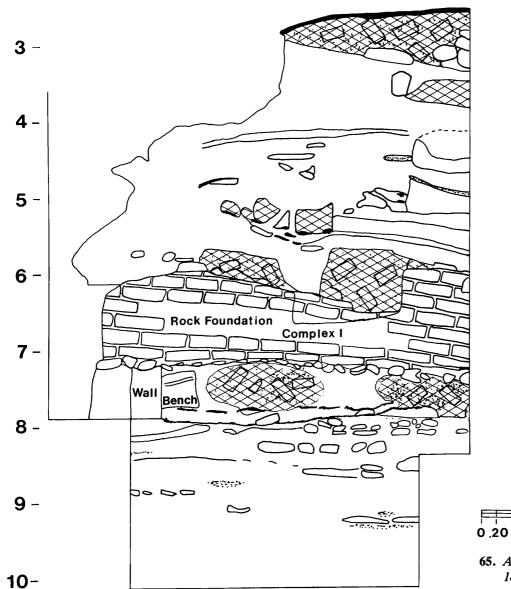
Site notebooks: 15-18, 39 (part), 47

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1 -				

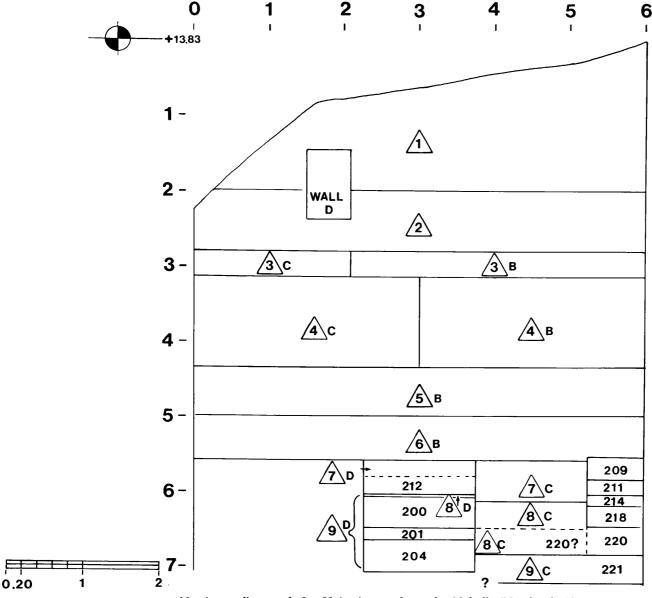
Synopsis

COMPLEXES - LEVELS	UNITS
Complexes XII, XI, X, IX, VIII	279-90, 292-94 (?) and Area A
Complexes VI, V, IV	252, 264, 266, 268, 270, 272 (?), 273-275, 277-278
Complexes III, II, and Levels 5B, 7A-7D, 8, 8C (?), 9	201-54, 256, 260, 265 (?), 267, 269, 276
Complex I and Sub I-Levels I, 6A-B, 8B	260, 262-63





65. Acropolis trench 3; N balk section (Notebook 18, p. 262, 280, 284).



66. Acropolis trench 3; Units imposed on the N balk (Notebook 18, p. 268).

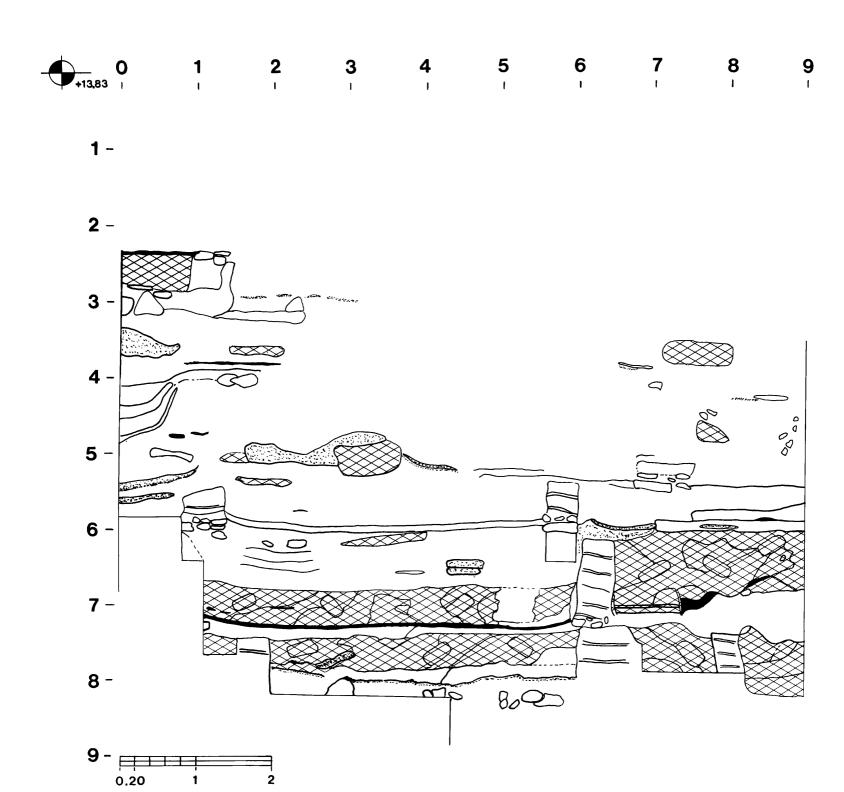
In 1967 a 6.00×9.00 m trench was opened on the Acropolis, designated Trench 3 and excavated by Barbara Kadish. The trench was located approximately 13 m from the base of the W side of the Acropolis mound (Figure 61), above the + 0.00 datum point located on the orchestra floor of the theater. The purpose of the excavation was to verify whether a prehistoric mound was responsible for the original accumulation of earth.

From the surface to -2.50 m, two layers of Byzantine occupation were unearthed, followed by a destruction level that was possibly caused by an earthquake. Below this lay 3.00 m of homogeneous rubble fill. To a depth of -5.50 m from the trench subdatum very little pottery was found and no significant architectural remains. However ash, charcoal, burned loam and mudbrick indicated the possibility of at least seven phases of occupation between the surface and this -5.50 m depth. Below, from -5.50 m to the closing of the trench at -10.00 m, significant architectural and artifact remains appeared — which the excavators termed « complexes »

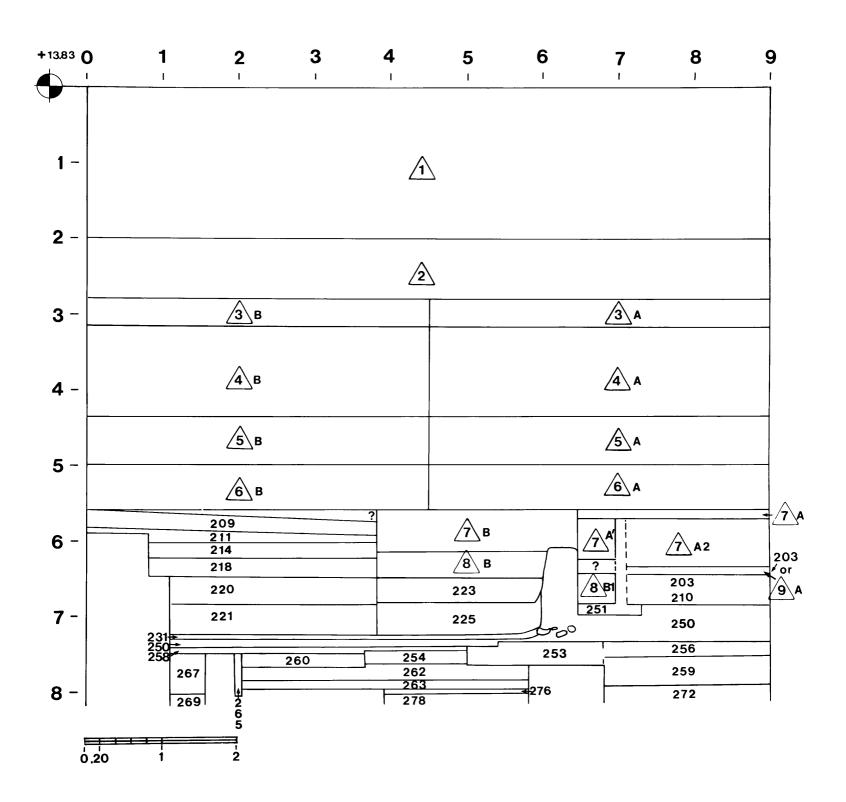
(see p. 37). They range from Complex XII (the earliest) up to Complex I. These architectural elements and their respective units will be discussed chronologically, from the earliest to the latest.

These early deposits of Acropolis Trench 3 are not well defined in either the field notebooks or in preliminary reports. Once again, some of the excavated units had not been delimited by elevations. Using the field notebooks, I worked out what I reckoned were appropriate ones for each unit, and then tentatively assigned these units in Complexes labeled XII-V. Units ascribed to the later Complexes IV-I had already been listed, with their elevations, in the field notebooks; there the excavators' unit assignments have been adhered to.

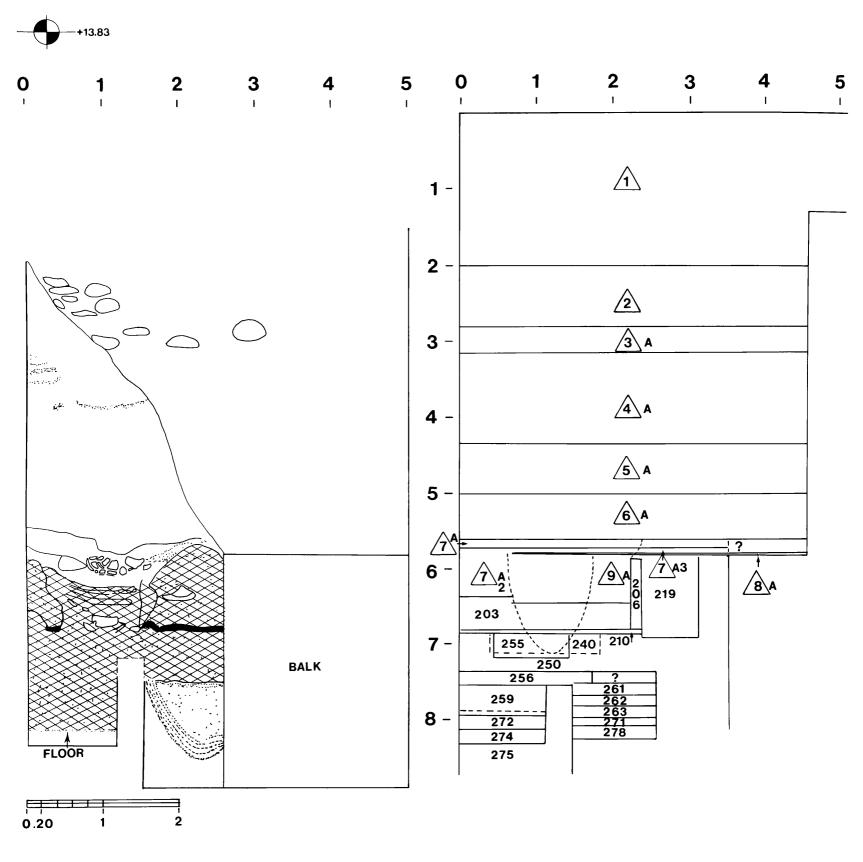
No photographs could be located for this trench's excavation. The data available consisted of descriptions in the preliminary reports, the field notebooks, and the original catalogue of artifacts. For the random sample of the ceramics we processed 55 % of the 100 collection containers we had inventoried from trench 3.



67. Acropolis trench 3; E balk section (Notebook 18, p. 266, 274).

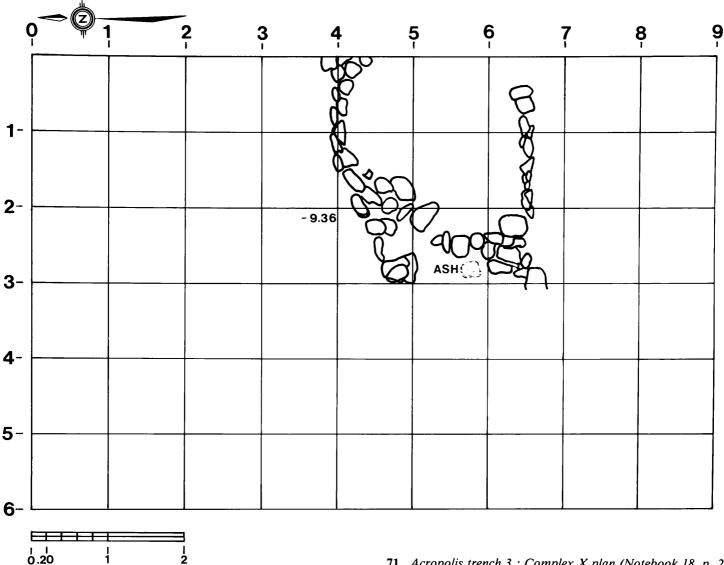


68. Acropolis trench 3; Units imposed on the E balk (Notebook 18, p. 272).



69. Acropolis trench 3; S balk section (Notebook 18, p. 288).

70. Acropolis trench 3; Units imposed on the S balk (Notebook 18, p. 270).



71. Acropolis trench 3; Complex X plan (Notebook 18, p. 222).

Complexes XII-X, ca. -9.27 to -10.00 m

Plan: Figure 71.

Eight units are ascribed to these three complexes, 281-82, 284-85, 287, 291-92 and 294 (?)⁵⁰ Little architecture was recorded (Kadish 1969:62), but an ash layer 0.05 m thick was reported to extend over a great part of the trench and beneath this was a deposit of crumbly red-brown clay. Another concentration of ash was found in unit 291, extending from a -9.81 to -9.87 m depth; this was probably a fire pit.

At a depth of -9.36 m, the top of a curvilinear stone foundation (?) was unearthed. It is not clear in the extant notes from which unit it was excavated. The plan of this structure (Figure 71) shows that it encircles an area near the E trench escarpment. It appears to be part of an apsidal structure, but not enough of it was excavated to draw any conclusions as to its purpose or extent. It would be of great interest if more were known about it. The

excavators tentatively assigned it to Complex X (ibid. 61, ill. 10).

Several artifacts of note were found in unit 292: a bronze needle (cat. no. 292.1, Figure 420.6); a burnished bowl (cat. no. 292.1*, Figure 419.34); fragments of redslipped plates; both black and brown-burnished wares; and a fluted micaceous pedestal base with a slip-wash that was gold-silver-gray (cat. no. 292.2*, Figure 421.26).51

Complexes IX-VIII, ca. -8.70 m to -9.27 m

Four units, 279 and 288-290, are ascribed to these two complexes — but no plans are represented in the notebook. In unit 289, the soil was grayish and sandy in consistency. In unit 290 a floor surface was uncovered, and then at a depth of -9.27 m a stone foundation — but unfortunately the field notes do not tell us more about it. In unit 279 the top of a fragmented pithos was found at an -8.83 m depth.

^{51.} When the pottery from these units was classified, a container marked « 29 ? » was also assigned to this complex.

0.20

2

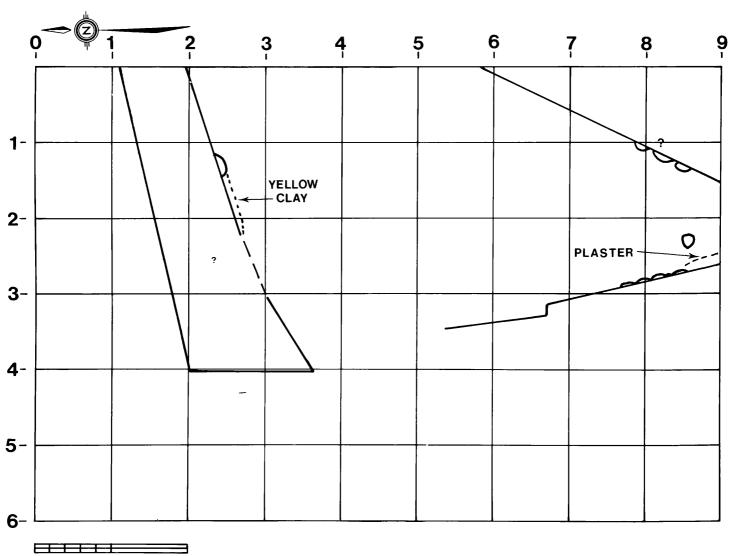
Complex VII, ca. -8.50 to -8.70 m Figure 72.

Four units are also ascribed to this complex: 277, 280, 286, and 293. No field notes could be located for units 280 or 293 — but in the field notes of unit 286, the excavators place 280 as being in the « same complex ». Unit 277 was composed of brown earth. Some stones appeared in the NW corner of the trench, but neither their formation nor their function was defined. In unit 286 the earth was also brown in color with reddish deposits; stones are reported lying in the S part of the unit. 52 Wheelmade bowls and podic bases (Figure 419) of differing ware colors are associated with this Complex VII — both hand and wheel manufacture seem to be in common use. An incised handle (cat. no. 286c. I*, Figure 421.1) is worthy of note.

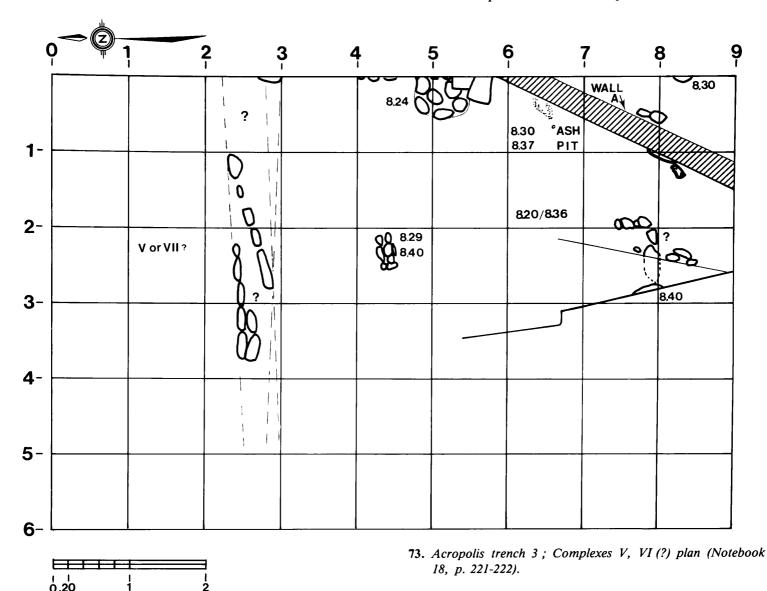
Complexes VI-V, ca. -8.18 to -8.50 m Figures 73-76.

Five units — 270, 273-74, 278, 283 — are ascribed to these complexes. I am presenting VI and V together because from the preliminary report their stratigraphy seems entwined. We were able to ascertain that Complex VI has a possible floor level with two foundation walls, and that Complex V is comprised of walls A and F that define it as a separate entity.⁵³

In Complex VI, at a depth of -8.20 m, a charcoal level was unearthed along with large unburnt mudbricks — bricks which the excavators suggest may have been reused in the walls of Complexes V-IV. At a -8.30 m depth, the floor plus the two foundation walls (Figure 73) were postulated but the excavators were not certain if they belonged in this complex or in V or VII!



72. Acropolis trench 3; Complex VII, possible foundations (Notebook 18, p. 214).



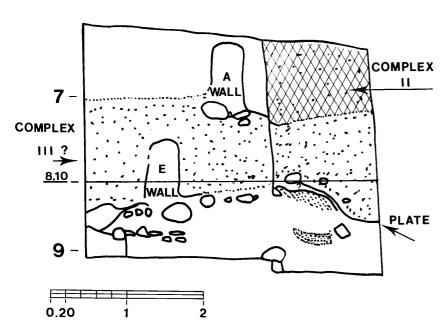
designated as unit 278, and used it to distinguish between

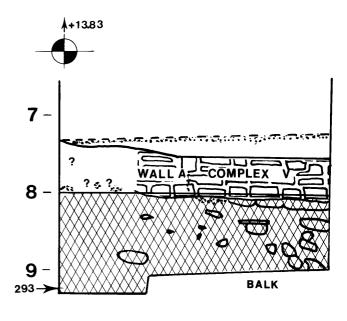
Complex V is delimited by Walls A and F (Kadish 1969:59, ill. 9). Wall A is solidly constructed of large stones « without foundations » (ibid.). Gray clay was used as mortar and on its SE face gray mud plaster was noted. Beneath the wall reddish brown mudbricks were found. (We do not know if these are the same bricks referred to above in Complex VI as being reused in Complexes V-IV.) Wall A (Figure 73) runs NE-SW; Wall F (which is not illustrated in the field notes) abuts Wall A in the E escarpment and runs NW-SE. Between Walls A and F, unit 274 was noted to have a thin charcoal layer with grayish brown clayey soil, along with stones lying next to the E escarpment.

Probably the most outstanding finds related to Complex V are the numerous fragments of wheelmade redslipped plates recovered in units 270 and 273 (cat. no. 273.I, Figures 322, 423.2, and cat. nos. 273.2*.-273.4*, Figures 423.4, 5, 10). Two stacks of these were discovered lying upside down in two different locations.⁵⁴ A sterile gray clay covered these plates; this clay the excavators the occupation of levels, Complexes V and IV.

In the SE corner of unit 283, a « spit support » (cat. no. 283.I, Figures 341, 423.22), was unearthed at a -8.33 m depth.

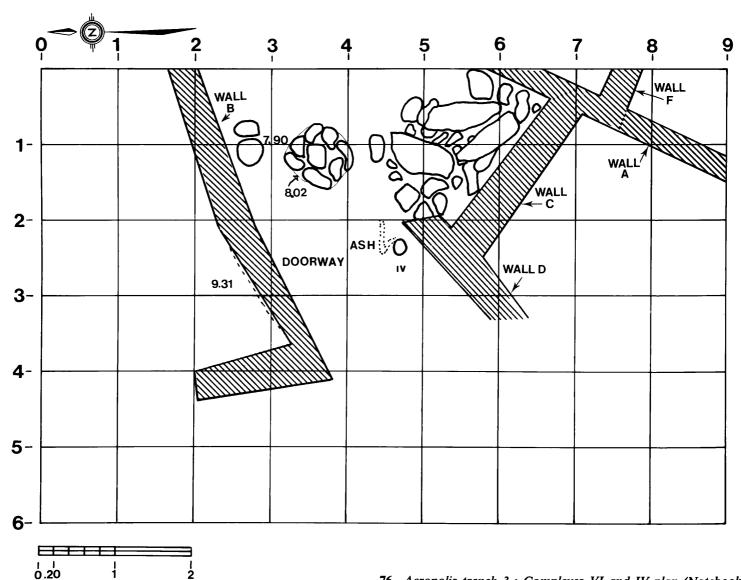
- 52. The excavators report in field notebook no. 18: p. 8 that an incised white-filled ceramic with a black highly burnished slip was associated with this deposit; and at a depth of -8.57 m, cat. no. 286.I was unearthed. Because they could not be located at the site, they are not included in the catalogue, unless they were deposited in the collection container and were registered by us.
- 53. The excavators point out that these walls do not necessarily imply Complex V is earlier than Complex IV. See Kadish 1969:60.
- 54. As many as 20 were found in one stack.
- 55. This unit should probably have a later context.
- 56. The field notes report that this should be considered part of unit 245.
- 57. This unit should probably have an earlier context; it was excavated from an -8.40 to a -8.67 m depth.
- 58. We have assigned unit 276 to this deposit for it was excavated within the depth ascribed to Complex IV.
- 59. These slabs measured an average of 0.075 by 0.32 by 0.05 m.





74. Acropolis trench 3; W extension on the S balk section (Notebook 18, p. 290).

75. Acropolis trench 3; Complex V, NW face; section of Wall A and balk (Notebook 18, p. 294).



76. Acropolis trench 3; Complexes VI and IV plan (Notebook 18, p. 224, 228).

Complex IV, ca. -7.45 to -8.18 m

Plan: Figure 76.

Complex IV contains 12 units: 250,55 255,56 257-58, 264, 266-67, 268⁵⁷-72, and 276. This complex presents many problems in stratigraphy and interpretation. Because of the entanglement of architecture and features, it was subdivided into Complexes IVb and IVa.

Complex IVb is the earlier. It has a floor level plus a « courtyard » paved with large schist slabs 59 (N of Wall C, Figure 76), an « oven area », and fragmentary walls constructed in piecemeal fashion without foundations. Wall C, with extension Walls D, A and F, runs SE-NW. N of this wall complex, Wall B in unit 254 runs NE-SW. To the N of Wall B, in unit 267, is noted a layer of charcoal resting on a 0.20 m layer of gray clay. Presumably this is an interior floor associated with the wall.

Complex IVa, the later occupation level, includes another charcoal layer and burned debris which the excavators suggest belongs to a house and a « courtyard » that is unpaved. In unit 257 is an ash pit. We thought it interesting that in the artifact catalogue for Complex IV a great number of ground stone tools were recorded. These can be seen on Figures 247-248, 422 and 424.

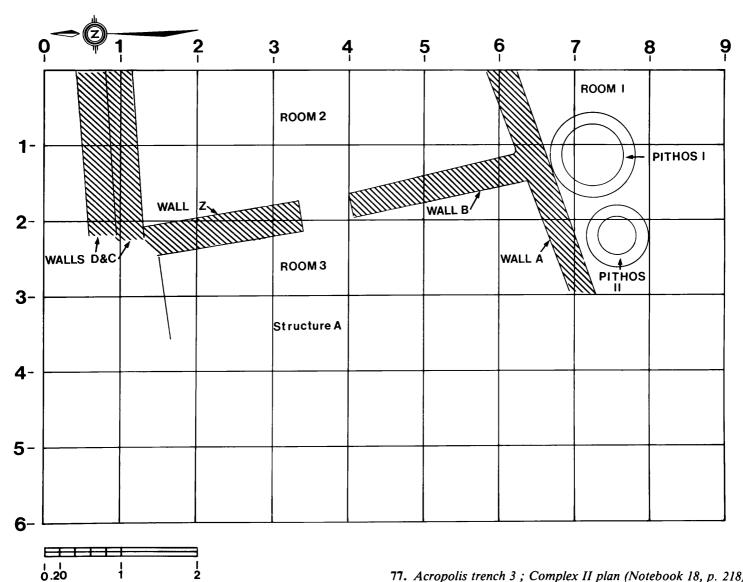
RADIOCARBON SAMPLES

In Complex IV a radiocarbon sample (P-1653) was tested (Radiocarbon, Lawn 1971:371). It consisted of wood charcoal from a depth of -7.83 m below the trench subdatum. It was NaOH-pretreated and its results are reported as B.P. 3620 ± 60 or 1780 ± 60 B.C. It is recalibrated to 2155-1890 B.C.

Complex III, ca.
$$-7.00$$
 to -7.45 m

Plan: Figure 76.

Four units, 252-54, 256, were assigned to this complex which was characterized by reddish brown soil, some charcoal, but no architectural features. (Technically this should not be designated a complex. No plans can be reconstructed from this supposed complex). The only artifact of interest is a face urn (cat. no. 253.1, Figures 310, 426.12, and its detailed facial features can be found in Figure 330).



77. Acropolis trench 3; Complex II plan (Notebook 18, p. 218).

Complex II, ca. -6.07 to -7.00 m

Figure 77.

Complex II (Kadish 1969:56, ill. 7) is significant for both its architecture and the extraordinary number and variety of its finds. It is a single occupation level, destroyed by fire. This complex consists of three rooms — Room 1, Room 2, Room 3 which were all delimited by fragmentary walls A and C. This discussion will begin with a description of the walls, and then of the rooms.

The Wall System. Walls A and C enclose Rooms 2 and 3 on the N and S respectively. Both walls and rooms are fragmentary and some unexcavated portions remained in the balks. Wall C slants E-W for an approximate length of 4.50 m. Roughly parallel, and at a 4.50 m distance, is Wall A. It measures 3.25 m in length. The « partition wall », made up of Walls Z and B, lies perpendicular to Walls C and A (Figure 77). These walls, approximately 0.40 m wide, were constructed on a single course of foundation stones over which lay mudbricks mixed with straw. The bricks, measuring $0.57 \times 0.35 \times 0.90$ m, are laid as stretchers affixed with mud plaster and are staggered along the top of the stone foundations.

In the center of the « partition wall » is a 0.70 m wide doorway which provides access between Rooms 2 and 3. Beyond Wall A is Room 1.

Room 1

It contains 12 excavated units: 7A2, 8B1, 9A, 203, 206, 210, 217, 219, 224, 227, 240 and 251 (Kadish 1969:57, ills. 5, 8). The position of the room was reported to be 0.04-0.05 m above the floors of Rooms 2 and 3, therefore the excavators question the association of this room with the other two. A pit from the later deposits of Complex I was dug into this room, so its stratigraphy must be considered problematic. Also the face of Wall A in Room 1 is coated with a yellowish mud plaster about 0.05 m thick (*ibid.* p. 56), but is not so coated on its other side facing Rooms 2 and 3 (*in-fra*).

Sunk below the « floor » level (*ibid*. illus. 4, 8) is a stone-lined hearth, found at the E escarpment. Buried in this floor to a 0.20 m depth and braced with medium-sized stones are two pithoi. Pithos I stands to a 0.95 m height. The smaller Pithos II rests beside it. Grains from within the pithoi were analyzed by Professor Jack Harlan, and a seed sample from Pithos I was identified by Harlan as bitter vetch (*Vicia Ervillia*). He confirmed that Pithos II contained two-rowed barley (*Arpa*) as well as a six-rowed variety and states:

« I would interpret this to mean that the original was a mixture of 2-rowed and 6-rowed hulled barley. The modern sample... is a 6-rowed type... (Aphrodisias) is clearly in the ecological zone where 6-rowed barleys are adapted today. »⁶⁰

The artifact corpus for this room is rich, particularly in ceramic spindle whorls — three of stone (cat. nos. 203.1, Figure 429.10; 210.2, Figures 429.13, 431.55; and 9.1, Figure 429.2); and eight of ceramic (see Catalogue). Also recovered were: a perforated tripodic jug with cordeye wing lug handles (cat. no. 219.II, Figures 327.1, 426.4); a cup with a grooved ear handle (cat. no. 227.II, Figure 426.5); a carinated bowl (cat. no. 250/251.1*, Figure 425.13); an incised beaked jug (cat. no. 7A.I, Figures 335, 425.35); a cooking pot with cord-eye lug handles (cat. no. 7A.IV, Figures 338, 425.18); a depas cup (cat. no. 8B.II, Figures 325.4, 425.11); a ridged-neck juglet with cutaway spout (cat. no. 8B.I, Figure 426.14); a strainer (cat. no. 206.I, Figure 425.12); as well as other objects that can be found in the Catalogue, Volume II, p. 586 ff.61

RADIOCARBON SAMPLES

Three radiocarbon samples were taken from Room 1 of Complex II. All are reported by B. Lawn (1971:370-71).

Sample P-1650 was noted in the preliminary report as having been collected from Pithos I in Room 1, Complex II deposit, but the trench notes assign its unit to Room 2. The sample, composed of charred seeds, at a -6.80 to -7.10 m depth is dated to B.P. 3720 ± 60 or to 1880 ± 60 B.C., or to a recalibrated date of ca. 2310-1995 B.C.

Sample P-1649 from Pithos II also consisted of charred seeds. The dates given are B.P. 3560 ± 60 or 1720 ± 60 B.C., with a recalibrated date of ca. 2035-1855 B.C.

Sample P-1648 was composed of wood charcoal collected at a -5.76 m depth above the burned debris of Complex II and separated from it by « a small deposit of brown earth ». The excavators suggest that because of this, the charcoal is probably associated with Complex I. This sample, which was pretreated with NaOH, is dated B.P. 3540 ± 60 or to 1700 ± 60 B.C., or to a recalibrated date of ca. 1995-1765 B.C.

Room 2

This room contains 12 units: 220-23, 225-26, 228-34. The walls of this room, Walls A and C plus the partition Walls Z-B (Figure 77), were thinly coated with white plaster *supra*. A conical fire pit, 0.25 m in depth, was found in the SW corner — its interior walls blackened with charcoal and thick with white ash. Above this, white plaster and mudbrick lumps were noted. The excavators speculated that this may have been an enclosed oven that collapsed. Associated with this deposit are: cooking pot fragments; a horizontally grooved and burnished depas cup (cat. no. 222.IX, Figures 325.3, 426.16); a brush

^{60.} A written communication (January 31, 1969) from Jack R. Harlan, Professor of Plant Genetics, University of Illinois.

^{61.} Many of these have already been published, see Kadish 1969: ill. 8, pls 26-27, figs 25, 28, also pl. 25, fig. 18.

handle (cat. no. 228.2, Figures 317.2, 318.1, 430.12); and a white-filled unilaterally incised spindle whorl (cat. no. 223.2, Figures 430.16, 431.21). Between the firepit and the SW corner, in an area of unburned earth (Complex II had been destroyed by fire), a small cup was recovered (cat. no. 220.1, Figure 426.3). Of particular interest is a two-handled, four-spouted jar (cat. no. 222.III, Figures 79, 428.23). « The ghost » of a tabby weave textile 62 was found pressed between the « W wall » and the floor.

Lying against Wall C was a quern or pivot stone (cat. no. 223.4) and a grindstone (cat. no. 231.4, Figure 430.1). Two other depas cups (cat. nos. 225.III and 225.IV, Figures 325.3, 325.4, 426.10, 426.13, respectively) were also found (Mellink 1968, pl. 54, figs. 3-4), along with numerous spindle whorls, and chipped and ground stone implements.

RADIOCARBON SAMPLES

In unit 221 of Room 2 a wood charcoal sample, P-1651, was collected at a -7.15 m depth below the trench subdatum. Its dates are given as B.P. 3860 ± 60 or 2020 ± 70 B.C. and corrected to ca. 2420-2290 B.C.

Another radiocarbon sample, P-1774, of wood charcoal from the hearth pit was tested (Lawn 1976:205). Its results are now given as B.P. 3800 ± 60 , 1960 ± 70 or recalibrated to 2405-2155 B.C.

The sample, P-1775, was NaOH-treated wood charcoal from the bottom of this hearth pit, reported as having similar dates of B.P. 3800 ± 50 or 1970 ± 60 B.C. This date was recalibrated to 2405-2155 B.C.

Room 3

This room contains 12 excavated units: 204, 208, 213, 215, 238, 241, and 243-248. On the E, it is bordered by the partition walls Z-B, between it and Room 2; on its W, by the balk of the W escarpment; on the N, by Wall C (although Wall C's delineation is not clearly understood); and on the S, by Wall A. Unlike Rooms 1 and 2, no plaster was evident on its wall surfaces. Unfortunately, the W side of Room 3 was not excavated because of Byzantine fill that descends into the trench here to a depth of -8.06 m, and disturbs the stratigraphy.

In unit 208, N of the doorway between the partition walls, was uncovered a crude stone-encircled fire pit with a diameter of 0.60 m. And from unit 204 were unearthed several distinctive ceramics including a depas cup (cat. no. 204.IV, Figures 325.5, 426); an incised askos (cat. no. 204.I, Figures 329, 425.34); and three loom weights (cat. nos. 204.1, 204.2 and 204.3). Of particular interest is a three-legged zoomorphic jug (cat. no. 246.III, Figures 328, 426.17).

Complexes Sub-I and I, ca. -5.40 to -6.07 m Figure 78.

Constructed over the burned debris, and in part over the walls of Complex II, is Complex I with its three extant walls.⁶³ Assigned were 14 units: 207, 209, 211-12, 214, 216-19, 222, 226, 233, 235 and 239. Four units are ascribed to an area referred to in the field notes as Complex Sub I. In the ceramic study, the fragments from Complexes I and Sub I were separated for analysis; the artifact catalogues have been combined.

Three fragmentary yellow-gray mudbrick walls, two-to-three courses in height and resting on dry stone foundations, were found extending from the E escarpment into the trench (Figure 78). To the N is Wall D, which runs E-W for an approximate length of 2.35 m. And parallel, 4 m to its S, is fragmentary Wall A, only 0.95 m in length.

A third, the N-S Wall F perpendicular to Walls D and A, extends for a 5.60 m length and delimits the complex on its W side. The bricks for these walls measure ca. $0.90 \times 0.40 \text{ m} \times 0.57 \text{ m}$; small stones and pithoi fragments serve as fill. A yellow-gray floor, 0.10 m thick, is seen to join yellow-gray Walls A and D. This floor is underlaid with gray clayey earth and a thin coating of white plaster — which may be a surface for a lower floor. A charcoal layer covers the area S of Wall A. Pits were discovered intruding from this complex into the burned debris of Complex II.

Some noteworthy artifacts found in Complex I are calcium carbonate stone balls ⁶⁴ (cat. no. 212.1, Figures 431.50, 433.5) and three more balls a-c (cat. no. 233.2, Figures 431.46-48, 433.15-17), a stone, — a possible axe (Kadish 1969: pl. 23, fig. 4) (cat. no. 212.2, Figure 433.13), several loom weights (cat. nos. 219.3-219.9, Figure 431), and spindle whorls (cat. nos. 219.1-219.2, Figures 431, 433.6, 7).

The catalogue of Complex Sub-I has two calcium carbonate figurines, *cat. nos. 8C.1* (Figures 220, 431.39, 433.8) and 8C.2 (Figures 221, 431.40, 433.9); plus two spindle whorls.⁶⁵

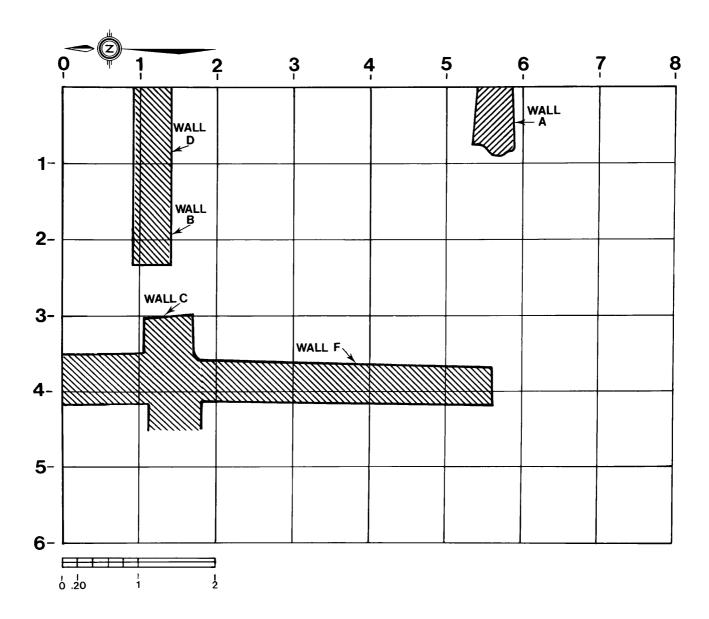
There are also interesting artifacts from mixed contexts or those that could not be assigned to any one of the aforementioned complexes; they can be found on Figure 434.

The later levels of Acropolis Trench 3 (listed in the synopsis) contain a mixture of historic materials beyond the scope of this report.

^{63.} Kadish 1969:54, ills. 3-4, 6. The stratigraphy can be seen in ill. 5.

^{64.} See also Kadish 1969: pl. 23, fig. 5.

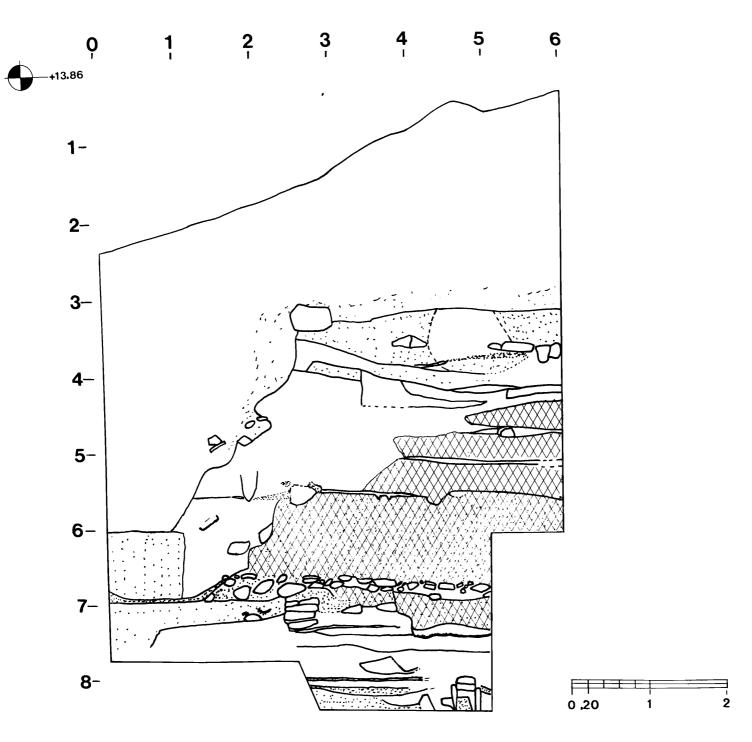
^{65.} Cat. nos. 7C.1 and 7C.2 (Figures 431.15, 29; 433.11, 19). Cat. no. 7C.1 has bilateral linear incised semi-circular designs.



78. Acropolis trench 3; Complex I plan (Notebook 18, p. 210).



79. Acropolis trench 3; Cat. no. 222.III — two-handled, four-spouted jar (Photo: Artemis A. W. Joukowsky).



80. Acropolis trench 4; Partial N balk section (Notebook 7, p. 259).

ACROPOLIS TRENCH 4

Sections: Figures 80-83 Plans: Figures 87-88, 96

Photographs: Figures 84-86, 89-95, 97-98

Artifact drawings: Figures 436, 438-440, 442, 444-448

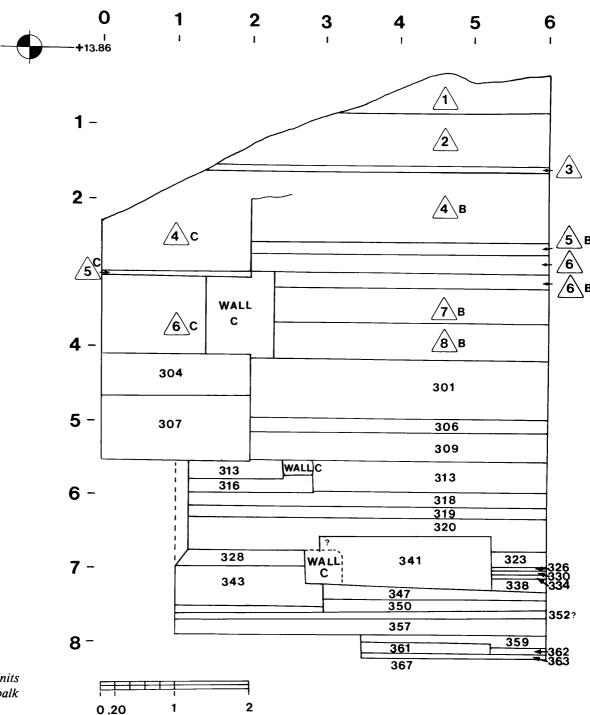
Photographs: Figures 435, 437, 441, 443, 449

Chipped stone: Figures 258-259

Site field notebooks: 5-7, portions of 10-12, 14, 37, 39-40

SYNOPSIS

COMPLEXES	UNITS
Complexes VI, V, IV	351-54
Complexes III-II (?)	323-50
Complexes Sub-I, I, and E	300-22



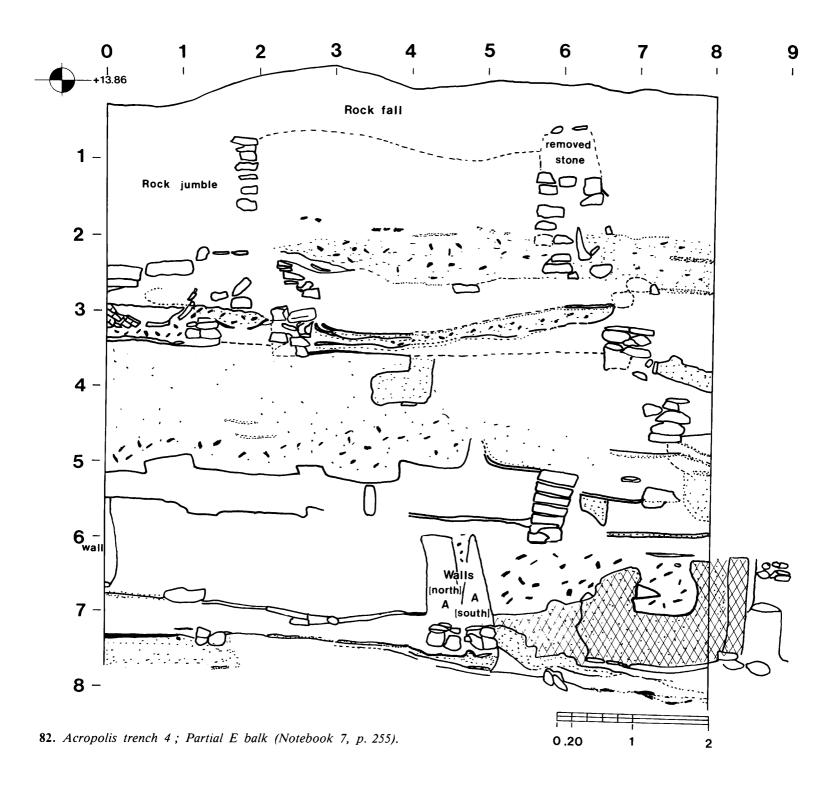
81. Acropolis trench 4; Units imposed on the N balk (Notebook 7, p. 267).

North of Trench 3 lies Acropolis Trench 4, measuring $8.00 \text{ m N-S} \times 6.00 \text{ m E-W}$ (Figures 5, Area A; 61). This trench was excavated in 1968 under the supervision of Barbara Kadish, who published the preliminary results in AJA 75 (1971). The datum control point was +0.00 on the floor of the Roman orchestra theater and a subdatum point, designated as E by the original excavators, was located on the trench surface. Excavated to a depth of approximately -8.20 to -9.43 m below point

E,66 the purpose of this trench was to confirm and elucidate the stratigraphy of Acropolis Trench 3.

Six complexes, VI-I, were unearthed in Trench 4 which the excavators tentatively aligned with those uncovered

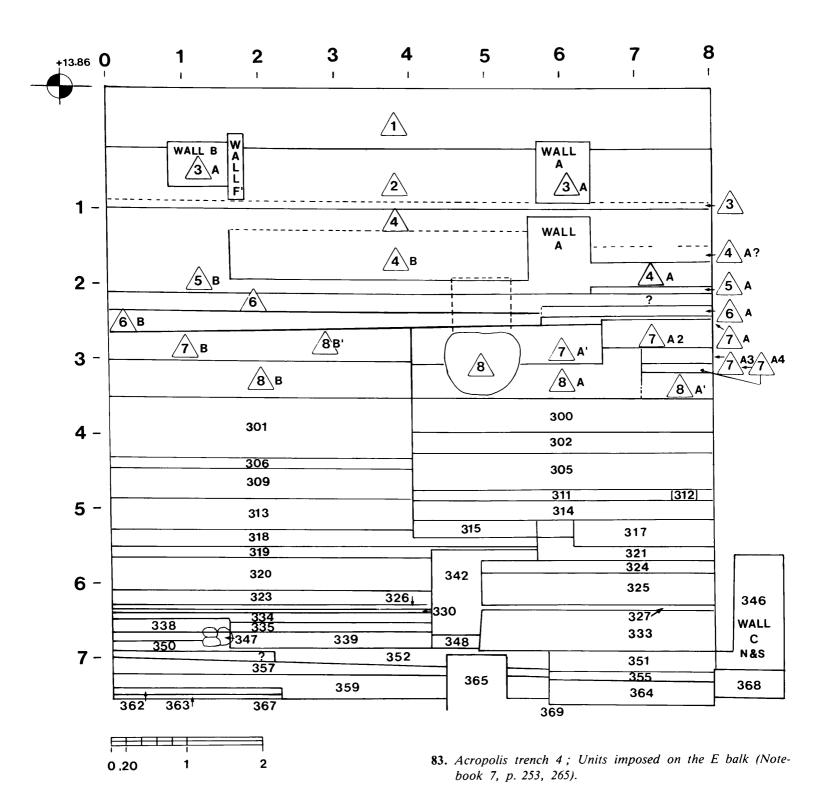
66. There appears to be some discrepancy in these elevations in Kadish 1971:121. The depth is listed as -8.20 m, but in the field notebook no. 7, p. 4, unit 371 is closed at a -9.64 m depth and the pithos in unit 374 is listed as being excavated at a -10.68 m depth.



in Trench 3 (Kadish 1971:129). Complexes VI-III were identified, but the discussion of their stratigraphy is not clear (*ibid.* p. 137). In Complex II, sections of four rooms were uncovered, the remains of which showed signs of having been burned. This is undoubtedly related to the Complex II destruction found in Trench 3. And like its Trench 3 counterpart, this complex produced large quantities of artifactual evidence. The following discussion of the stratigraphy begins with the earliest excavated layers, i.e., those ascribed to Complex VI.

Of the 74 units allocated by the excavators to the Trench 4 deposits, six were found to be either lacking notes — or were allocated to ramp and cleaning operations.

For the pottery analysis I have divided the trench into seven divisions. Of the 137 pottery containers, a random sample of the first 56 was taken — and of those, the first 38 that could be fitted into units with field notes were then selected for classification and computer analysis. Thus the ceramic study covers 45 % of the total collection containers from this trench.



Complex VI, -8.25 (?) m to -9.43 (?) m

We are not sure of the opening or closing depths of this complex for the elevations given in the field note-book were not complete. Four units, 371-374,67 were excavated but their stratigraphy is far from clear, and there are no plans or section drawings that can be reconstructed. Few architectural features were associated with this complex except for large mudbrick fragments that were intermixed with the gray-brown clayey soil, and a

floor that was suggested in the field notes to have been laid at approximately -8.50 to -8.60 m throughout the trench.

In unit 374 a pithos measuring 0.94 m in length was recovered (cat. no. 353.1, Figure 84). It was locked into position by a surround of stones. Except for the pithos, no objects were catalogued.

67. Unit 373 in the NE and W was utilized for wall cleaning.



84. Acropolis trench 4; Complex VI, Pithos and Unit 372.

Complexes V-IV, ca. -7.50 to -8.25 m

Plan: Units 323-50, Figure 87 Photo: Pithos, Figure 84 Plate fragments: Figure 85

The architectural and artifactual remains of these two complexes are difficult to untangle because it appears that features such as walls and floors were constructed on a slope. Thus the discussion of their remains as well as the artifact catalogue has been combined.

In Complex V, at -8.03 m depth, yellow-brown earth was noted which at -8.09 m became a bright yellow color. Just as in Complex V of Trench 3, plate fragments were unearthed between -7.81 and -8.09 m depths and in various excavated units (Figure 85). There may have been a floor associated with these plate sherds, but the evidence is not clear-cut in either trench.

Complex IV, built directly over the plate fragments, includes a « room », Room 2, in the SE of the trench (Figure 87) which may have been bordered on the S by Wall B of Complex IV in the adjacent Trench 3 (Acropolis Trench 3 plan, Figure 76). There are no clear limits to this room, but an entrance to it exists since a pivot stone indicates that a door had existed connecting Room 2 with Room 3 (not shown on plan).

An ash layer was found between -7.35 and -7.80 m, below which the earth was brown and clayey in consistency. No signs of walls are seen to continue into this trench from Trench 3. However, in the SW corner of Trench 4, a fragmentary Wall H appeared at a -7.90 m depth and may have been uncovered in Trench 3. Its position can be found in Figure 88.

In the W, mudbrick Walls F, D, and C, were traced, which may have formed another room. Only the S and E faces of Wall D were defined; the E face of Wall C was traced to the same depth as Wall D, -7.43 m. The excavators concluded that Walls F and C were probably related to the later Complex III wall system in Trench 3 (Figure 76), and accordingly were in use in Complex III (infra) of Trench 4. Between -7.48 and -7.87 m in unit 353, a triangular area enclosed by Walls C and F was uncovered; this was thought to have served for storage purposes.

No floor levels were found associated with either Complexes V or IV, so the ceramics and artifact catalogue will have to provide the connections between these complexes of Acropolis Trench 4 and those of Acropolis Trench 3. A great amount of pottery in the N of Trench 4 at a -7.73 m depth, led the excavators to conclude that this indeed was the same sort of deposit as in Trench 3, Complex IV. And as in the corresponding complexes of Acropolis Trench 3, the artifacts for these complexes are extensive; most of them can be found in Figures 435 and 436.

RADIOCARBON SAMPLE

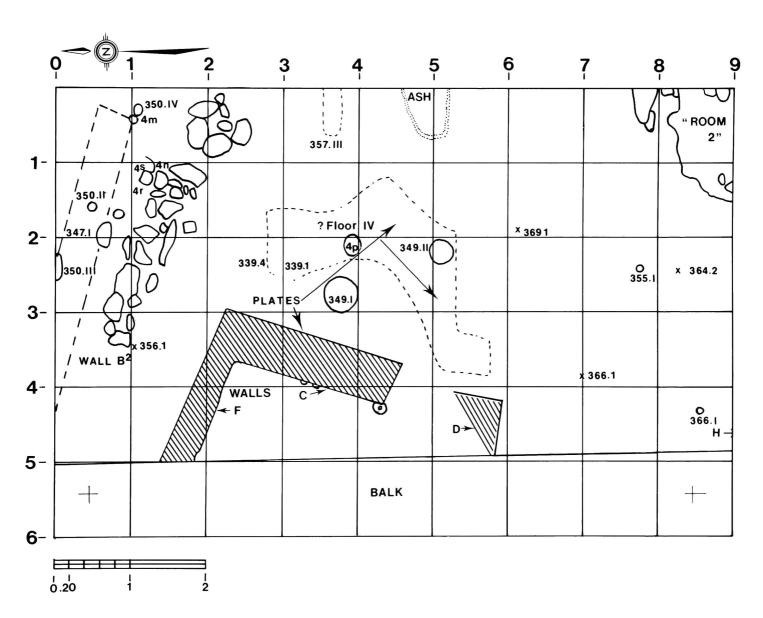
In *Radiocarbon* (Lawn 1971:371), sample P-1654 of wood charcoal is reported as having been collected from the destruction debris of this Complex IV at a -7.39 m depth below the subdatum. It was NaOH-pretreated and the results are given as B.P. 3940 \pm 90 or 2110 \pm 90 B.C., or recalibrated to 2645-2310 B.C.

85. Acropolis trench 4; Complex V, from the NE, showing plate fragments.

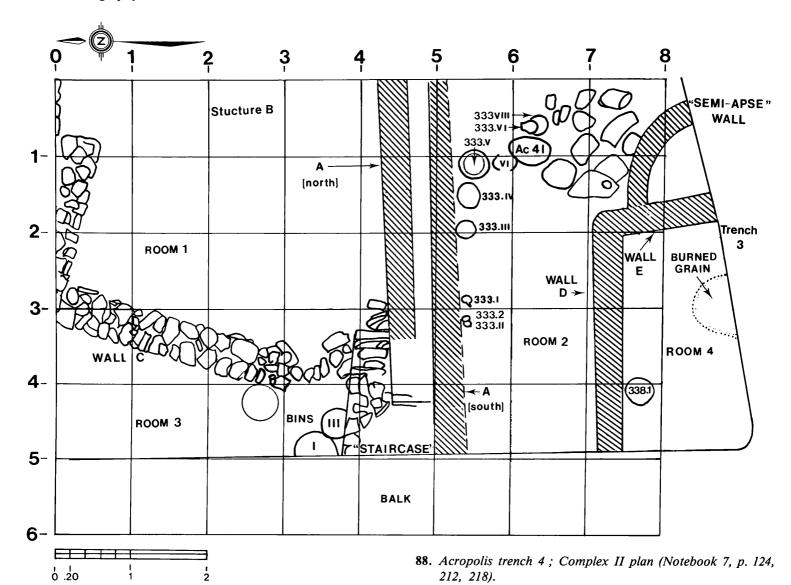




86. Acropolis trench 4; Complexes IV-V, Ground stones b-e, m-o, in situ.



87. Acropolis trench 4; Complexes IV and VI (Notebook 7, p. 237, 239, 241, 250).



Complexes III-II, ca. -6.75 to -7.50 m

Plan: Figure 88.

Nineteen units 68 have been assigned to these two complexes. The stratigraphy of Complex III is not clearly defined, it has, therefore, been combined by us with the Complex II units which were singled out for special study after the excavation had been completed.

Complex III was built directly on top of Complex IV following its destruction. In the field notes the floor level is recorded at a -7.24 m depth. As was mentioned, Walls C and F may have remained in use during the life of Complex III.

A newly built Wall A was a single E-W wall that divided plaster-walled Rooms 1 and 2.69 Room 1, which the excavators reasoned may have been stone-paved, is in the N of the trench and lies N of Wall A (See plan, Figure 88; and section Figure 82). Room 2 lies S of Wall A.

To the W of Room 1 and separated by reused Wall C is Room 3, joined to Room 1 by a doorway.

In the Complex II remains, parts of four rooms were excavated. Room 2 that lay S of Wall A was reconstructed — at the same time that Room 3 was constructed in Complex II of Acropolis Trench 3. In Room 2 were found large roughed-out stone tools. An additional set of walls were added to the E-W wall. At this time Wall A (S) was constructed against Wall A (N), and on the plan the two can be seen to divide the trench. Built to a higher elevation than Wall A (S), Wall A (N) has a foundation of more than one course of stones whereas Wall A (S) has only one. The width of these walls vary from 0.60 to 0.30 m; together they are 1.00 m wide at the W end to 0.80 m at the E end, where they disappear into the balk.

7

^{68.} Units 323-50.

^{69.} This may correspond to the build-up of earth in Acropolis Trench 3.

^{70.} The excavators also refer to this as Structure II.

^{89.} Acropolis trench 4; Complexes III-II, Units 332, 333, (340), and 337, looking E.

^{90.} Acropolis trench 4; Complex II, Wall A, including semiapse and view of S.







91. Acropolis trench 4; Complexes III-II, Unit 333, ceramics III-VIII in situ.

Sometime during this period, a semi-apse grain bin was constructed which may have had access from Room 2 (Figures 88, 90). This quarter-circular structure was bound on the W by the partition Wall E, on the other side of which was the small Room 4. The grain bin was constructed of mudbrick with gray-buff mortar, and was thinly plastered on the interior. It was destroyed by burning. A spindle whorl was found here, and a concentrated deposit of burned grain at a -7.30 m depth. This burned grain extended to a depth of -7.41 m in Room 4... probably also used for grain storage and separated from Room 2 by Wall D. This wall was formed by three-to-four courses of long stones serving as foundations to a mudbrick superstructure that was clearly seen to run along a length of approximately 4.00 m.

Part of the architectural plan for this room complex was later modified — the doorway joining Rooms 1 and 3 was blocked, and Room 3 was converted into yet another grain storage space on the evidence of the circular mudand-chaff-built Bins I-III, backed on the S by Wall A (N) and on the E by Wall C. The excavators postulated that a wooden fence may have protected this area, for they recognized strips of charcoal lying between Wall C and the W escarpment (Kadish 1971: ill. II). The foundation of Wall C by this time consisted of rough boulders and flat stones; it ran from NE to SW for an approximate 4.50 m length. Near the end of this period, in the adjacent Trench 3... the Rooms 1, 2 and 3 of Complex II were added to the S of Rooms 1 and 2 of this trench.

It appears that a sudden burning brought about the complete destruction of Complex II in both trenches, for collapsed mudbrick remains were found covering the entire area.

As the catalogue listing indicates, these two complexes are particularly rich in ceramics and other artifactual materials — which can be found in Figures 437, and 439-440.



92. Acropolis trench 4; Unit 328, three bins and fence, looking W



93. Acropolis trench 4; Complexes III-II, Unit 328 and three bins, looking S.

RADIOCARBON SAMPLE

A wood charcoal sample, P-1652, was taken from -6.94 m. It is reported in *Radiocarbon* (Lawn 1971:371), as from Structure B, at base of Complex II floor ». Its results are B.P. 3990 \pm 60 or 2160 \pm 60 B.C., or corrected to ca. 2650-2520 B.C., (of interest to note is that its reading is earlier than the sample P-1654 of Acropolis 4, Complex IV).

Complex Sub-I, I and E, ca. -5.25 to -6.75

Section: Figure 96 Photos: Figures 97, 98

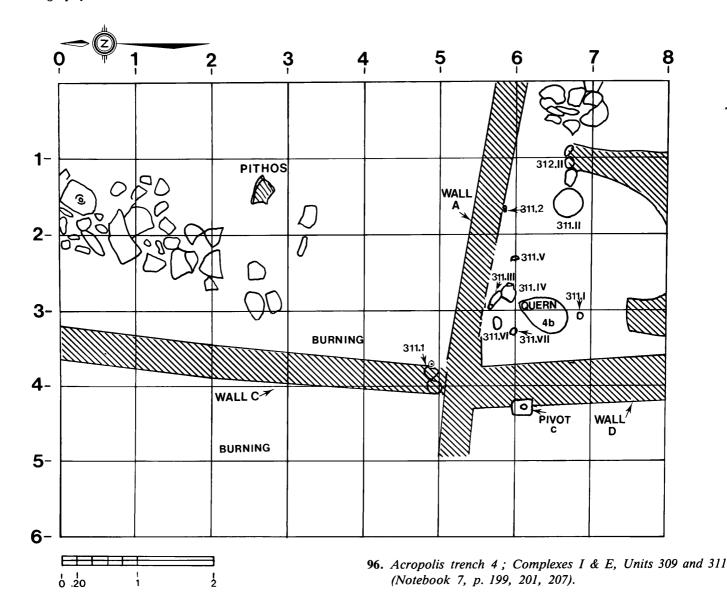
Complex Sub-I was assigned seven units which were excavated between -6.00 m to -6.75 m. Complexes I and E were assigned ten units, excavated between a -5.25 and a -6.00 m depth. Again, all of the features associated with these complexes became reused, thus they are examined together.

94. Acropolis trench 4; Complexes III-II, Units 326 and 328.

95. Acropolis trench 4; Complexes III-II, Units 326 and 328.







The Complex Sub-I inhabitants, and then those of Complex I, utilized the area and what walls survived after the burning of Complex II, just as they did in Trench 3. Wall D (Figure 96) became part of architecture known as « Structure I » (not shown on the plan) which extends from Trench 3 eastward into Complex Ic of Trench 5 (Figure 104) and in a N direction into this Trench 4. Walls C-F of Complex I Acropolis Trench 3 (Figure 78) are also associated with this Complex Sub-I deposit of Trench 4. The artifactual evidence is particularly rich and is presented in Figures 441-442, 444, 446.

Complex I was so designated by the excavators to represent the construction, somewhat later in the use of Complex Sub-I, of Wall A on the NE of Wall D to form an enclosure known as Structure II. From the concentration of artifacts seen on the plan (Figure 96), it can be noted that this area was in active use during this period.

Later yet Complex E was built, when parts of Structure I had fallen out of use. A 0.40 m deposit of debris separated the building levels of I and E in at least part of the trench — but it is conjectural as to what are the elements of Complex E, for it is not clearly defined in either the field notes or in the published preliminary report... only that walls of earlier structures were utilized during its lifetime.

Artifacts from Complex I and E deposits of special interest are two figurines: one of white marble (cat. no. 311.2, Figures 231, 441.15, 446.30) found adjacent to Wall A shown on Figure 96; the other of gray schist (cat. no. 313.5, Figures 441.7, 446.28). Ceramics worthy of note include: a basket-handled jug (cat. no. 311.III, Figures 336, 444.24); a tankard (cat. no. 312.III, Figure 444.11); a jug with a cutaway spout (cat. no. 313.I, Figures 334.3, 444.1); a depas cup (cat. no. 313.VI, Figures



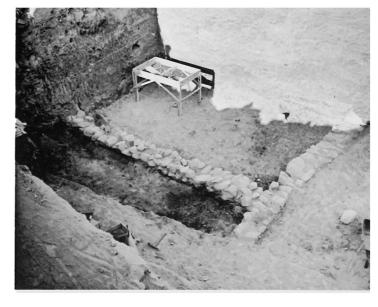
97. Acropolis trench 4; Complexes I & E, Unit 320.

323.2, 444.2); and a perforated and ridged-neck jug with cord-eye handles that resemble horns or wings (cat. no. 313.1V, Figures 327.3, 444.15).

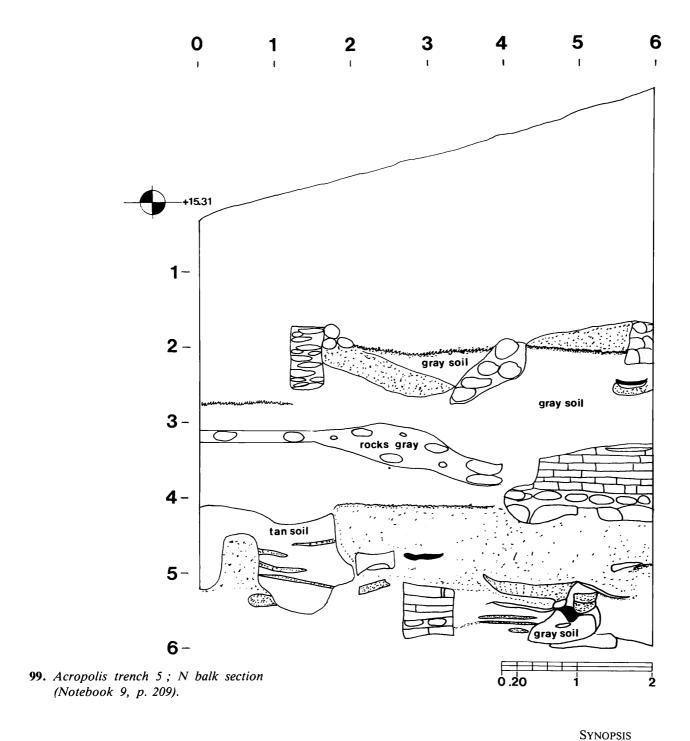
The quern shown on the plan as « 4b » was found in the site storerooms — if it had been marked with its unit number, it could have been catalogued by us.

Post Complexes, ca. -4.50 to -5.25 m

This represents a subdivision I made to delineate artifacts that were excavated along with Byzantine fill, yet may be contemporary with either Complex I or E. They were recovered from seven units that had been separated off from the earlier material in this trench. The ceramics of these units may be thought of as this area's final use in the Bronze Age period — for if there were remains of later occupation, they have been erased by Byzantine building levels. The artifacts were catalogued and are shown on Figures 448-449.



98. Acropolis trench 4; Complexes I & E, Unit 315 walls.



3 I NOPSIS

UNITS

COMPLEXES-LEVELS

Complex I 515, 521-26, 528-29, 531 Complex F 513-18 Complex E 507-09, 511-12, 516-20 Complex D 496-97, 499-501, 504, 506 Complex C 476, 479-80, 482, 485-94 Complex B 464, 470, 472, 477-78, 484 Complex B' 455, 458, 460-63, 465-67 Complex A 456-57, 459 Mixed 452-53, 468-69, 471, 473, 475, 483, 495, 502-3, Levels 6B,

7B.

ACROPOLIS TRENCH 5

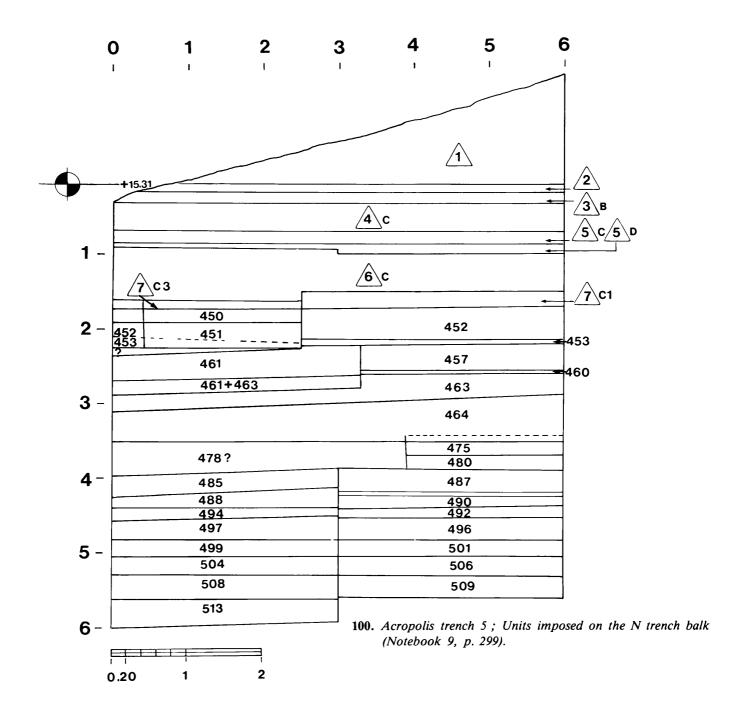
Sections: Figures 99-102

Plans: Figures 103, 105-106, 109-110, 112 Photographs: Figures 104, 107-108, 111

Artifact drawings: Figures 450-451, 454, 457, 459-460 Artifact photographs: Figures 452-453, 455-456, 458

Chipped stone: Figures 260-262

Site field notebooks: 8 (Portions), 9-14, 37, 40



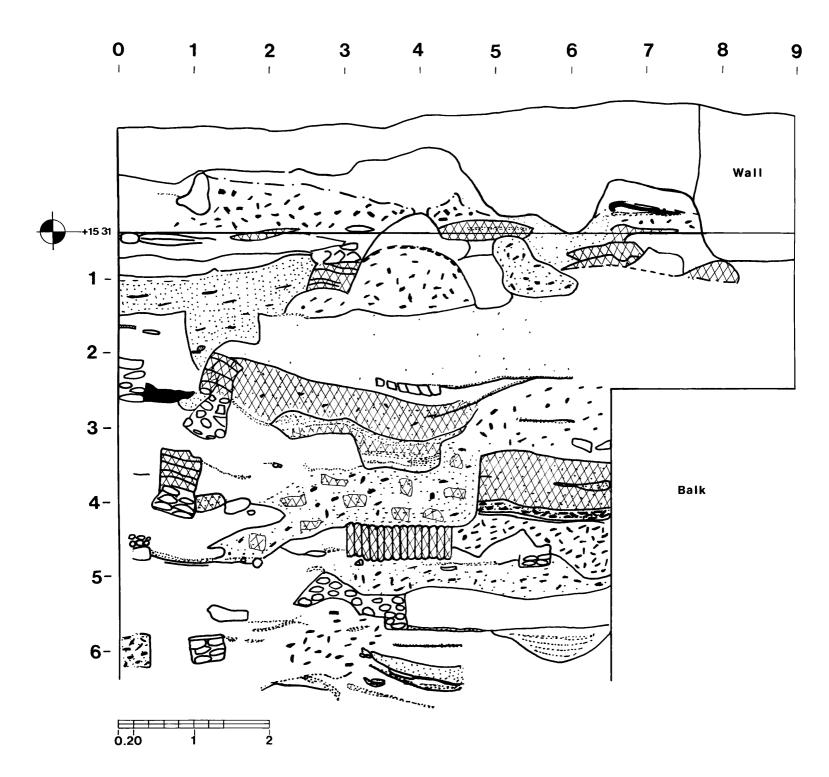
Trench 5 on the Acropolis mound was excavated in 1968 by Barbara Kadish, and preliminary comments were published in AJA 75 (Kadish 1971). It was located up the western slope of the Acropolis directly E of Trench 3. It measured 6.00×9.00 m and was enlarged as the excavation progressed for the removal of debris. This trench was excavated to a depth of -7.00 m from a datum point located at +13.86 above the +00.00 datum point on the theater orchestra floor.⁷¹

71. Kadish 1971: ill. 1 for the position of Acropolis Trench 5. The published section drawing of this trench is combined with that of trench 7's section of the E balk, see ill. 6.

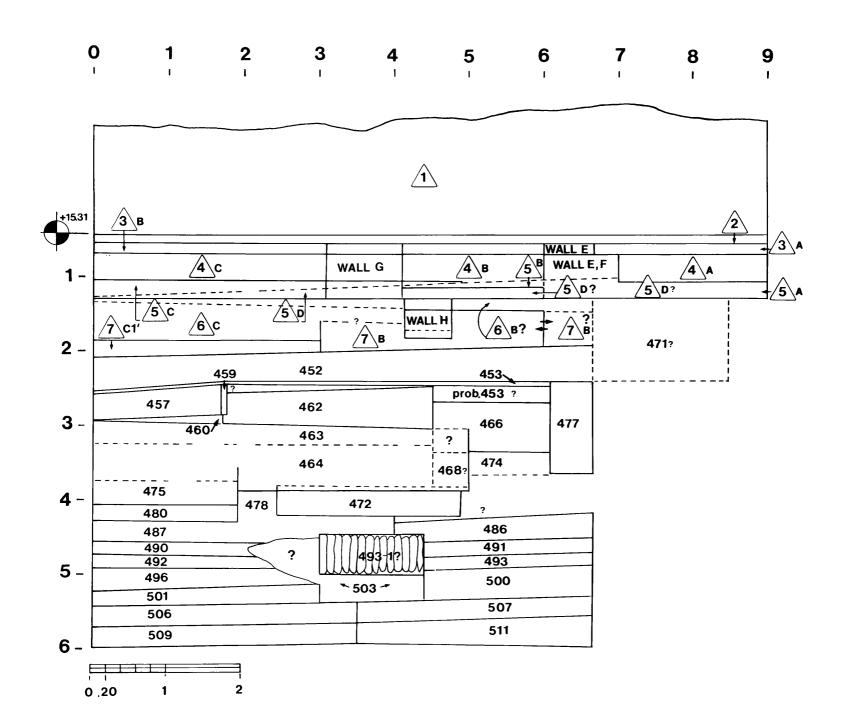
Ten complexes were allocated to this excavation — Complexes A, B, B-F respectively, and Ia-Ic. The independent analysis of this trench along with its catalogue will, as usual, begin with the earliest, Complexes Ic-I, and continue through Complexes F-A.

In the ceramic analysis, we studied 52 collection containers out of the total of 136 that we had inventoried, or 38 % of the total pottery collected from this trench 72 representing over half of the pottery that was applicable to the Trench 5 prehistoric strata.

^{72.} Trench 5 did not have as high a sherd count as, for example, Trench 4; many pithos fragments, however, are found here.



101. Acropolis trench 5; E balk section (Notebook 9, p. 239).



102. Acropolis trench 5; Units imposed on the E balk (Notebook 9, p. 297).

Complex Ic, ca. -6.63 to -6.98 m Figure 103.

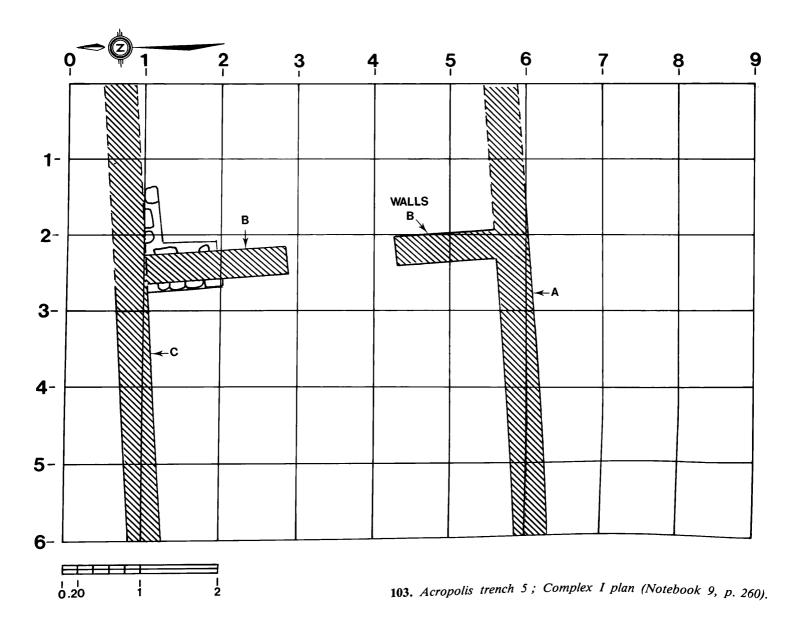
This complex, the earliest level of Complex I, contains two units of excavation which we aligned to the architecture of Complex I in Acropolis Trench 3. It appears from both the published comment (Kadish 1971:135) and the field notebooks that this phase corresponded to the reuse of Trench 3 Complex II after it had suffered from total destruction. Uncovered were clays of differing colors (oranges, yellow and gray) and occasional bricks, such as the horizontally placed ones measuring 0.53×0.34 \times 0.10 m in the SW at a depth of -6.85 to -6.95 m. At the same depth, a straight line of stones ran N-S along the W edge of the trench. A bilaterally incised, whitefilled spindle whorl (cat. no. 529.1, Figures 313.5, 450.15, 452.18), was unearthed at a -6.86 m depth and a sandstone mould (cat. no. 529.2, Figure 450.25). Above this deposit, dark brown earth appeared from -6.62 m to -6.77 m, and within this depth, two more spindle whorls (cat. nos. 528.I, Figures 313.1, 450.14, 452.16, and 528.2, Figures 450.10, 452.15) were recovered.

Complexes Ib-Ia, ca. -5.89 to -6.63 m Figure 103.

The two building phases. Ib-Ia, that followed Complex Ic, are of slightly later building levels that the excavators aligned with a Trench 4 building. Complexes Ib and Ia Walls A, B and C consist of mudbricks that rest on one-to-two courses of stone foundations approximately 0.20 m in depth. The top of the walls was first reached at ca. -5.75 m and the foundation between a -6.10 and -6.61 m depth. These walls can be seen on Figure 104.

The predominant tools are ground stone. Of note are two unilaterally decorated spindle whorls (cat. nos. 515.2, Figure 450.16, and 522.3, Figure 450.13, plus a black-slipped pedestal base (cat. no. 523.1*, Figures 292, 342.11).

The artifacts of the following Complexes F, E, and D have been combined in the Catalogue.





104. Acropolis trench 5; Complex I.

Complex F, ca. -5.82 to -5.89 m

Only two units were excavated in this complex, which appears to be a mixed deposit of both earlier Complex I and later Complex E. It is not clear why the excavators separated it from these two aforementioned complexes. In unit 513 were located a large number of unilaterally and bilaterally incised spindle whorls which provided the bulk of artifacts for this complex. These can be seen on Figures 453 and 454.

Complex E, ca. -5.20 to -5.82 m

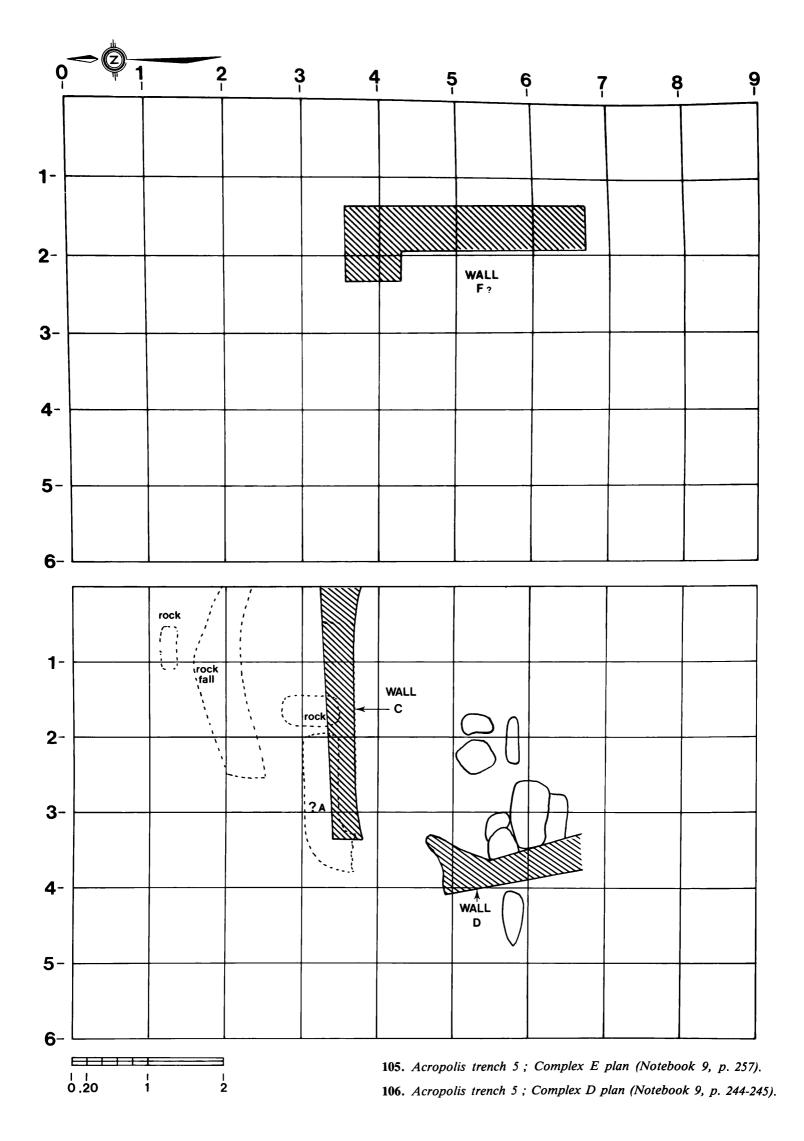
Plan: Figure 105.

Complex E consists of eight units, two of which the excavators have assigned to this complex and one which has also been assigned to Complex I.⁷³ In Complex E

few remains were excavated, but a yellowish clay with flecks of plaster was thought to compose a (?) Wall F, shown on Figure 105. Small areas of charcoal residue were also noted. The excavators (Kadish 1971:135) concluded that Complex E may have been « a final phase of Complex I » because of the similarities in the artifact repertoire of ceramics and small finds catalogued. Of especial interest is a marble figurine (cat. no. 517.1, Figures 451.35, 453.10). Also found were a beaked cutaway spout (cat. no. 513.1*, Figure 454.24) and two crescentic loom weights (cat. nos. 511.2, Figures 451.18; 453.5 and 513.8, Figures 451.26, 453.1).

These and other artifacts can be found on Figures 451 and 453.

^{73.} Unit 520 closed at -6.32 m. Its pottery has not been included in the statistics for this complex.



Complex D, ca. -4.76 m to -5.20 m

Plan: Figure 106

Seven units were excavated in Complex D. Little architectural evidence was recovered save fragmentary Walls A and C, made up of mudbrick residue on stone foundations (Kadish 1971: pl. 29, fig. 27).

Wall C was a single course of foundation stones over its entire length. Wall A consisted of two-to-three courses of loosely set stones, with smaller ones positioned atop larger ones (Figure 107).

In the plan, Figure 106, the dotted-in features include several large stones adjacent to Wall A, two « rocks » and a « rock fall » 74 to the E of Wall C, plus a curious fragmented Structure A (?) composed of small stones ($10 \times 10 \times 25$ cm) loosely set one upon another. It is not clear if these features are actually to be associated with Complex D for they all lie slightly above the features ascribed by the excavators to this complex — that is, from ca. -4.52 to -5.00 m depth — and may therefore be later than the fragmentary Walls A and C.

Storage jars with crescentic lugs and beak-spouted vessels (*ibid.* pl. 28, figs. 26-28), plus gray-slipped and burnished spindle whorls with incised white-filled designs (*cat. nos. 501.2-4*, Figures 313.8, 12; 451.4, 12, 23) are artifacts of interest.

Complex C, ca. -3.77 to -4.76 m⁷⁵

Plan: Figure 109.

Thirteen units are ascribed to Complex C; two of these are also associated with earlier Complex D and one, unit 464, with later Complex B. The only architectural evidence recovered were two small foundation walls, each forming a right angle and lying parallel to the other (Figure 109). These walls, in the NW of the trench, were assumed by the excavators to be the backing for a hearth (Kadish 1971: pl. 28, fig. 22; and our Figure 108). Collapsed over another hearth near the E escarpment was a column of stacked mudbricks, this can be seen in the E balk profile (ibid. p. 130, ill. 6; and our Figure 99) and on the plan, Figure 109. Also reported in the field notebook were « several confused walls and foundations between Complex B and Complex D. » They are indicated on the plan with slashed lines, Walls A-D, which lie to the S of the right-angled walls.

An unusual range of artifacts were associated with this complex — one gold ring (cat. no. 485.1, Figure 459.39), and another, a ring of unknown metal (cat. no. 485.3, Figure 455.24). Several loom weights, 11 spindle whorls with varied motifs, 76 and a variety of ground stone tools were unearthed and can be found on Figures 455, 459.



107. Acropolis trench 5; Complex D, looking S.



108. Acropolis trench 5; Complex C, looking S.

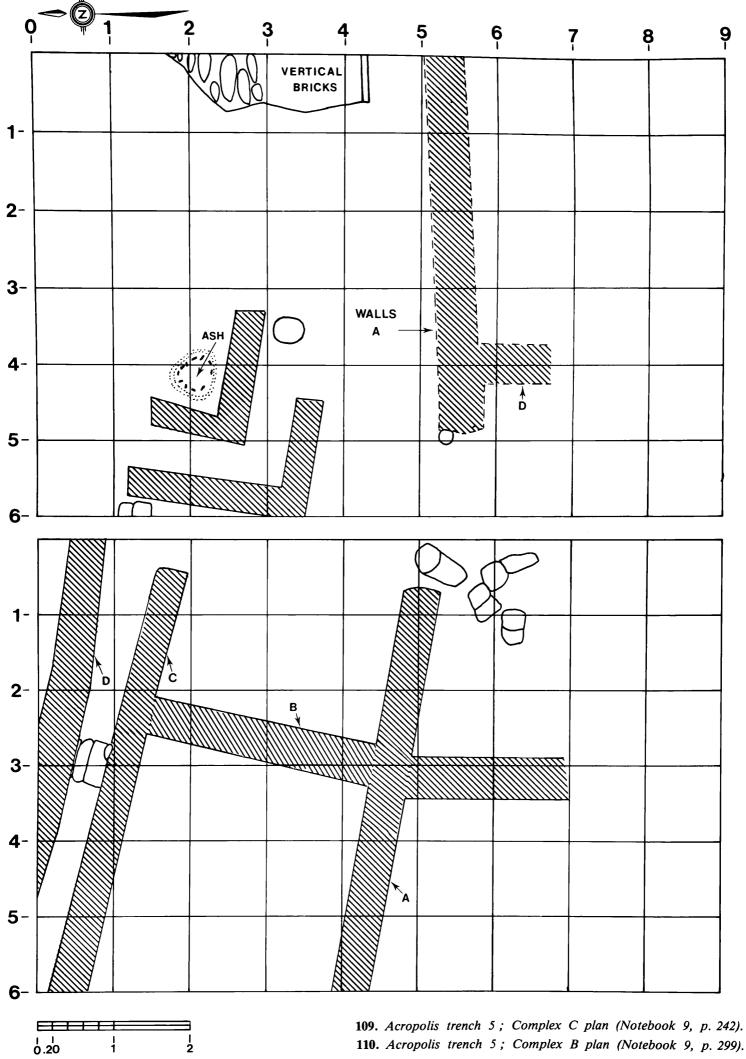
RADIOCARBON SAMPLES

Two radiocarbon determinations are given for this complex. The earliest of these P-1647, a sample of wood charcoal, was collected from unit 494, at a depth of -4.44 m below the trench subdatum « from the lowest extent of Complex C » (Lawn 1971:370). It was NaOH-pretreated and its present results are B.P. 3670 ± 70 or 1830 ± 70 B.C., or corrected to ca. 2185-1850 B.C.

In unit 487, a sample, P-1646, of wood charcoal from the upper part of Complex C « or possible temporary occupation on top of debris of C », (*ibid.* p. 370) was collected. Its results are B.P. 3140 ± 70 or 1570 ± 70 B.C., recalibrated to 1875-1670 B.C.

If we are to accept the comparative dates of Complex C, it appears that it may have a rather long life span of approximately 280-310 years.

- 74. Since these were « rocks » altered/used by man, they would be more properly qualified as « stones » here.
- 75. In Kadish (1971:133), a Level C' is designated. It is not clear to us from the field notebooks what volume of earth is to be allocated to this deposit; it does not appear in the illustrated stratigraphy.
- 76. Kadish 1971:124, ill. 4; three are illustrated here.



1

110. Acropolis trench 5; Complex B plan (Notebook 9, p. 299).



111. Acropolis trench 5; Complex B foundations, looking S.

Complexes B-B', ca. -3.20 to -3.77 m

Plan: Figures 110, 112

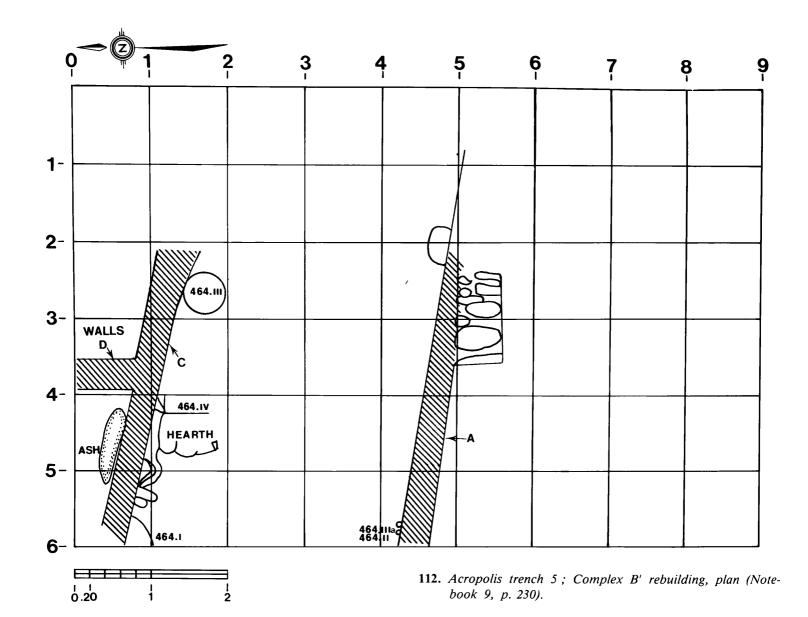
Complex B is composed of six units (unit 464 was also assigned to Complex C). The excavators unearthed two parallel E-W walls — A and C — with a N-S crosswall, Wall B (Kadish 1971: pl. 27, fig. 19), forming an « H ». These walls were all constructed of three stone courses with a double-course of mudbrick superstructure (Figure 111). Wall A, the S wall, had apparently two building phases — B and B'. The earlier is shown in Figure 110 and the later in Figures 110, 112. Its preserved height was uncovered at approximately -3.20 m, its base at ca. -3.46 m. Wall C at the N end of the trench was discovered at -3.04 m and its E end foundation at a -3.51 m depth. Two floors were associated with these walls - which were separated from one another by brown earth and fallen mudbrick debris, probably from wall collapse. A possible wall, Wall D, parallel and N of Wall C, was located at the same depth (ca. -3.51 m) as the E end of that wall.

In the rebuilding of Complex B, a hearth was constructed against Wall C (Figure 112), which ranged between -3.22 m and -3.47 m in depth. This reconstruction was designated Complex B' by the excavators. Two pithoi decorated with diagonal-incised slashes were unearthed in the floor of this complex. One vessel, found resting against the S face of Wall C, contained burned grain particles.⁷⁷

RADIOCARBON SAMPLE

Sample P-1645 of unit 464 (this is the same unit also attributed to Complex C) is reported in *Radiocarbon* (Lawn 1971 : 370) to be « wood charcoal from floor of Complex B ». It was NaOH-pretreated and its results are B.P. 3340 \pm 60 or 1490 \pm 60 B.C., or corrected to ca. 1750-1575 B.C. If the radiocarbon determinations are an indication of Complex B's life, it would appear that there is an approximate 95 to 125-year span between the uppermost debris of Complex C and the floor of Complex B.

77. It is not known if these seeds were analyzed.



Complex A, ca. -2.30 to -2.48 m

The latest complex in Acropolis Trench 5 is Complex A. This was a limited deposit to determine if there were any significant changes in the ceramics between Complex B' and later levels. Accumulations of earth 78 in this trench will be described with the stratigraphy of Trench 7 because the excavators combined the two trenches in their analysis. 79 No coherent plans for this complex could be found in the notebook.

Two E-W walls were unearthed; one of these has a semicircular extension. Within this extension was reco-

vered a fragmented incised pithos (cat. no. 461.2*, Figure 457.29) and a complete juglet with cord-eye lug handles (cat. no. 456.1, Figure 457.10). Charcoal debris lay above and below this pottery. Burning was evident, for charcoal was associated with the foundation stones of both walls, reported as:

« standing mudbrick walls with deep stone foundations; a circular wall [with a] possible associated wall in the east profile of the trench [and] a layer of flat rocks at the foundation level [floor?] ».80

^{78.} Kadish 1971: see section, ill. 6 (E profile).

^{79.} Later accumulations of earth in Trench 5 are labeled A-1 and A-2.

ACROPOLIS TRENCH 6

Sections: Figures 113, 114

Plan: Figure 115; « Lydian » levels: Figures 117, 119

Artifacts:

Level 4: Figures 461-462

Level 3: The « Carian » jar: Figures 116, 348-350
Level IIID: Figures 465-468; Photos 118, 120-121

Site field notebooks: 19, 37 (part)

Synopsis: Level 4W; Level 4E sector mixed

Level 3; The Carian Jar Level IIID; Mixed Lydian

Acropolis Trench 6 contained two separate excavations: those that were undertaken in 1969, and then an extension of the trench excavated in 1973 and 1974. Since there are different terminologies, excavation techniques, and artifact records for these two trenches, I have chosen to present first the 1969 excavation record, and then follow up with the 1973-74 results.

In 1969 Trench 6 of the Acropolis mound was excavated by Anna S. Benjamin and Robert Bragner. It was located to the SE of Acropolis Trench 2 and measured 6.00 m N-S by 10.00 m E-W (Figure 61). This trench was subsequently stepped on the W, ultimately measuring 6.00 m N-S by 8.00 m E-W. The subdatum point was +13.20 above the site datum +00.00 of the orchestra of the Roman theater. Levels 1 and 2 contained historic materials; Level 3 was an admixture of prehistoric and late Iron Age remains; and Level 4, the earliest level, contained prehistoric deposits. This discussion will begin with Levels 4 and 3 and end with later Lydian deposits associated with Level IIID.

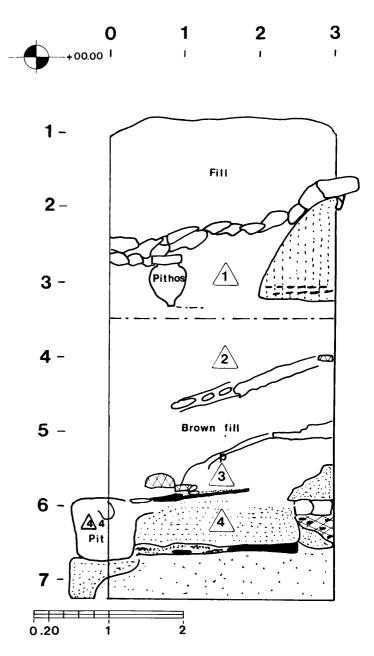
Jar Burials

Level 4, ca. -6.11 to -7.26 m

Plan: Figure 115.

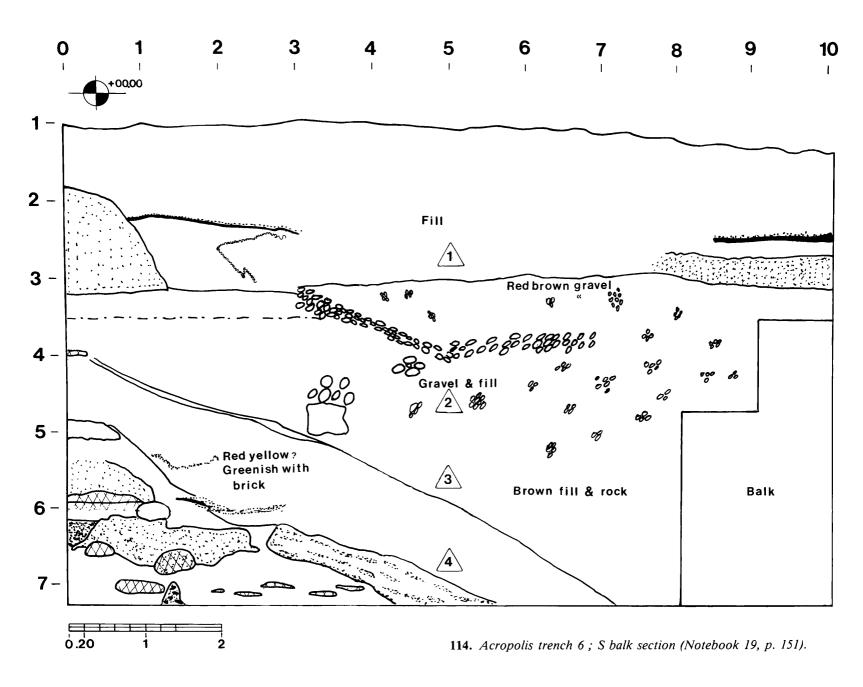
Sections: Figures 113, 114.

The remains of this level, the earliest in Acropolis Trench 6, are characterized by a significant concentration of scattered bones and jar burials. The interments of perhaps as many as nine or more individuals were confined to a relatively small excavation area measuring 6.00×8.00 m (Figure 115). In the center of the trench, at the -7.26 m closing, streaks of ash and unburned bricks appeared. To the W is considerable mudbrick debris; and further W, the earth is composed of a brown fill plus rock. These features are also apparent in the sections of the S and E balks (Figures 113, 114).



113. Acropolis trench 6; Partial E balk section (Notebook 19, p. 153).

In the E sector of the trench, between approximate depths of -6.51 m and -6.75 m, a deposit was uncovered containing gray-brown ash, within which was a large collection of disarticulated human bones, including a skull with teeth. More bones and ash continued throughout the level to the latest deposits, or to -6.11 m. These bones were so disturbed that no distinctions could be made on the basis of burial type, sex or age.



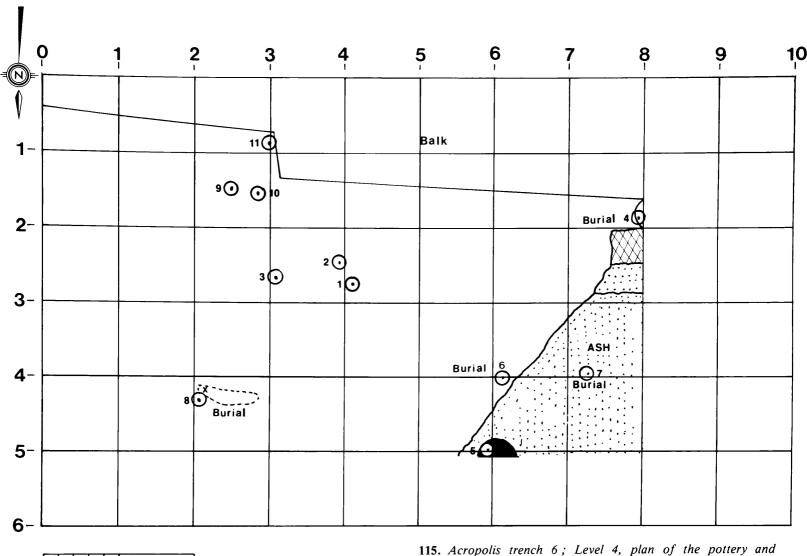
The earliest ceramic, unearthed at the -7.26 m depth, was cat. no. 4.11, and reported in the trench notebook as being « black on the exterior and red on the interior ». Spindle whorls were also recovered from this area including (cat. no. 4A.23, Figures 463.3, 468.22).

Jar burial, cat. no. 4.6, was excavated between -7.02 m and -7.24 m: it contained a tightly flexed infant body lying on its right side with the head facing E.⁸¹ A tripod burial jar (cat. no. 4.7, Figures 347, 462.1) was found underneath the gray-brown ash layer and contained an infant skull and disarticulated bones. The jar was manufactured from a straw-impressed ware fired to a mottled reddish brown color and burnished on the exterior.

81. It is not clear if this means the top of the skull or the face.

At -6.58 m, another jar, *cat. no. 4.5*, was unearthed, its bottom resting at a -6.91 m depth. The interior was noted to contain only large amounts of charcoal.

A deep crater with a grooved neck and horizontal handles, decorated with a gold-gray-brown mottled slipwash (cat. no. 4.3, Figures 346, 462.9), was found at a depth of -6.27 m. Associated with it in the trench center were two vessels (cat. nos. 4.9 and 4.10), but it is not clear from the trench notes whether or not these were burial containers. Possibly serving as a funerary offering was a trefoil jug of gray ware bearing a mottled and washed-out self-same gray slip (cat. no. 4.10, Figure 462.17). In the NE, at a depth between -6.48 m and -6.92 m, cat. no. 4.4 was uncovered containing a skull and teeth intermixed with burned charcoal. All of these vessels can be located on the plan, Figure 115.



burials (Notebook 19, p. 147, 149).

Trench notebook no. 19 indicates that a number of vessels had been given catalogue numbers in the field, but were not catalogued back in the field laboratory — an information loss as to which vessels actually belong to cat. nos. 4.8, 4.9, 4.11 and also 4.1 and 4.2 (of Level 3), infra. Unmarked vessels that we found in the storerooms have been allocated new numbers and are presented here in the Catalogue.

2

0.20

A large number of bones were recovered throughout the trench, but they were particularly concentrated at a depth of -6.51 m. All the evidence suggests that the lowest part of Acropolis Trench 6 served as a burial ground: it contained a minimum of five jar burials and a countless number of scattered bones. This incompletely excavated area probably represents more than one period of time. Unfortunately, it is not clear if the charcoal deposits point to the practice of cremation — but it is highly possible that some of the burials were cremated

since it was a practice known at other SW sites. But as no analysis has been made of the bones, they could have been affected by localized fires.

« Carian » Jar

Level 3, ca. -5.27 to -6.11 m

Right above the burial Level 4 lays Level 3. In the trench center, cat. nos. 4.1 and 4.2 were excavated at respective depths of -5.92 and -5.98 m.⁸² Because these two vessels were not defined in the field notes, we cannot be sure whether they too were burial containers but assume that they were.

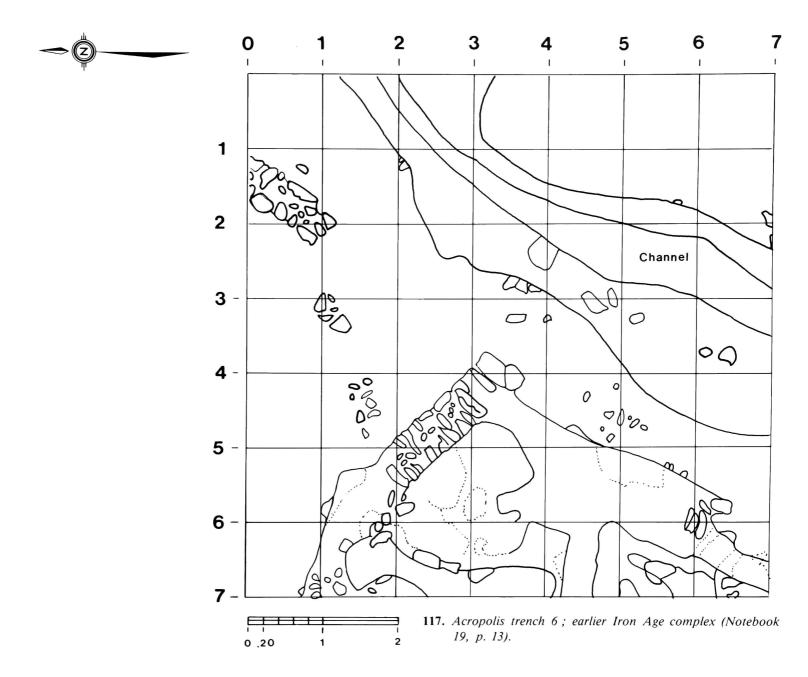
82. These ceramics are not specifically defined in the field notes.



116. Carian Jar. Side view (Photo: Ali Dogenci).

At 1.98 m from the S escarpment and 1.84 m from the E escarpment, a large fragment of painted ware — the « Carian » jar — was unearthed. It is cat. no. 6.3.I (site cat. no. 68.358), and is shown on Figures 116, 348-350, 461. This vessel appeared to the excavators to have been crushed under the weight of fallen gray, yellow and red mudbrick debris intermixed with charcoal. Immediately surrounding the jar, pithos fragments, probably from the reuse of the area, were encountered. Lying amidst all this were a number of handmade black-slipped and burnished sherds of indeterminate origins. For the removal of this « Carian » vessel, the excavators carefully sectioned off a 3.00×3.00 m area.

The interior of the « Carian » jar contained only the same kind of mixed mudbrick and charcoal fill that had crushed it. The excavators searched the area for signs of a floor or pit, but no such features came to light. The assumption that this jar is a burial container must remain tentative, although the evidence does point to that possibility; its location above Level 4 strongly suggests that this area continued to serve as a cemetery. Anna S. Benjamin discusses this and other aspects of the vessel in Part 4, p. 409.

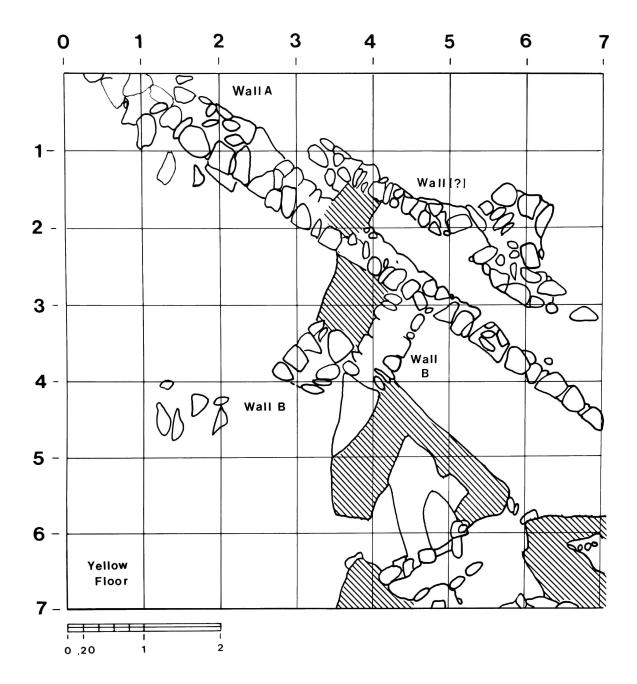


Levels 3 and 4: observations

The significant amount of bones and burial containers in Level 4 show this area served as a cemetery. With the insertion of later burials... the containers, offerings, and bones of earlier ones must have been indiscriminately disturbed, often broken and pushed aside for each new interment. Grave goods such as spindle whorls and ceramics also suffered from this postdispositional disturbance. If this area, located to the NE of the Acropolis habitation, indeed served as a burial ground, it would suggest that interments had a distinct geographical position in relation to the rest of the community.

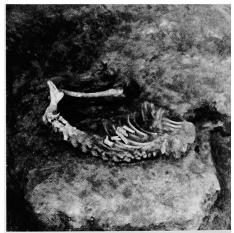


118. Acropolis trench 6; Level IIID (1974) extension.





120. Acropolis trench 6; Level IIID (1974).



121. Acropolis trench 6; Level IIID (1974), dog's skeleton.

119. Acropolis trench 6; plan of later Iron Age complex (Notebook 19, p. 11).

From the range of shapes and varied decoration of the burial containers, I feel certain they accumulated gradually over a long period. The presence of the « Carian » jar seems to serve as a *terminus post quem* of this area for mortuary purposes. Unfortunately, there are few indicators of the orientation and placement of jars, let alone the arrangement and treatment of the corpse. Having only a small sample of information from an incompletely excavated area, we cannot establish the sequential deposition of these deposits.

Future research in this area should be directed to topographic and locational analysis. The information

reflected in such a study would give us a more secure understanding of the meaning of these burials in terms of areal extent and chronology. Moreover, studies should be pursued to investigate skeletal remains and differential treatment, in order to arrive at a clearer understanding of the social and cultural constituents of the periods represented. This excavation has provided an index of the questions to be asked... and if systematic large scale excavation is undertaken in the future the results could be promising. Only then will it be possible to give a more accurate picture of this area in relation to the rest of the Acropolis deposits.

TRENCH 6 EXTENSION: 1973-74

Level IIID

Iron Age and « Lydian » deposits

Plan: Figures 117, 119. Photos: Figures 118, 120-121

Artifacts: Figures 465-468. Photos: Figures 352-353, 357, 360

Site field notebook: 37

Synopsis: Level IIID Mixed Lydian pottery

In 1973-74 an Acropolis Trench 6 extension (also known as North Acropolis 73-1) was excavated under the direction of Orhan Gürman, and was found to contain « Lydian » ceramics throughout its Iron Age Level IIID. A special discussion of these ceramics is presented by William E. Mierse in Part 4, p. 413. The datum point was located at the NE trench corner just above a +12.00 m subdatum point on the contour of the mound. Four levels were excavated including deposits IIIA, Middle Byzantine/ Seljuk; IIIB, Early/Middle Byzantine; IIIC, Late Hellenistic/Early Roman; and IIID — the earliest level, dated by the excavators to the seventh-sixth centuries B.C. Of these, only Level IIID is relevant to this report. The deposits, like so many at Aphrodisias, were disturbed by Byzantine walls — which cut into the earlier material to a -1.85 m depth. A report of these excavations was published by R. Marchese (1976:393-394; 408-410).

This extension of Trench 6 was divided by the excavator into quadrants a, b, c, and d (SE, NE, NW and SW, respectively). In 1973 each of these quadrants was excavated down through the levels to varying depths: a to -5.50 m, b to -4.30 m, c to -3.65 m and d to -4.30 m below the trench subdatum. In 1974, as the excavation continued, quadrant a was excavated to -6.20 m, b to -5.70 m, c to -3.95 m, and d to -4.85 m. Unfortunately, the stratigraphy is not clearly defined... and the levels appear to be confused. Nor can stratigraphic distinctions be based on the ceramics — the artifact collection containers provided neither clues for specific elevations nor suggestions for the sequential collection of the materials. In addition, nothing from this trench was catalogued. (We have allocated serial catalogue numbers to the ceramics that we found in the containers.) Thus the artifacts shown on Figures 465-468 and 352, 357, 360, must be considered unstratified.

Level IIID was divided by the excavator into « subphases ». Found in our assessment of the field notebooks, they are briefly described below: from the earliest (subphase 1) to the latest deposits (subphase 5). The reader should note that here the stratigraphic order is reversed: subphase 1 being the earliest, not the latest.

In subphase 1, the remains of a stone wall were

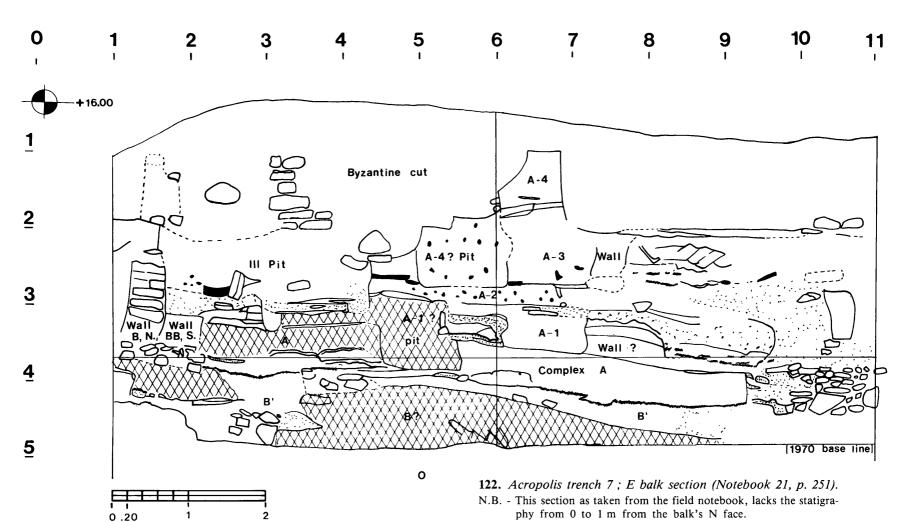
unearthed at a depth of -6.20 m. The debris around it consisted of pottery fragments of what I have called « Lydian » wares — based on the comparison of like ceramics and decorative motifs from Sardis. These were found mixed in with Bronze Age fragments. In quadrants a-b on the E side of the trench, a 0.50 m high stone structure was uncovered at -5.70 m, its closing depth at -6.20 m. The excavators postulated that this feature may have served as a water channel. The drawing shows it proceeding crookedly and at varying widths from the NE to S on Figure 117, and in the photograph on Figure 120.

In subphase 2, just above subphase 1, a dog's skeleton was discovered (Figure 121). The excavators suggest that it was cremated — as fascinating as this statement sounds, no evidence is offered to substantiate it. But of even greater amazement is that « Lydian » wares were reported to have been found mixed with the animal's bones.

Subphases 3 and 4 are arbitrary levels assigned by the excavators. Quadrant a, at -5.50 m, comprised subphase 3; quadrants b and d, both at -4.30 m, comprised subphase 4; and c was a 0.35 m deposit between them. « Lydian » fragments were found in all quadrants, and in b-d and c, pithos fragments also were recovered. It will be noted that the quadrant depths are the 1973 limits stated earlier.

Subphase 5, the latest of these early Level IIID strata, extends from a depth of -5.00 m below the datum point up to -3.65 m — where Level IIID was first encountered. Here, a fairly large complex of fragmented mudbrick walls rest on well-packed stone foundations, and these on a hard yellow clay floor. Wall A, running NE to SW, had an intersecting Wall B — with an offset Wall B1 that measured only 2.40 m in length but 1.10 m in width. Extensive collapsed mubrick deposits were also recorded. The plan can be found on Figure 119, and its photograph on Figure 118. From the recovered ceramics, the excavators surmised that this wall complex dates to the Archaic period. In quadrant a at -4.80 were unearthed jar fragments (cat. no. 6.125, Figures 357.7, 468.30). And fragments of « Lydian » wares continued to be found. In quadrants b and c, now at a -3.00 m depth, above the -3.65 limit of IIID, « Lydian » ceramics were discovered intermixed with historic debris.

Most characteristic of this North Acropolis 73-1 excavation is the persistence and number of « Lydian » ceramics — which were found all through the trench between -3.00 m and the closing depth at -6.20 m. As mentioned previously, a specialist analysis of these ceramics is given by William E. Mierse in Part 4, p. 413.



ACROPOLIS TRENCH 7

Plans: Figures 127, 132-134, 144, 147-148, 165, 171 Sections: Figures 122-125, 131, 135-136, 154-157, 159-162, 166,

168, 170

Photographs: Figures 126, 128-130, 140-143, 145-146, 149-153,

158, 163-164, 167, 169

Artifact drawings: Figures 473, 477, 481, 484-485

Artifact photographs: Figures 469-472, 474-476, 478-480, 482-

483, 486

Chipped stone: Figures 264-266 Site field notebooks: 21-22, 24-26.

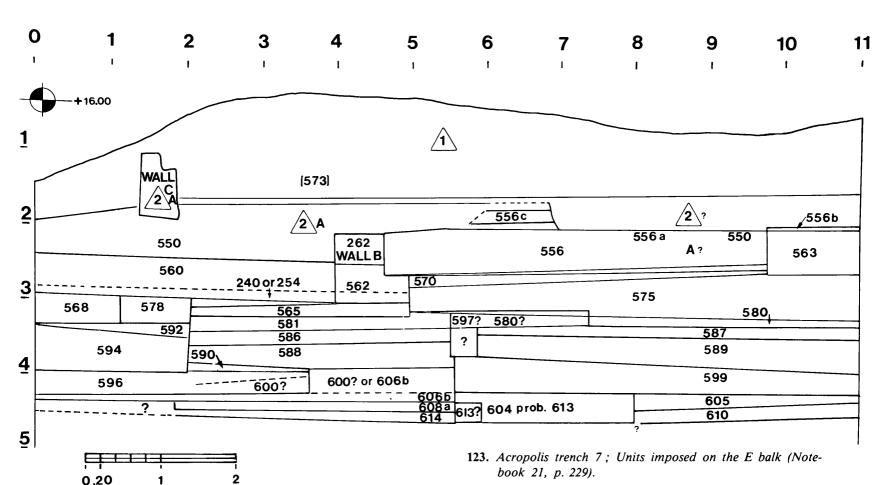
Trench 7 had the largest areal extent and depth of any of the trenches at Aphrodisias. It lay N of Trench 5 and E of Trench 4 (Figure 61). In 1969 it was excavated to a point -5.00 m below its trench datum, located at a height of +16.34 m above the +00.00 datum on the orchestra floor of the Roman theater. It measured 11.00 m N-S by 6.00 m E-W. In 1970 this trench was excavated from the 1969 depth of -5.00 m to ca. -8.76 below the subdatum. Barbara Kadish published the preliminary results of the 1969 season in the AJA 75 (1971).

Allocated by the excavators for this trench were unit numbers 550-781. Units selected here for study fall into eight major subdivisions of complexes — complexes that correspond to similar ones excavated in Trench 5. The earliest of these is Complex I, followed by Complex E

Synopsis

COMPLEXES	UNITS	
Complexes Ia-Ib	727, 733, 736, 749, 751a, 753, 757, 762-67, 769-70, 773-75, 777, 779-81, 781a-b.	
Complex E	718, 722-23, 728, 736-38, 742-43, 758, 765, 768, 771a, 771b, 776	
Complex D	670, 682, 687, 693b, 696, 698-706, 706a-b, 707a-b, 709-10, 710a-b, 712-14, 716-17, 719-21, 724-25, 729-32, 734-35, 739, 741, 744-47, 750-52, 754, 756, 759-61, 772	
Complex C	653-54, 656, 660, 662-63, 666, 677b, 678, 679c, 684b, 694	
Complex B	622-23, 627, 633, 644-46, 646a, 647-52, 659, 667, 669, 671, 675, 677a, 679c, 683, 684a, 691, 708, 711, 715, 721	
Complex B'	615-18, 620-21, 624, 628-32, 634, 635-43, 655	
Complex A-4	557-58, 566, 567, 569, 571-72, 574, 576-77, 611	
Complexes A-1 through A3	556, 559-65, 568, 570, 573, 575, 578, 579 (?), 580-82, 585, 589, 593, 594-96, 598-602, 604-06, 608-10, 612-13.	
Ramp and wall cleaning	619, 657, 664-65, 668, 676, 692a, 697, 708, 711-12, 726, 740, 748, 755, 758, 777, 779.83	

83. There are no field notes for units 778, 623-24.



and then Complexes D-A inclusive. There are also designations A-1 (A minus 1), A-2, A-3 and A-4, the most recent. This labeling system proved bewildering even for the excavators (Kadish 1971:129). Not all subdivisions are presented here — they are either confused in the field notebooks or are mixed with later materials. To clarify which corresponding complexes are in what trenches, the following list for Acropolis Trenches 5 and 7 may be useful:

TRENCH 7	TRENCH 5	
Complex A-4		
Complex A-3		
Level IIIc		
Complex A-2	A-2 (N.B. Not Complex A-2)	
Complex A-1	Complex A-1	
Complex A	Complex A	
Complex B'	Complex B'	
Complex B	Complex B	
Complex C'	Complex C's*	
	Complex C	
Complex D	Complex D	
Complex E	Complex E	
	Complex F	
Complex I	Complex I	

^{*} Complex C' was excavated in 1968. The excavator notes the designation is not clear — and further, we noticed though mentioned in the preliminary report, the complex does not appear in the illustrated stratigraphy (Kadish 1971:130, 111, 6).

Although all the Islamic and Byzantine ceramics of Trench 7 have been studied, 84 their presentation is beyond the scope of this report. The examination here is confined to those prehistoric units and complexes that had relatively secure stratigraphic contexts. Also the Catalogue is devoted only to objects that can securely be tied in with those. A selection of extraordinary objects from units that fall outside these complexes is put forth with others of their object class in either the photographic representations and/or the drawings in Part 4 and Volume II because it was thought that their singular characteristics would be of especial interest.

Complexes Ib-Ia, ca. -7.80 to -8.75 m

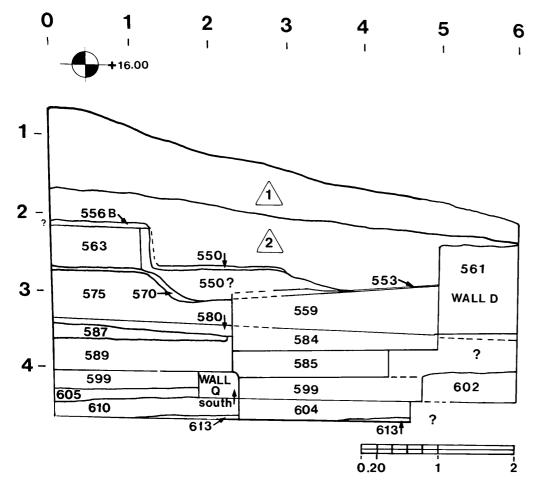
Plan: Figure 127

Section: Walls, Figure 131 Photos: Figures 126, 128-130 Artifacts: Figures 469-470

Approximately 32 units⁸⁵ are assigned to these two complexes; eight have their *terminus* in later deposits. The

^{84.} A.S. Benjamin expects to publish these results.

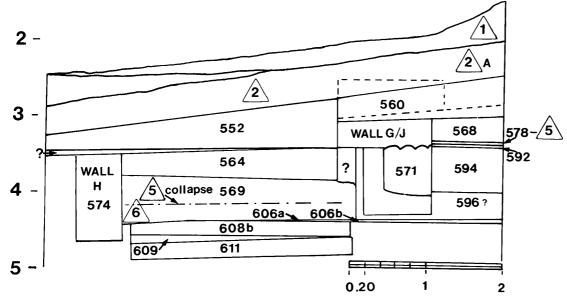
^{85.} The unit numbers for Complexes Ia and Ib are: 722, 723, 727, 730, 733, 735, 736, 738, 742, 744, 749, 751, 751a, 752, 753, 756, 758, 762, 763, 764, 765(N), 766, 767, 769, 770, 773, 774, 775, 780, 781a, and 781b.



124. Acropolis trench 7; Units imposed on the S balk (Notebook 21, p. 231).



1 -



125. Acropolis trench 7; Units imposed on the N balk (Notebook 21, p. 249).

excavators had divided Complex I into two habitation periods: Complex Ib is the earlier and Complex Ia thought to be a later building complex — but they are so interlocked that neither can be recognized as a separate stratigraphic entity. Even in our study of the ceramics we were not able to work out whether each complex had distinctive features since the units appeared to be homogeneous.

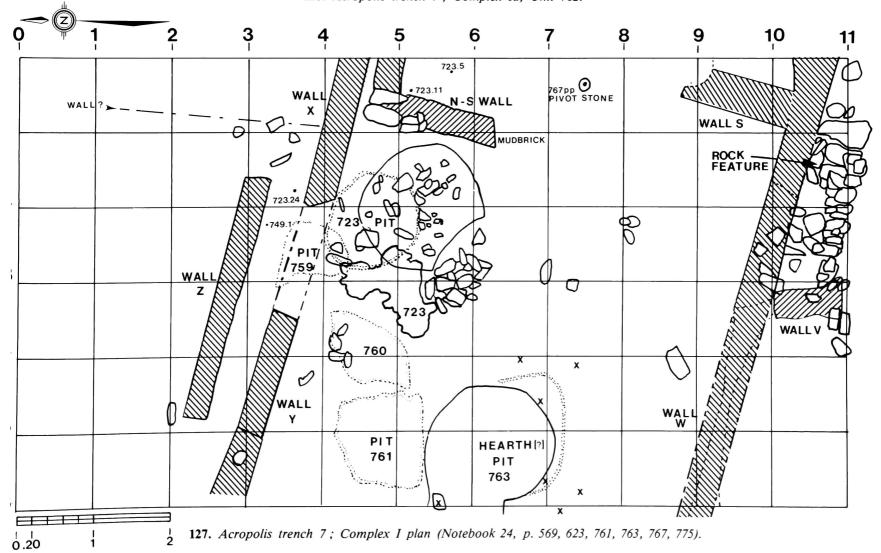
Demarcating the N part of these complexes and roughly extending SE to NW are two parallel walls: red mudbrick Wall X-Y, found between -7.30 m and -7.48 m depths; and green mudbrick Wall Z, resting at ca. -7.50 m depth. On the E is the fragmentary Wall N-S, perpendicular to Wall X-Y. To the S, the complexes are bordered by yet another red mudbrick wall, Wall W (Figure 127), first encountered at a -8.15 m depth, and Wall S, which was bonded to it.

From the field notes it is not clear how many of these mudbrick walls have stone foundations. We do know that Wall S rests directly on the soil, that at least Wall Z's foundations are composed of stones and massive ones at that. Plaster-facing is common to all but Walls Z and N-S; Wall S is plastered on both faces, Wall X-Y on the S face, and Wall W on the N face.

Wall S is cut into by a pit or this may be an interruption for a passageway for a pivot stone was found in line of access. Against the S side of Wall W, at a -8.17 m depth, sits a compact stone structure - a feature that the excavators theorize may have served as an outhouse or for storage. To the W of this structure, at a -7.88 m depth, lies the fragmentary yellow mudbrick Wall V. On the plan in Figure 127 it can be seen that Wall V meets Wall W at an oblique angle. All these walls are disturbed by later pits so that no coherent plan can be recognized.



126. Acropolis trench 7; Complex Ia, Unit 762.





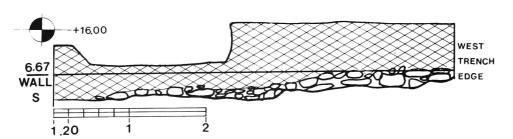


128. Acropolis trench 7; Complex Ia, Unit 756.129. Acropolis trench 7; Complexes Ia, Ib and D.

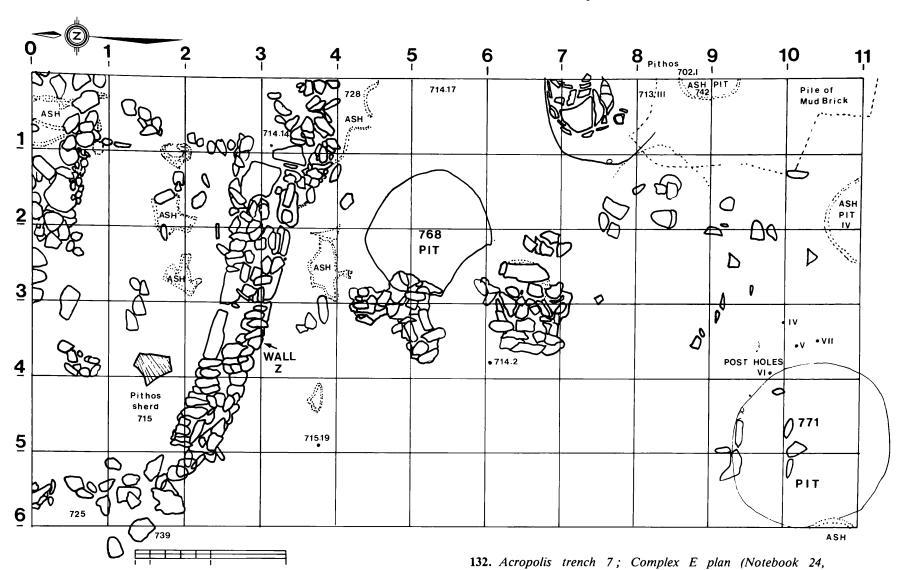
130. Acropolis trench 7; Complex Ia, Unit 766.



The central area, which lies between Wall X-Y to the N and Wall W to the S, probably served in many capacities: there is a concentration of domestic artifacts, stone clusters, mudbrick debris, and large amounts of charcoal. Five fragmentary floor levels were unearthed at varying depths of -7.80 m, -8.03 m, -8.15 m, -8.24 m and -8.49 m. The floor at the -8.03 m depth was found to be plastered.



131. Acropolis trench 7; Wall W section of N face (Notebook 22, p. 49).



p. 549, 551, 569, 585, 637).

Of particular interest to us was the excavation of a raised hearth or fire pit discovered at a -8.17 depth in the W part of the trench. It is surrounded by fragmentary clay columns 86 that are designated on the Figure 127 with « X »s — the excavators suggest this may have been part of a megaron-style structure.

0.20

2

Close to the S side of Wall X-Y another pit, a yellow ring 1.30 m in diameter, was unearthed down to a -7.66 m depth. It is lined with yellow clay and surrounded by stones. The excavators question whether this yellow ring was constructed later than Wall X-Y, by successive builders. A heavy ash deposit was noted between Wall X-Y and Wall Z.

Two marble figurine fragments were unearthed in these complexes (cat. no. 749.1, Figures 204, 469.1). The ground stone tool industry includes the usual grindstones, whetstones, and polishing pebbles. Two bone tools (cat. nos. 763.13 and 766.9) can be found on Figure 469. In addition, two metal objects, a pin (cat. no. 768.3) and a blade (cat. no. 769.1, Figures 469.29, 484.23) were recovered. It is assumed that both of these are bronze, but this has not been ascertained by tests.

Complex E, ca. -7.14 to -7.80 m

Plan: Figure 132.

Complex E is composed of 24 excavated units.⁸⁷ Of these five have later attributions,⁸⁸ and the others have earlier ones.⁸⁹ This complex (seen in Figure 132) is difficult to interpret, as huge pits from later inhabitants destroyed the plan of its living pattern.

At the very N of the complex, a stone wall (not given a label in the field notes but we will call it « Y » for clarity's sake) runs roughly parallel to Wall Z foundations on the S. Both walls are composed of a mudbrick superstructure resting on stone foundations (the substantial foundations of Wall Z are drawn on the plan). The

^{86.} No dimensions are given for these clay columns in the field note-book.

^{87.} Complex E includes the following units: 702, 705, 713, 714, 715, 716, 718, 722, 723, 725, 730, 736, 737, 738, 739, 742, 743, 747, 758, 765 (S), 768, 771a, 771b, and 776.

^{88.} Units 702, 705, 713, 725, and 730 are also considered with Complex D

Units 722, 723, 738, 742, and 758 are also discussed with Complexes IA-Ib.

definition of Wall Y is not clear because it was cut into by the builders of succeeding levels. In the NW corner of the trench, stones seem to curve in to join Wall Z, but this is not certain.

Lying to the S of Wall Z is ash pit 771 (which cut into Wall X-Y of Complexes Ib-Ia below); it is composed of dark brown earth with an ashy consistency and charcoal bits throughout. And just W of pit 768 are two stone clusters — possibly serving as foundations, their depths are from -7.58 to 7.70 m. At the S of the trench, seven post holes are found to extend down to approximately -7.30 m depths.

To the E, a large pile of collapsed burnt mudbrick plus substantial amounts of plaster are found at a -8.04 m depth; associated with this are large bone fragments. Although these bones were not identified, this probably served as a butchering area. This feature — because of its depth and position — may be related to the superstructure of Wall S of Complexes Ib-Ia. Throughout the entire trench ash pits predominate.

In this Complex the ground stone industry is well-represented with 38 tools. No figurines or truly distinctive pieces were recovered. Unearthed were one bone awl (cat. no. 723.17, Figure 472.7); three metal objects, only one of which could be identified as a pin (cat. no. 768.3, Figure 472.32); and two shells (one marine, one fresh water).

Only three ceramics were catalogued: a pierced disk, possibly incised with a potter's mark (cat. no. 722.16, Figure 473.34); a baking tray (cat. no. 742.1*, Figure 477.33); and a cooking pot with a handle (cat. no. 736.1*, Figure 477.26).

It is probable that these pits were used for various purposes — the ash concentrations associated with some of them indicate they served as hearths, as well as other occupational uses such as storage or garbage space. In the W an ash deposit lay in a series of pits that were roughly circular and overlapping.

Complex D Pits

Plan: Figure 133

Artifact Drawings: Figures 473, 477 Photos: Figures: 471, 474-476

It is difficult to understand the complexities of Acropolis Trench 7 and the fragmentary remains of Complexes D, E, and Ib,a, because of the intrusive pits of Complex D, out-lined in Figure 133.90 Accordingly, our conclusions about these early deposits remain tentative.

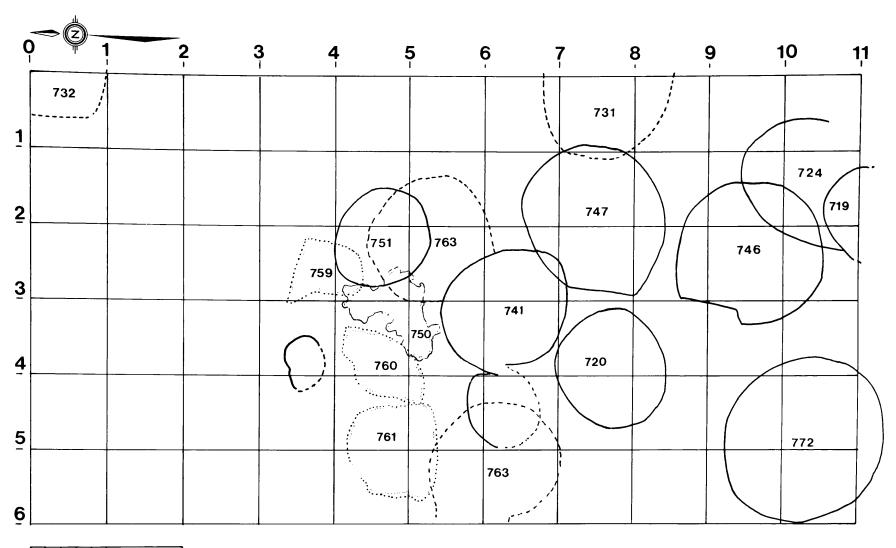
90. Note that two pits were excavated and bear the same unit number, 763; a third pit located N of pit 760 bears no unit designation. Pits 721 and 734 are not shown on Figure 133.

These pit-disturbed areas were excavated as part of Complex D but since they were undoubtedly intrusive from a later period, it is possible that some occupational debris found in D belongs to Complex C. The characteristics of each pit are outlined below:

COMPLEX D PITS

UNITS =	ELEVATION	DESCRIPTION		
720	-7.46/-7.64	Gray-brown soil with ash around edges and bottom		
719	-7.40/-7.63	Ash pit		
721	-7.44/-8.00	Ash at top, lower part mixed with yellow mudbrick debris		
724	-7.59/-7.68	Ash mixed with earth		
Pithos pit	-7.56/-7.82	Ash in bottom of pit; may have been in existence before pithos was inserted		
(Bottom of pithos at -7.63)				
732	-7.46/-7.67	Probable pit NE corner with ash and charcoal bits; profile of es- carpment does not show definite pit outline; layers of ash alter- nate with earth		
734		Pit from 713 stone cluster ⁹¹		
741	-8.05	Double pit, with charcoal and fibrous ash lining pit		
746	-8.17	Gray-brown earth surrounded by mudbrick; pit dug through Wall W		
747	-7.97/-8.21	Gray-brown earth intermixed with small mudbrick lumps that may have been residual from the mass of brick into which it was dug; limits of pit unclear		
730		Yellow walls, Complex E, Wall V, Wall W red mudbrick, Complex I-A		
750		A stone group (not a pit)		
751	-7.22/-7.62	Soil pit lined with yellow clay		
756 includ	es the following	units:		
760	-7.75/-7.86	Ash and dark earth, plus charcoal ash area		
761	-7.75/-7.84	White ash and charcoal bits		
759	-7.69/-7.80	White ash pit, negligible charcoal content		
772	- 8.26/ - 8.56	Pit cutting into Wall W, gray- brown earth. Pit white-lined from either ash or plaster or both. Two stones lying in the center on bot- tom of pit		

^{91.} A pit that extended from unit 713 was closed in unit 734.



133. Acropolis trench 7; Complex D pits, plan (Notebook 24, p. 609, 611, 639, 661, 699, 721, 723, 729, 761, 763, 795, 797).

Complex D, ca. -6.50 to -7.14/-7.26

Plan: Figure 134 Photos: Figures 137-142

0.20

Artifacts: Photos: Figures 471, 474-476

2

Drawings: Figures 473, 477

Thirty-eight units ⁹² are ascribed to Complex D, including the areas of pitting previously discussed. Of these units, 17 are questionable for they include material of both earlier and later deposits. Although units ascribed to pits were presented separately, the ceramics of Complex D were examined as a whole and then combined with Complex E for the computer analysis (Part 4). Also the artifacts have been catalogued with Complex E since there is, as stated, some overlap.

In addition to the pit problems, further complications (obvious on the trench plan, Figure 134) are caused by rebuilding within the complex itself. The extremely

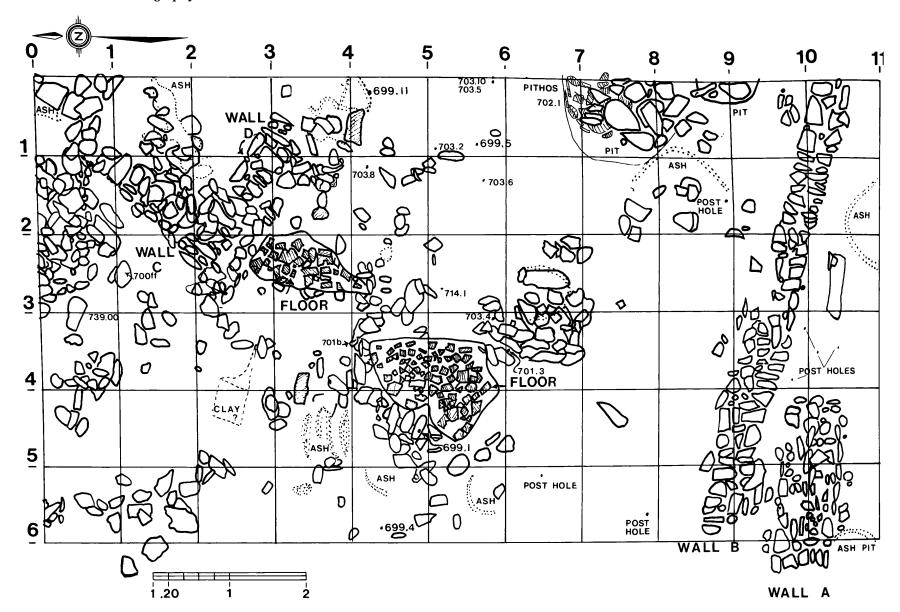
92. 670, 682, 687, 693b, 696, 698-706, 706a-b, 707a-b, 709-10, 710a-b, 712-14, 716-17, 719-21, 724-25, 729-32, 734-35, 739, 741, 744-47, 750-52, 754, 756, 759-61, 772.

disturbed and poorly preserved nature of Complex D suggests intrusions are to be expected throughout.

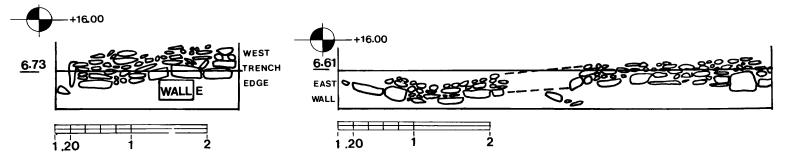
This complex is delimited on the upper or latest part by a mustard yellow clay deposit which may have been a floor; it appears from a -6.68 m to -6.50 m depth and portions of it extend over the entire trench.

In the S are found two parallel E-W walls. Wall B, which is first encountered at -7.11 m (no closing depth, therefore no height was given) has obviously been disturbed, for in Figure 134 can be noted a 0.80 m indentation where stones are missing. Just S lies a long stone slab which may have been part of the wall; it is unclear just how it was used. Associated with this wall is a massive amount of red and yellow burnt mudbrick and charcoal, slanting downward from N to S at a 45° angle.

Parallel to Wall B and excavated at a -7.19 m depth runs a stub, Wall A — a partial wall that may either have been robbed or fell into disuse for some reason. Both these walls slope to the N. It is not certain if there is a cross-wall linking them... but the field book mentions a possible cross-wall E running under Wall A,



134. Acropolis trench 7; Complex D plan (Notebook 24, p. 367, 451, 453, 469, 481, 517, 529, 549).



135. Acropolis trench 7; Complex D, « Wall A » and Unit 704, section of N face (Notebook 22, p. 45).

136. Acropolis trench 7; Complex D, Wall B, section of N face (Notebook 22, p. 43).

as shown in the section on Figure 135. Near the walls, a series of post holes 0.10-0.12 m in diameter and 0.05 m deep were found at -7.20 to -7.30 m depths. Two were unearthed to the N and W of Wall B, and four to the S. These post holes may have been dug at different stages during the life span of the walls. Three definite ash areas were noted, as well as scattered and less defined ones.

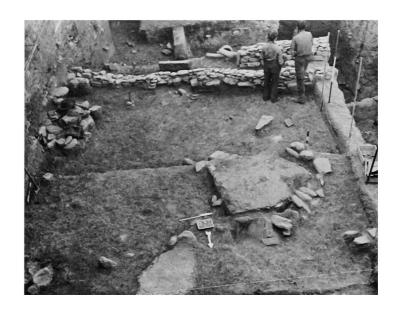
In the center of the trench other architectural features include two partial pavements — of broken potsherds resting on a clay floor — found between -6.87and -6.97 m. These are outlined on Figure 134. The excavators suggest they may have served as hearth areas. The N « hearth » is surrounded by stones; when it was sectioned, 12 lenses of differing clayey soils were discovered. The S one contains a little ash.



137. Acropolis trench 7; Complex D.

In the NE corner of the trench, two fragmentary Walls C and D are located; ash areas and pits are associated with both. Discovered in one of those ashy deposits, at a depth of -7.34 m, was a fine head of a ceramic animal (cat. no. 713.11, Figures 290, 471.17, 473.30), which I have catalogued as a stag's head.

As mentioned, this Complex D consists of an aggregate of deposits and architectural elements that are difficult if not impossible to associate and interpret. However, it is tremendously rich in artifacts. There are 55 ground stone tools — the most striking element of which is the large number (43) of outsized grindstones (Figure 473) and their variety of shapes. Chipped stones are represented both in large numbers and in tool types. Of ten bone tools, all but three are awls. There are three metal objects including a ring, a pin, and a needle (none analyzed for ore content). Also unearthed were 15 spindle whorls and some seven loom weights — both crescentic and globular types (see Part 4, p. 379 ff.). Of 17 shells found, ten are marine species — an interesting indicator of contact between Aphrodisias and the Aegean as well as the coastal plain.



138. Acropolis trench 7; Complex D.



139. Acropolis trench 7; Complex D.

Catalogued were as many as 87 ceramics. In addition to the stag's head (above), there are several others worth noting: a red-cross bowl fragment (cat. no. 698.5*, Figures 321.16, 477.20); a bowl rim with an ancient repair (cat. no. 682.13*, Figures 321.13, 477.31); two cutaway beak-spouted jug fragments (cat. nos. 682.14*, Figure 477.34, and 698.6*, Figure 477.35); and a cooking pot with a crescentic lug handle (cat. no. 670.4*, Figure 477.14).

Three objects that have been placed under miscellaneous in the Catalogue deserve specialist analysis: a turtle shell which may/may not be intentionally carved (cat. no. 702.12, Figure 471.36); what appears to be an insect casing (cat. no. 699.2); and a crab claw (cat. no. 704.5, Figure 195.13) which should be analyzed to determine if its origin is marine.



140. Acropolis trench 7; Complex D.



142. Acropolis trench 7; Complex D.

Pithos Burial

At the N end of Wall B and extending into the E trench balk, a semicircular pit made of stones was found. As this feature was excavated, it became defined as an « inverted pyramid » covering a badly shattered pithos burial (cat. no. 702.1). The stones appear to have been implanted around the upper part of the huge jar, most probably to steady it. This fragmented vessel lay distorted, with its base to the W and its mouth to the N. The field notes suggest that the pit had been dug, probably by Complex C people, to insert the pithos. The fill of this was characterized by an uppermost mass of hard

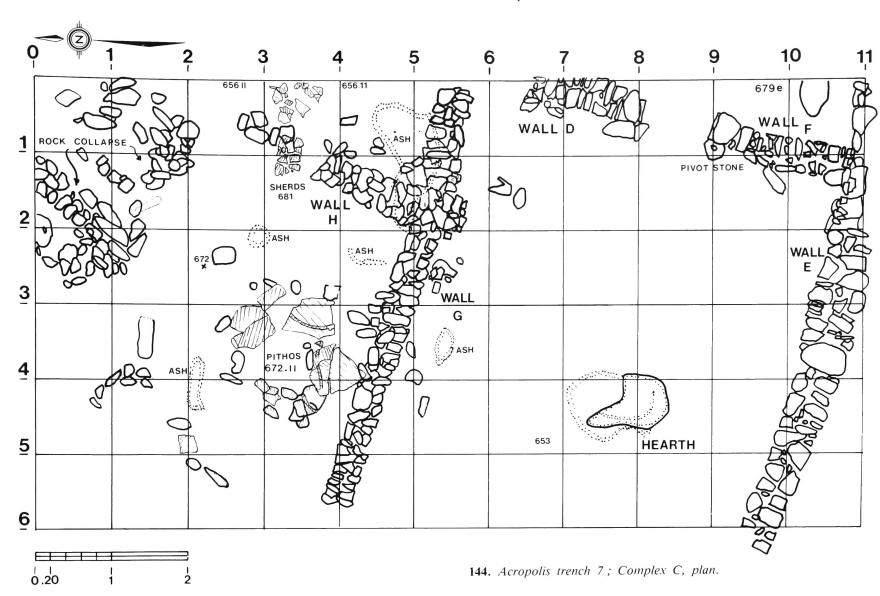


141. Acropolis trench 7; Complex D.

chaff-tempered clay, a middle layer of ash with burnt mudbrick debris... and then, resting on a bed of ash... disarticulated burnt bones. Into this ash had been imbedded a shallow bowl (cat. no. 717.I). Near the pithos was found a spouted jug (cat. no. 713.III). It is most unfortunate that neither these two originally catalogued objects of bowl and jug, not even the pithos, could be located at the site for presentation here or in the Catalogue. Nor do we know anything more about the bones.

143. Acropolis trench 7; Complexes C-E.





Complex C, ca. -5.80/-6.00 to -6.50 m

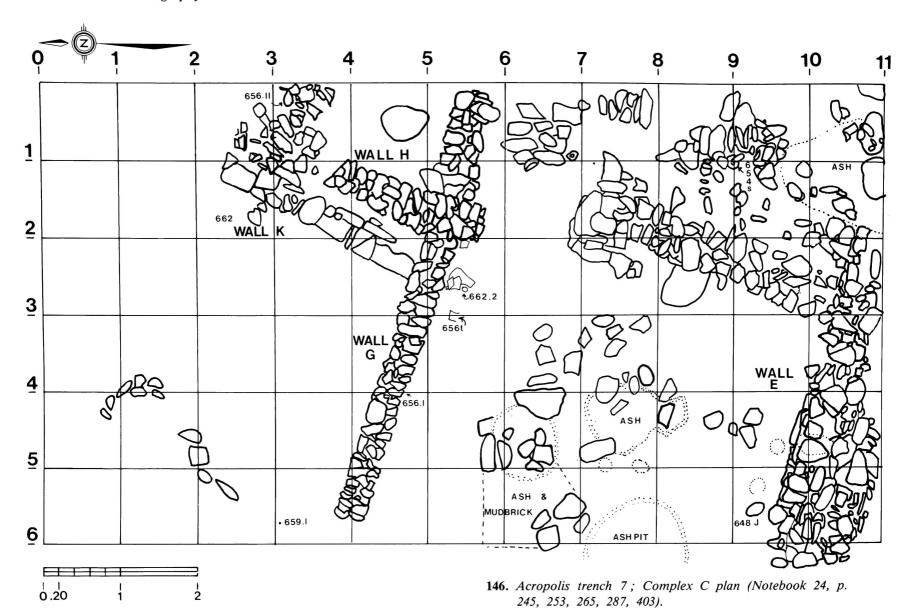
Plan: Figure 144 Photos: Figures 145, 147 Artifact drawings: Figure 481 Artifact photos: Figures 478-479

Twenty-six units comprise this complex, 93 and of these, eleven have later attributions 94 and six have earlier 95 ones. In general, Complex C is characterized by hard friable burnt mudbrick and charcoal, mixed with scattered potsherds in areas of ash. The important architectural feature here is part of a one-room structure that we propose is megaroid in plan. Discovered between E-W parallel Walls G and E at a depth of -5.98 m was what was considered to be a large hearth (Figure 144), composed of mudbrick and ash.



145. Acropolis trench 7; Complex C, Wall F.

- 93. Those 11 units from Complex C that are certain in assignment include 658, 672-73, 679a, 680a, 681, 685, 692a-b, 693, 695.
- 94. Units 653, 656, 660, 666, 671, 677b, 678-79, 679c, 680b, and 694.
- 95. Units 674, 686, 688-90, 697. The ceramics of these units have been sorted with this complex.





147. Acropolis trench 7; Complex C.

Walls G and E show surviving stone foundations that once had mudbrick superstructures. Wall G was first uncovered at -5.63 m and its base at -5.82 m. Several ash pits are seen to the N of it. Wall E, revealed between -5.60 to -6.19 m, is probably connected to Wall G at its S extension — which seems to be bonded to Wall E by fragmentary Wall F. The juncture of Walls F-E is marked by burning. In Wall F is located a doorway with a pivot stone (cat. no. 670v, Figures 249.7, 481.49).

No definite floor level was found, but it is speculated that there probably was one within the debris in the NE trench corner at approximately $-6.10 \, \mathrm{m}$. This area on the plan is represented by a collapse of stones. Near the E escarpment and E of Wall H, a pithos (cat. no. 656.II) was uncovered, also a layer of sherds near the NE of this wall. The remains of yet another pithos (cat. no. 672.II), was unearthed lying to the N of Wall G. The two pithoi can be seen on the plan, Figure 144.

96. This pithos is mentioned in the field notebook, but also could not be located at the site.

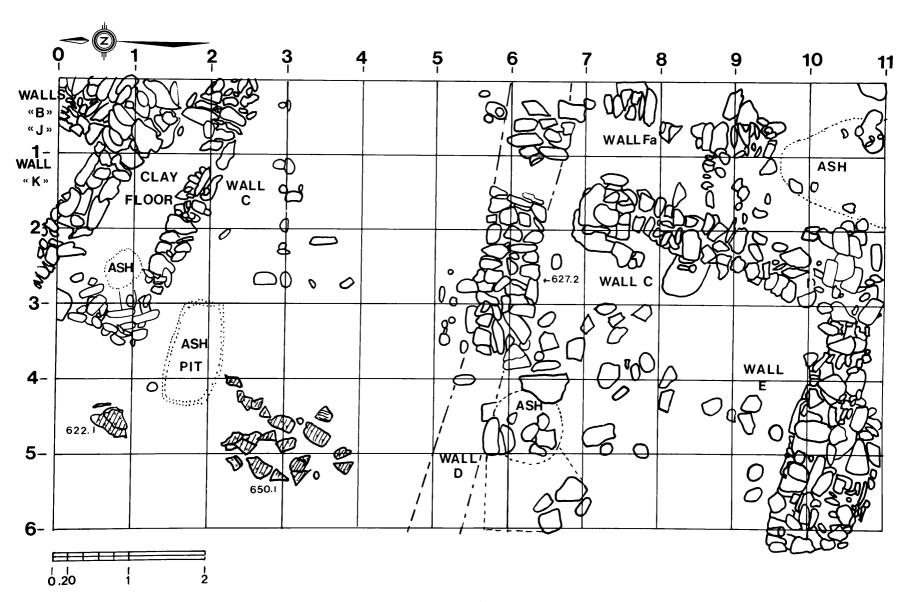
From unit 686 were recovered several possible figurines: one certain white marble notched figurine cat. no. 686.3, Figures 233, 478.26 and two schist objects that are classed as « figurines » — a sack-type (cat. no. 686.1, Figure 478.9), and another (cat. no. 686.2, Figure 478.7).

An object classed as a « weight » (cat. no. 690.1, Figure 478.25) may have served a different purpose. Bone objects numbered eight — and included six awls and a marked ribbed bone. There were four interesting metal objects: a bronze (?) spiral, a pin, a ring fragment, and an incrusted blade fragment, cat. nos. 672.2; 672.4; 688.2; 693b.1, respectively — all shown on Figure 478. One marine shell was unearthed and is shown on Figure 479.26.

Of the 13 ceramics uncovered, several deserve special mention: a red-slipped bowl showing the raised omega

or moustache design (cat. no. 685.1*, Figure 485.4); a partial neck-grooved juglet (cat. no. 681.1, Figure 485.24); a cutaway spout with a reddish brown flaky slip (cat. no. 670.1*, Figure 485.15); an incised storage jar with neck slashes (cat. no. 685.2*, Figure 485.17); a crooked juglet (cat. no. 686.1, Figure 485.14); and the head of a crude animal figurine (cat. no. 689.1, Figures 238, 478.11, 485.12).

Of great interest was the find from unit 693 located in the SE of the trench — a curved metal blade discovered at -5.21 m (cat. no. 693b.1, Figure 478.23). It may be bronze, but it has such a thick incrustation on one side (looks like charcoal intermixed with earth) that it is difficult to tell.



148. Acropolis trench 7; Complex B plan (Notebook 24, p. 109, 119, 129, 179, 189, 211, 213, 217, 221, 233).

Complex C', ca. -6.00 to -6.41 m

Plan: Figure 146 Photos: Figures 149-152

Artifacts: Drawings: Figure 481; Photos: Figure 479

Complex C' partially overlies the earlier Complex C and uses some of its architectural features, namely Walls G and E. It is composed of 12 units.⁹⁷ This complex is difficult to understand. The plan on Figure 146 shows that it is part of a room that has wall elements of both Complex C below and Complex B above — however, a few general comments are possible regarding its layout.

As suggested, Complex C' seems to represent the rebuilding plus the adding on of new mudbrick to the remaining Complex C walls. This is evident particularly in the S of the trench where Wall E is located — its base, now at -5.55 m, is a reused structure from Complex C. To the N, on a double row of stones (Figure 149) is a rebuilt Wall G now with a base at -5.63 m. And a rebuilt Wall H, perpendicular to Wall G, has its base now at -5.10 m. The curious Wall K, constructed parallel to it, is probably bonded to Wall G but of this we cannot be sure. This structure was originally thought to have been a threshold or entry way, but then was designated a wall. In the NE corner are stone foundations with three courses of mudbrick intermixed with gray and white ashy debris. Large amounts of charcoal, evidently from burned beams, plus mudbrick debris are found associated with all these walls.

A N-S partial five-course mudbrick wall, Wall C (can be seen on the Complex B plan, Figure 148), with stone foundations in its NE corner, was noted to have been plastered on the lower two courses — this suggests to the excavators that its upper courses may also represent rebuilding. To the E of Wall C, the SE of the trench is bordered by large white ash concentrations (represented on the plan by dotted lines). A pivot stone (cat. no. 654s, Figures 250.7, 481.46) was unearthed nearby — which implies an entry, but the area is too confused and the stone may not even be in situ.

In the W central part, in unit 653 bounded by Wall G on the N and Wall E on the S (Figure 146), is an area of densely packed ash. Here was found a fine-grained black stone adze (cat. no. 653.1, Figures 252.19, 479.31, 481.14), as well as two pierced ceramic disks and a whetstone (Figures 479.11, 481.15).



149. Acropolis trench 7; Complex C'.



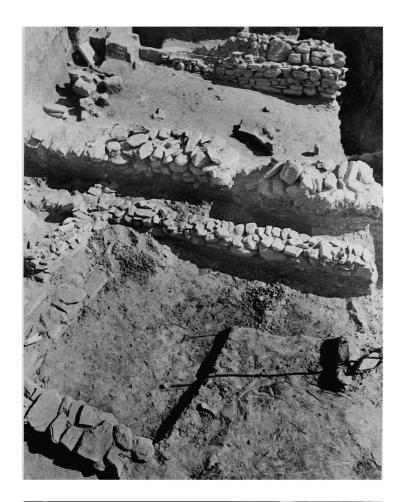
150. Acropolis trench 7; Complex C'.

Even though Complex C' has some clearly defined architectural elements, there is little evidence how these work together. The floor, an unburnt level at ca. -5.45 m, seems to have been used for just a short time and its extent is not clear. Apparently there is a hearth area N of Wall E that may have functioned as a domestic space — a possible entrance to this provided by a break between Wall H and the crosswall, Wall C. Further, the relationships among Walls G, K and H are difficult to interpret.

Of the 26 ground stone tools recovered, the outsized grindstones dominate the group. Two bone objects were catalogued — a worked bone fragment and a polished tool; both are shown on Figure 479. No metal objects were found in this complex.

Also of note is a black stone disk which may have been the head of a figurine (cat. no. 694.2, Figure 479.28).

^{97.} Units 654, 662, and 663 are the only units that do not carry either later or earlier attributions. Units that are associated with earlier contexts but terminate in Complex C are 653, 656, 666, 677b, 678, 679c, 684b and 694. Units also assigned to later contexts include 648-49, 655, 660, 667, 671, 683, 684a and 691.





151-152. Acropolis trench 7; Complex C'.

Out of the 16 ceramics entered in the Catalogue, six are pierced disks. And only two fragmented bowls should be singled out: an incurving red-slipped one (cat. no. 653.2*, Figure 485.30) and an everted one with a flaky red slip (cat. no. 653.1*, Figure 485.21).

Complex B, ca. -5.50/5.70 + below to -5.80 m

Plan: Figure 148

Sections: Figures 154-157, 159-162 Photos: Figures 153, 158, 163-164 Artifact drawings: Figures 481-484 Artifact photos: Figure 480



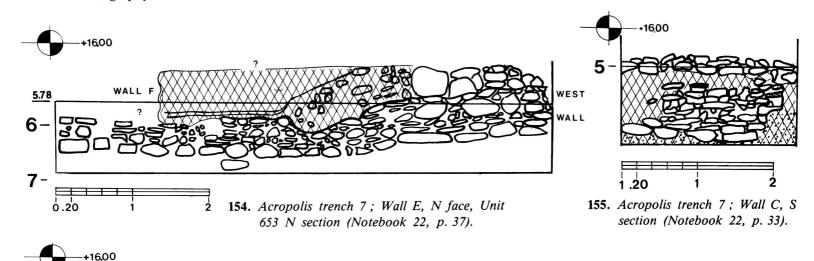
153. Acropolis trench 7; Complex B.

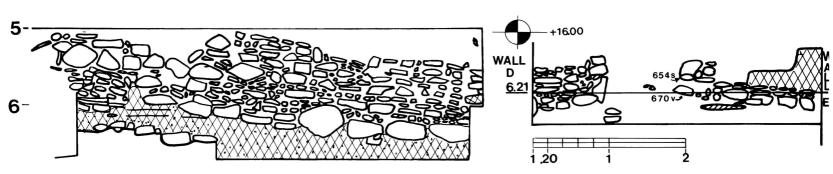
Complex B was assigned 28 units. 98 The S half of the complex consists of one partial room — with foundations of E-W Wall D on its N side and Wall E on its S, plus the N-S crosswall, Wall C, bordering on its E. Further E of Wall C are Walls F and Fa, both in a fragmentary state. It is not clear if Wall Fa is bonded to Wall D or is perhaps part of another building. In comparing the plans of Figure 147 to Figure 148, it can be seen that Complex B reused many elements of the Complex C' wall foundations.

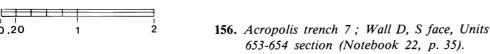
In the area enclosed by Walls C, D, and E, the earth is reported to have been a burned brown, with charcoal and collapsed mudbrick debris in the SW. The soil condition led the excavators to conclude that the complex had been totally burned in a fire, and that the accompanying charcoal deposits are burnt beams. Because the charcoal debris abuts Wall C, it is reasoned that the wall and beams were contemporary both in use and destruction. Areas of ash prevail to the E of Walls E and C and S of the E end of Wall D. Large chunks of mudbrick cover a great part of the area.

Wall D is noted to contain pithos fragments in the mudbrick. Associated with this wall is unit 627, containing a uniform grayish brown soil — with heavy concentrations of ceramics and some bone. Two spindle whorls were recovered here, one undecorated (cat. no. 627.1, Figures 314.1, 483.32, 485.38), and another (cat. no. 627.5, Figure 483.30) which has its upper surface incised with white-filled swags. In the NE of unit 648 was found a grindstone (cat. no. 648n, Figure 481.35); in fact, a wide variety of artifacts was uncovered in this locus (see Figure 480), suggesting that the area continued as a domestic space.

98. Seventeen units that cannot be securely placed in earlier or later attributions; 622-23, 627, 633, 644, 645, 646, 646A, 647, 650, 651, 652, 659, 669, 674, 677a, and 711. Eleven units find their terminus in this complex: 648, 649, 667, 671, 679c, 683, 684a, 691, 708, 715, and 721.







157. Acropolis trench 7; Wall Fa, Unit 693 section (Notebook 22, p. 39).



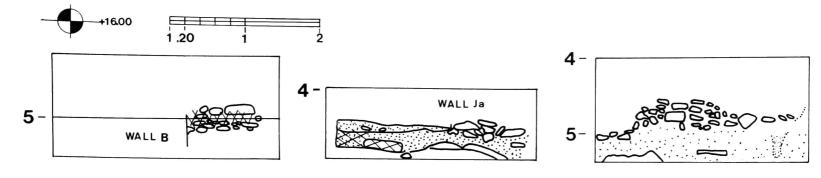
158. Acropolis trench 7; Complex B.

In the NE of the trench is a curious apsidal structure (Figure 148), bounded on the S by Wall C that runs into the NE escarpment, and on the N by Wall « A » that is joined to the E by the strange abutment of Walls « B » and « J ». Wall « J » appears to make a turn toward the N and this extension is known as « Ja ». This wall can be found on the plan, marked « J ». The closing depth of Wall « Ja » is about -5.80 m. Wall « A » appears to have been built on mudbrick collapse; a concentration of ash lies on its clay floor, uncovered at ca. -5.50 m.

To the SW of the apsidal structure a large ash pit was uncovered, along with a pile of stones just S of the pit. It is not clear if this stone pile is part of a wall collapse, or if the structure was even walled at that time. The soil associated with this area is a uniform brown color patched with mudbrick debris.

There were 51 ground tools recovered: 13 grind-stones, many of which are outsized; several hammer-stones; six whetstones; smoothed stones and tool fragments; a polished serpentine adze (cat. no. 651.1, Figures 480.18, 481.23); and also an axe of serpentinite (cat. no. 649.6, Figures 480.13, 481.16). Also found was a gray schist figurine (cat. no. 644.1, Figures 216, 480.9).

Six bone tools were catalogued: three are awls—one has an elongated bead (cat. no. 648.4, Figures 481.6, 483.37), and the remaining two are miscellaneous objects. Three metal objects were discovered, but just what metal(s) was not ascertained: a ring (cat. no. 623.1, Figures 483.45, 484.16) and two nails (cat. nos. 650.1 and 646.4, Figure 483.40). Two fresh water shells were found and are drawn on Figure 483.



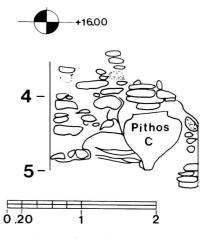
159. Acropolis trench 7; Wall B section before removal.

160. Acropolis trench 7; balk section after Wall J removal.

161. Acropolis trench 7; N balk, NE corner section (Notebook 22, p. 17).



162. Acropolis trench 7; Wall D, N face, section (Notebook 22, p. 31).

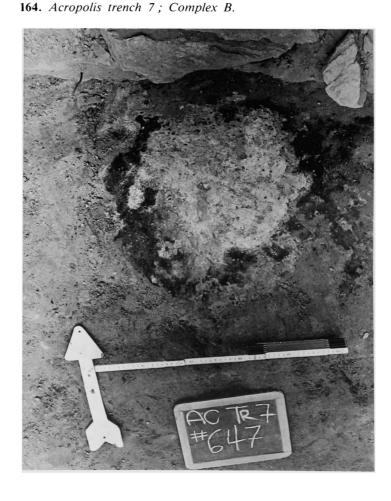


163. Acropolis trench 7; Complexes B, B', Unit 630, Pithos C and N balk.

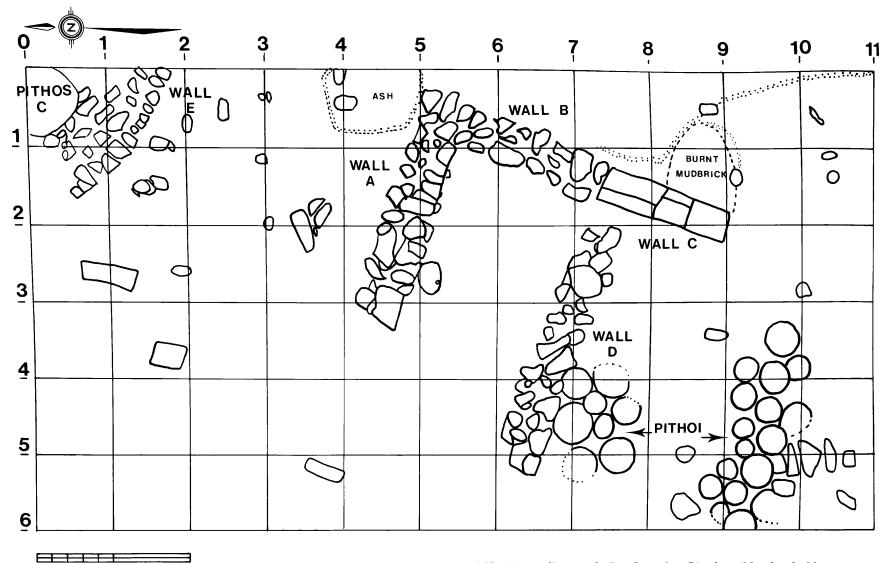
Catalogued ceramics numbered 51: of these 25 are disks or pierced disks; four are spindle whorls — two mentioned above — and of the other two, one is decorated with unilateral white-filled incisions (cat. no. 715.1, Figures 314.9, 473.29, 483.31), the other is undecorated (cat. no. 648.1, Figures 314.11, 483.33, 485.37); and several bowls with string-cut bases (cat. nos. 648.1, 648.111, 648.1V and 652.1).

Several intrusive elements ⁹⁹ were found in the balks, among them two Islamic green-glazed sherds (*cat. nos. 646A.2* and *646.5*) and an imitation Samian ware fragment (*cat. no. 646.6*). ¹⁰⁰

- 99. The excavators had assigned Unit 644 to this prehistoric complex, even though both the field notes and the pottery study indicated that the unit was a mixed deposit with Byzantine intrusions. This is further reflected in the Catalogue with the listing of three glass fragments a glass manufacturing area of the Byzantine period had cut into this deposit, thus these finds are not unexpected in the artifact corpus. However, in this unit and perhaps belonging to the prehistoric period was discovered a double-spouted jug with a twisted handle (cat. no. 644.1, Figure 485.44).
- 100. We have purposefully included these intrusive elements so that the reader is aware of the extent of disturbance in these deposits, and the artifact as well as the stratigraphic character of these factors.



and N balk.



165. Acropolis trench 7; Complex B' plan (Notebook 21, p. 205, 279).

Complex B', ca. -5.60 to -5.80 m

Plan: Figure 165

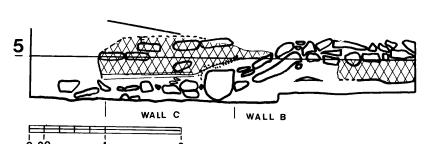
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Sections: Figures 166, 168, 170 Photographs: Figures 167, 169

Artifacts: Drawings: Figures 481, 484-485;

Photos: Figure 482

Approximately 23 units are assigned to this complex. ¹⁰¹ As Complex B' was the last complex to have been excavated during the 1969 campaign and the first to be completed in 1970 (Kadish 1971: pl. 27, fig. 18, ill. 9), it was expected that some of the first excavated units (units 615-18) would contain Byzantine ceramics, glass fragments and other debris that had been collected in the trench during the intervening period. And indeed there was found an admixture of historic materials with the prehistoric, but there were also areas that were undisturbed.

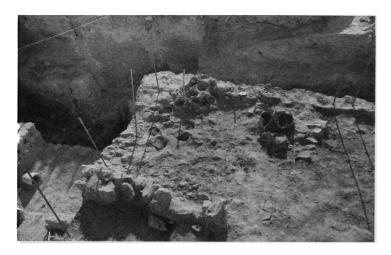


166. Acropolis trench 7; Complex B', Wall C/B, E face section (Notebook 22, p. 25).

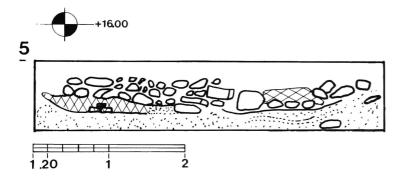
101. Many units have their terminus in this deposit. These include 624, 628-29, 630, 631, 632, 634, 636, 637, 638, 639, 640-43, and 655. Seven units belong only to this deposit: 615-21 and 635. In addition, 14 units ascribed to this complex are associated with balk cleanings and the removal of wall structures (units 630-32, 634-43, and 655).



167. Acropolis trench 7; Complex B'.

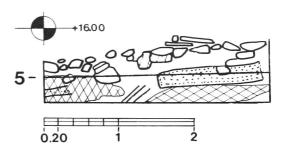


168. Acropolis trench 7; Complex B', Wall A, N face, section (Notebook 22, p. 29).



169. Acropolis trench 7; Complex B'.

The Complex B' remains were found primarily in the SW of the trench S of Wall D, where a powdery mass of red burned mudbrick was located. Under this collapsed mudbrick, 25 storage jars containing charred seeds intermixed with mud and chaff deposits were discovered (Figure 169), which strongly suggests this area served for storage.



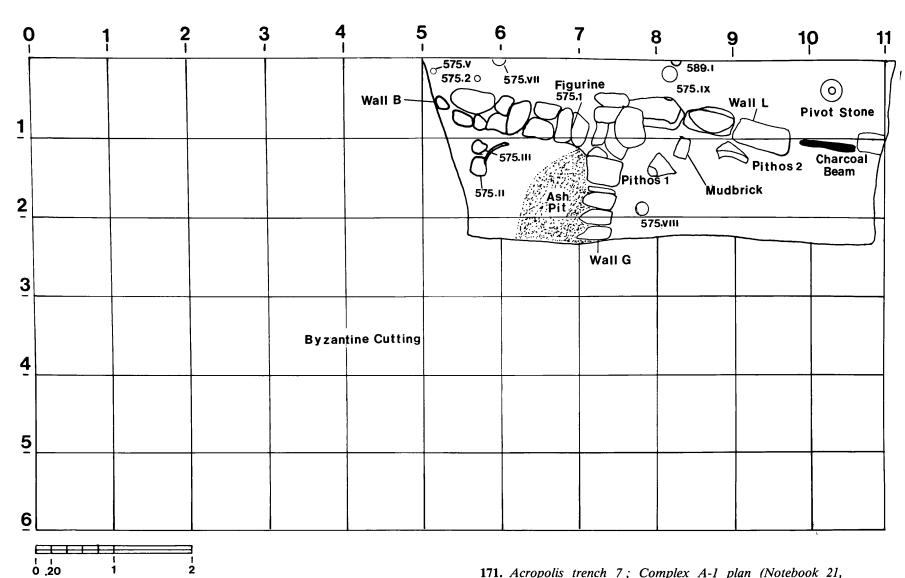
170. Acropolis trench 7; Complex B', Wall C continuation, W face section (Notebook 22, p. 27).

N and E of fragmentary Wall D the foundations of Walls A and B are found running at right angles to one another. They appear to be similar in construction, but Wall A was built on mudbrick debris and the area under Wall B is of a homogeneous brown soil. Presumably Wall B is bonded both to Wall A and Wall C but it is not clear if Wall D is bonded to Wall C. The continuation of this building to the S or to the W is impossible to reconstruct because of the Byzantine cuttings.

In the NE trench corner, a slightly curving Wall E (Figures 162, 163, 165) possibly comprises a storage area — but the large jar, Pithos C, discovered here may have been cut into this wall from a later period. To the S of the wall are scattered large fragments of burned mudbrick. Further S are several stone groups, and against the E escarpment one of these is encircled with gray-brown ash and charcoal.

Of the 15 ground stone tools catalogued, two axe fragments are worth noting (cat. nos. 628.5, Figures 482.4, 484.1 and 629.2, Figure 482.2). There was one figurine (cat. no. 628.3, Figures 234, 482.27). Only two bone objects were unearthed — they are both shown on Figure 482. But six metal objects were recovered (two were given one catalogue number, 639.3J); these include a pin, a blade, three fragments, and a nail — all are shown on Figure 482. Two marine shells were found (cat. nos. 628.2 and 628.7) and are represented on Figure 483.

Ceramics catalogued were 20 — and of these, nine are pierced or unpierced disks. Several pieces we considered interesting are: a brush handle fragment (cat. no. 628.6, Figures 317.3, 482.20, 485.40); a globular loom weight (cat. no. 639.1, Figures 482.11, 484.11); two undecorated spindle whorls (cat. nos. 640.1 and 642.2, Figures 314.14, 482.13, 484.10; 314.4, 482.12, 484.2); and the base of a globular juglet (cat. no. 643.1, Figure 485.10).



171. Acropolis trench 7; Complex A-1 plan (Notebook 21, p. 209).

Complexes A-1 through A-4, ca. -5.15 to -5.60 m

Plan: Figure 171

Artifacts: Drawings: Figure 484; Photos: Figure 486

Complexes A-1 to A-4 are mixed; the closing depth is ca. -5.15 m (no opening depth was given).

The earliest subdivision of Complex A is A-1 (A minus 1, therefore the usual order of high number to low as we proceed up in time is reversed), and the latest is A-4, the last of the prehistoric levels that concern us here. Complexes A-1 to A-4 are deposits mixed with historic materials.

The position of Complex A-1, in a section of the E balk, can be found on Figure 122 and its plan on Figure 171. Foundations of a building were uncovered but there is no clear pattern of construction. Complex A-1 was disturbed by pits, but three wall fragments — B, G and L — remain to form a « T », with Wall G serving as the partition between the two areas. In the plan Wall B is not bonded to Wall G, but it appears to be at a lower level.

Against Wall G to its N is a substantial (0.80 m) quarter-circle ash pit. It seems that Wall L may extend as far the S wall of the trench, for a charred beam was discovered fallen between its S end and the stone that possibly marks its continuation into the E balk.

The elevations for this complex are not stated in the preliminary report, but the field notebook suggests that the top of the wall foundations is at ca. a -3.90 m depth. Most of the artifacts were found at -3.22 to -3.30 m, which presumably is the floor level. Scattered pithos fragments, much charcoal, and some burned earth are how the excavators describe the features of this deposit (Notebook 21, p. 85).

Ceramics are represented by a cooking pot with grooved handles (cat. no. 575.II, Figure 484.8); a jug (cat. no. 575.VIII); a deep bowl with horizontal handles (cat. no. 575.XII, Figure 484.4); and three undecorated spindle whorls (cat. nos. 575.2, 575.5, and 575.6, Figures 486.6, 7, 10).

The ground stone catalogue contains the usual domestic articles including several grindstones, whetstones, and smoothed stones. Two figurines were discovered: one a fragmented marble head (cat. no. 575.1, Figures 237, 486.16), and the other a calcium carbonate piece (cat. no. 575b.7, Figure 218). At approximately the same depth as the burned debris of Complex A-1 was found a ceramic figurine fragment (cat. no. 565.3, Figures 239, 486.8) which had been red-slipped, with its facial features and clothing outlined in black — but since the area was so disturbed, the excavators reserved judgment as to just what level to correlate it.

The accumulation of earth between the end of Complex A-1 up to A-4 was confused because most of the features appeared to have been cut into by later builders. Further, there seems to be a conflict between the field notebooks and the published report regarding all these complexes. For example: Complex A-1 is well-represented in the published report (Kadish 1971: ill. 7) and is also clearly delineated in the field notebooks... but the notebooks tell us little regarding Complexes A-2 to A-4, yet there is some information regarding these in the published report. As that report is the later document we will rely on its information for our data.

Complex A-2 was reported to be composed of « a narrow strip of earth approximately 40 cm in depth which shows no evidence of house walls... » It is not clear where this was located. Complex A-3 plan is represented in the field notebook (no. 21, p. 86); but neither this plan nor A-2, nor A-4 have been drawn here because of the great disturbance by Byzantine cuttings which left little intact.

Complex A-3 was located in the E of the trench and its elevations are possibly -3.30 (?) to -2.80 (?). A floor 5 m N-S by 1.50 m E-W and an E-W fragment of a wall 1.50 m in length (located in the SE of the trench) were all that remained. A ceramic fragment (cat. no. 556.1) was recovered here.

The pottery of A-2 and A-3 is similar to that found in A-1, and includes deep bowl types, pedestalled base

shapes plus various types of horizontal handles which can all be found in the Catalogue.

Complex A-4, the most recent level, was comprised according to Kadish (1971:129) of

« ... a small remaining rectangle of plaster floor ca. I m square which occupied the extreme SE of Trench 7... with a narrow chimney-like column of earth and debris from Bronze Age material which has been left between two cuttings for Byzantine (?) build-up. »

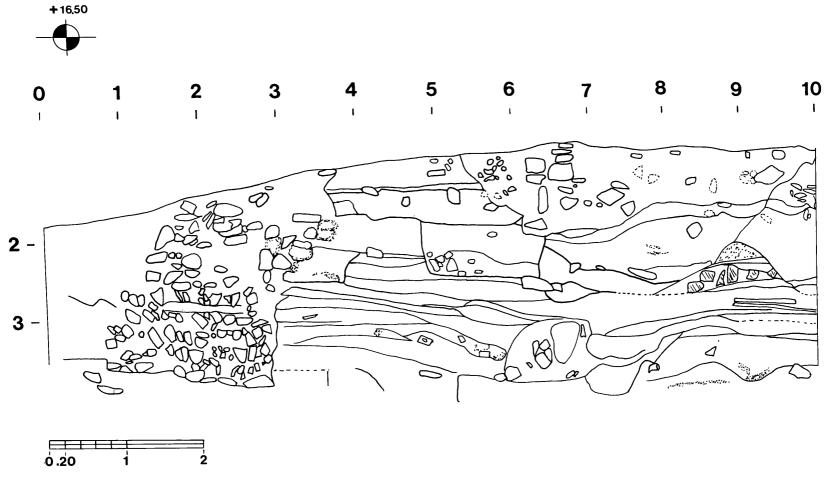
The upper portion of this trench was destroyed by historic building activities, but the earliest sherds indicate that the disturbance cut into strata belonging to the Bronze Age. It would appear that destruction overtook this complex suddenly — for storage jars were discovered in situ filled with some grain.

Some Late Bronze Age ceramics had been uncovered in 1968 and 1969 in Complex A-4 of the Acropolis 7 sounding. They were found lying below a level that was tentatively dated to the Late Hellenistic/Early Roman period (Marchese 1976:394). But once again, the reported ceramics could not be found in the site storerooms and therefore could not be documented by us.

RADIOCARBON SAMPLES

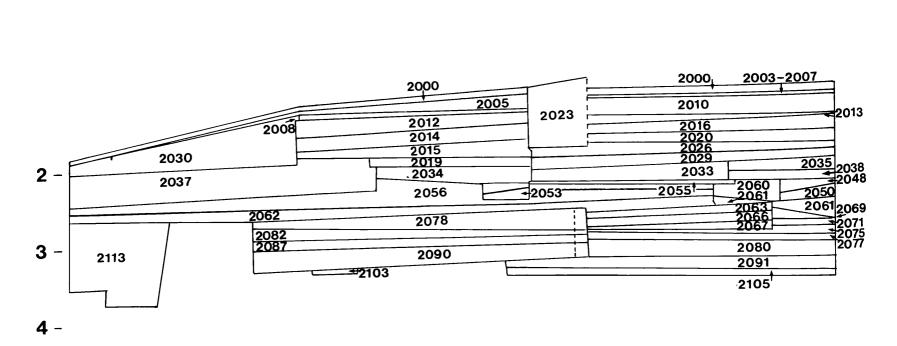
Two samples, P-1644 and P-1656, were collected from Complex A-1. These are reported as « wood charcoal from beam lying between opening through stone of Wall L, Trench 7, Level A-1, Unit 580, at depth -3.79» (Lawn 1971:370). Sample P-1644 received a NaOH-pretreatment « ... sample chosen to be free of rootlets as possible ». Sample P-1656 received « rootlet pretreatment ».

Comment: the results from the rootlet-pretreated sample P-1656 seem reasonable, i.e., « it is slightly older than handsorted sample » (ibid.) The dates of Sample P-1644, pretreated with NaOH, are B.P. 3440 \pm 70 or 1590 \pm 70 B.C. and recalibrated to 1890-1685 B.C. — whereas sample P-1656's results are B.P. 3590 \pm 80 or 1750 \pm 80 B.C. and corrected to 2160-1850 B.C. In calendar years this is a 165-270 year difference between the corrected dates given to these two samples. It must be concluded that samples pretreated make a difference. We do know that NaOH-pretreatment is today no longer used for this very reason — we must reserve judgment on both results.



172. Acropolis trench 8; Profile of E balk (Notebook 35a, p. 117-119).

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2

173. Acropolis trench 8; Units imposed on the E balk (Notebook 35a, p. 7).

ACROPOLIS TRENCH 8

Plan: Figures 174, 176 Photo: Figure 175 Sections: Figures 172-173

Artifacts: Drawings: Figures 488-493; Photo: Figure 487

Site field notebooks: 23, 28, 35a (part), 53

SYNOPSIS: COMPLEX A-4

PHASE	UNITS
Phase III	2179, 2181 (?), 2195, 2200-01, 2204
Phase II	2124-25, 2136, 2138, 2157, 2160, 2164
Phase I	No assigned units

Acropolis Trenches 8 and 9 were laid out in 1971, excavated in that year and part of 1972 under the supervision of Barbara Kadish. Then they were continued through 1972 under the direction of Ronald Marchese who published the results. ¹⁰² The position of these two trenches can be seen on the Acropolis plan, Figure 61, p. 79, as resting to the E or uphill of Trenches 5 and 7 on the Acropolis mound.

Historic structures and terrace walls had been dug down into the early levels of both Acropolis Trenches 8 and 9. The trenches have thus been corrupted, violated by these later building activity practices... but at least they served as protection for parts of the earlier deposits.

Complex A-4

Acropolis Trench 8 is an E extension of Acropolis Trench 7. It measures $10.00 \times 8.00 \,\mathrm{m}$ (N-S E-W). A datum point was established above the $+18.37 \,\mathrm{m}$ contour of Trench 8. All depths were recorded as $+00.00 \,\mathrm{m}$ above the Control Datum located in the orchestra — therefore they are absolute elevations above the datum instead of below or minus a subdatum — accordingly, they are registered as a plus +.

102. Although the field notebook entries for these two trenches were extensive, we were handicapped by the lack of balk drawings and unit assignments given to the prehistoric deposits. Thus the information presented here is based on Marchese's (1976) preliminary report plus the reanalysis of the pottery that we found at the site — pre-sorted and in collection containers that did not have any unit numbers ascribed to them, but were labeled with period (« Late Bronze » and so on) or Trench Phase assignments. When catalogued objects had no numbers ascribed to them, we designated numbers. An attempt was made by written communication to R. Marchese in 1979 to better understand the units and their assignments, but the letter must have gone astray — it was unanswered.

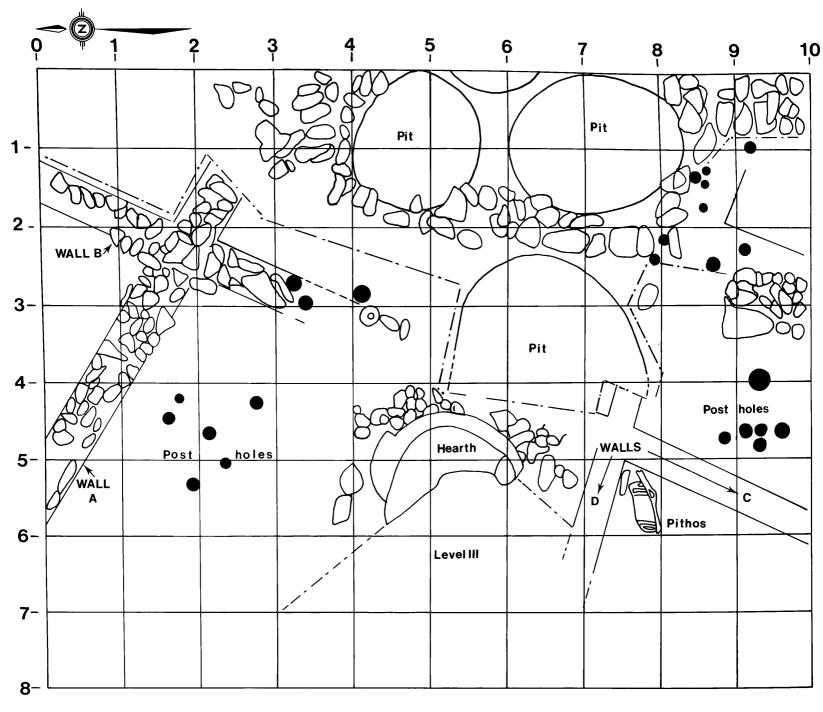
In Acropolis Trench 7, Late Bronze Age material had first appeared in 1971 in the SE area, which measured less than one square m (Marchese 1976:394). At +17.50 m (-0.87 m from the surface), this deposit, which lay directly below Levels IIIB of Late Roman-Byzantine and III-C of the Roman period — became known as Complex A-4 (supra). This material was later noted to carry over into Acropolis Trench 8, where Complex A-4 now contained three distinct phases of buildings, Phases I-III. The stratigraphy for these deposits (Phase III, the earliest, to Phase I) has been published by R. Marchese (1976: ill. 4, 5) and can be seen in this report on Figures 172-176.

The catalogue for Phase II is composed of material only from those units assigned to that phase by the excavator in the preliminary report (*ibid*.). But for Phase III and this report, I have arbitrarily added units 2171 and 2211 to the list of catalogue numbers offered by the excavators — because I thought their artifacts corresponded to the Phase III artifact repertoire. Since no artifacts for Phase I were presented in the preliminary report, I had no catalogue listing to cover this period — but our team did find in the collection containers marked only by phase several artifacts worthy of being documented. These were assigned serial numbers following their phase attribution.

Phase III (Figure 174), the earliest of these deposits, appeared at +14.10 m (ca. -4.27 m below Level III-B). It was unearthed to the W of Phase II and covered an area of ca. 10.00×4.00 m. Four walls — A, B, C, and D — are found composed of mudbrick superstructures (0.40 m in width) resting on firmly packed stone foundations. Wall A, measuring 4.00 m, may possibly have been a continuation of Wall B, perpendicular to it. Located in the SW of the trench, Wall C is bonded to Wall D which measures 2.00 m. On the B-C wall line, a pivot stone associated with a post hole is located. Delimited by Wall D on the S and Wall C to the E, a hard yellow clay floor littered with ash and charcoal forms a room measuring 6.00 × 4.00 m. Its principal feature is the remains of a stone-lined hearth cut into by the later builders of Level III-C of the Roman period. Artifacts of note include crescentic loom weights found near the hearth. The ceramics of this deposit are shown on Figures 487-489. In a small room to the S of Wall D, in the corner, a fragmented pithos is found. To the E of Wall C are located post holes, mudbrick debris and stones at ca. +13.90 m, resting on a red-yellow burnt floor.

Phase II (Figure 174), an excavated area measuring 10.00×4.00 m, is composed of earth fill as well as four pits containing ash, charcoal — and ceramics. These pits measure as large as 2.00×3.30 m to as small as 1.00×0.50 m and are about 0.75 m deep. Three of them cut

0.20



174. Acropolis trench 8: Complex A-4 Phases II and III plan (Notebook 29, p. 3, 4, 67, 81, 85, 91, 93, 95, 99: Notebook 35a, p. 3, 5).

into the loosely packed stone foundation of a structure measuring 5.70×2.90 m. Marchese notes that only a few artifacts are associated with Phases I and II (*ibid.*, p. 401); these can be seen on Figures 490-493 and some of these were published in the preliminary report. Ceramics of Phase II are shown in the photograph on Figure 487.

Phase I, the latest period, was discovered as a redyellow stratum intermixed with fragments of mudbrick. The foundations for this level first appeared at +16.50 (-1.00 m from the surface). Two walls, Wall B perpendicular to Wall C (Figure 176), were laid on irregularly-shaped stone foundations 0.55 m in width. The area enclosed by these walls contains only ash and charcoal, as opposed to the ash, charcoal and mudbrick debris of the area outside the walls. The few artifacts from this phase are shown on Figure 493.

ACROPOLIS TRENCH 9

Plan: Figures 179, 180 Sections: Figure 177 Photos: Figures 178, 181

Artifacts: Drawings: Figures 496-497; Photos: Figures 494-495

Chipped stone: Figure 268

Site field notebooks: 30-33, 35 (part)

SYNOPSIS: COMPLEX A-5

PHASES	UNITS
Phase II	3178, 3187, 3192-97, 3200, 3201-06
Phase I	3164

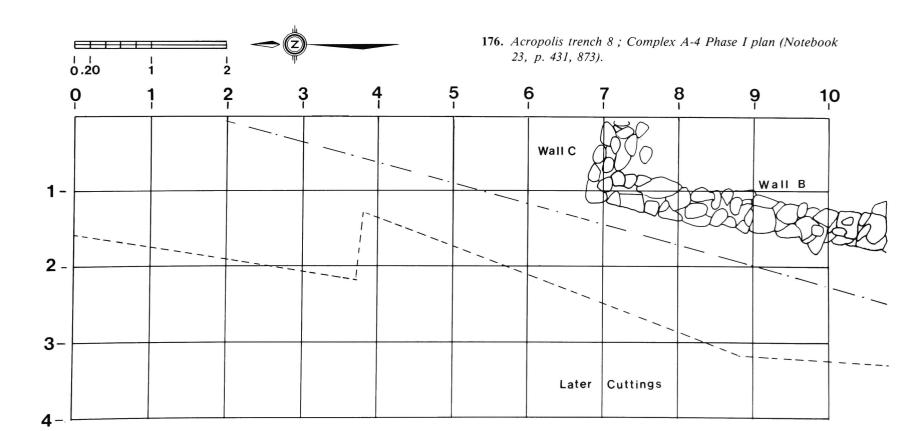
Acropolis Trench 9 lies to the E of Acropolis 5, and S of trench 8. It measures 10×8 m (N-S \times E-W) (Figure 61). Temporary datum points were established above the +18.00 m contour of the Acropolis mound. Deposits are dated to Early Iron Age by the excavator (Marchese 1976:394).

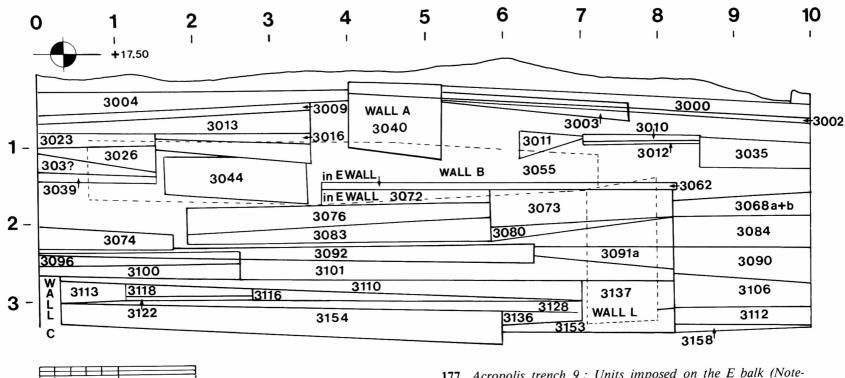
Just below Level IIIB of this trench (ascribed by the excavators to the Ottoman period, notebook no. 21, p. 177) is Complex A-5 with two building phases — *Phase II*, the earlier, and *Phase I*, the later. This deposit is recorded at a +16.50 m depth (-2.00 m below the trench datum).

Phase II was unearthed to depths ranging from +15.75 to +15.10 m (-2.25 m to -2.90 m respective depths); it covers the areal extent of the trench which by



175. Acropolis trench 8; Complex A-4 Phase I Pit and Wall C.





177. Acropolis trench 9; Units imposed on the E balk (Notebook 33, p. 527, 975, 983).

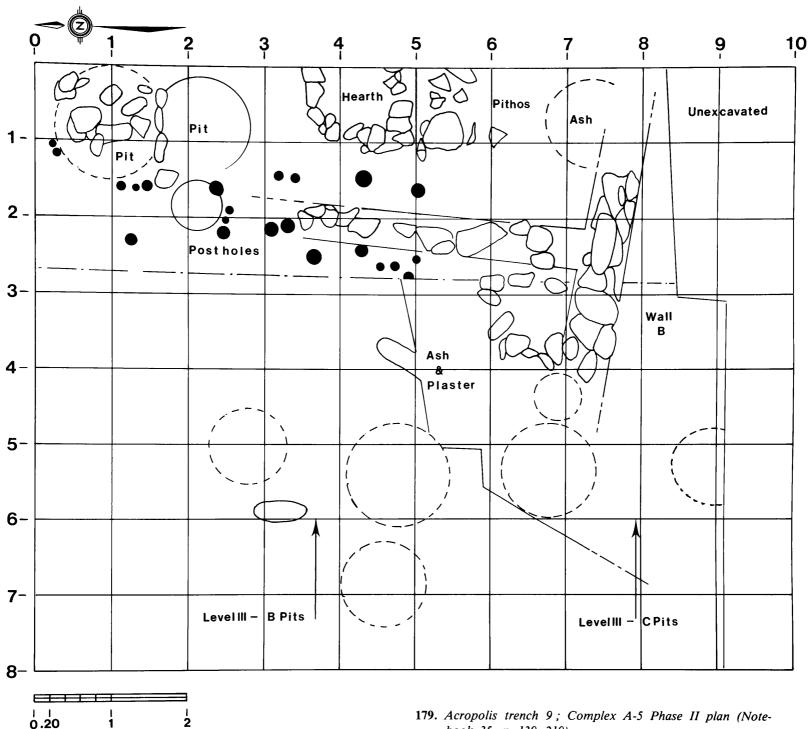
this time has been stepped to measure approximately $8.00 \text{ m} \times 8.00$ -9.00 m. The plan is shown on Figure 179.

Its architecture was discovered in the SE of the sounding - and includes two perpendicular and bonded mudbrick walls, Walls A and B. The foundations of both are composed of irregularly shaped stones. The excavators suggest that Wall A (4.10 m in length \times 0.37 m in width) is an interior wall between two rooms. Wall B, on the other hand, appears to be an exterior house wall, with a width of 0.60 m (length 3.00 m). The stone foundations of both walls lie on a hard-packed reddish yellow floor which exhibits evidence of burning. On both sides of Wall A a series of post holes are noted. To the E of the Wall, lying adjacent to the E trench escarpment, is seen a 1.50 × 1.50 m stone and mudbrick hearth with a large deposit of ash. On the S side of this hearth, pithoi fragments -« red micaceous washed wares » — and a possible crucible are found lying in a deposit of ash and charcoal. At the juncture of Walls A and B is a stone circle, ca. 1.00 m in diameter and containing clay and sand.

In the NE part of the trench are two pits (both ca. 1.45 m in diameter and 1.60-2.00 m in depth) separated by a stone partition. They contain animal remains, pithoi fragments and ash. Just W of the pits is found what is labeled to be a « mould... a hard-packed clay circle with a well-defined sand-impression » (*ibid.*, p. 396). This is 0.63 m in diameter, marked by a depression filled with both charcoal and ash mixed with sandy clay.

178. Acropolis trench 9; Complex A-5 Phase II.





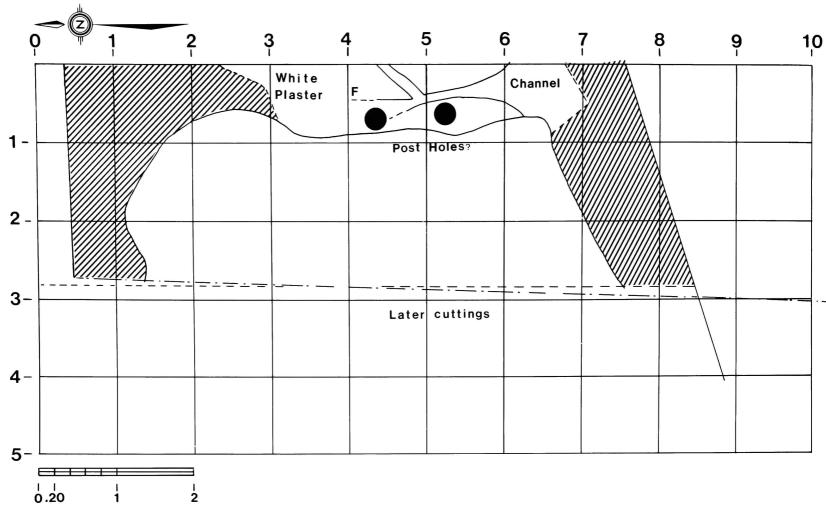
179. Acropolis trench 9; Complex A-5 Phase II plan (Notebook 35, p. 139, 219).

The artifacts recovered form Phase II indicate that it was an area that perhaps served a specialized function: the excavator (Marchese 1976:400) states:

> « a complete absence of spindle whorls was evident, while large numbers of whetstones, hammerstones and burnishing stones, retouched flint cores, and (obsidian) flakes were found throughout the entire area of the trench. »

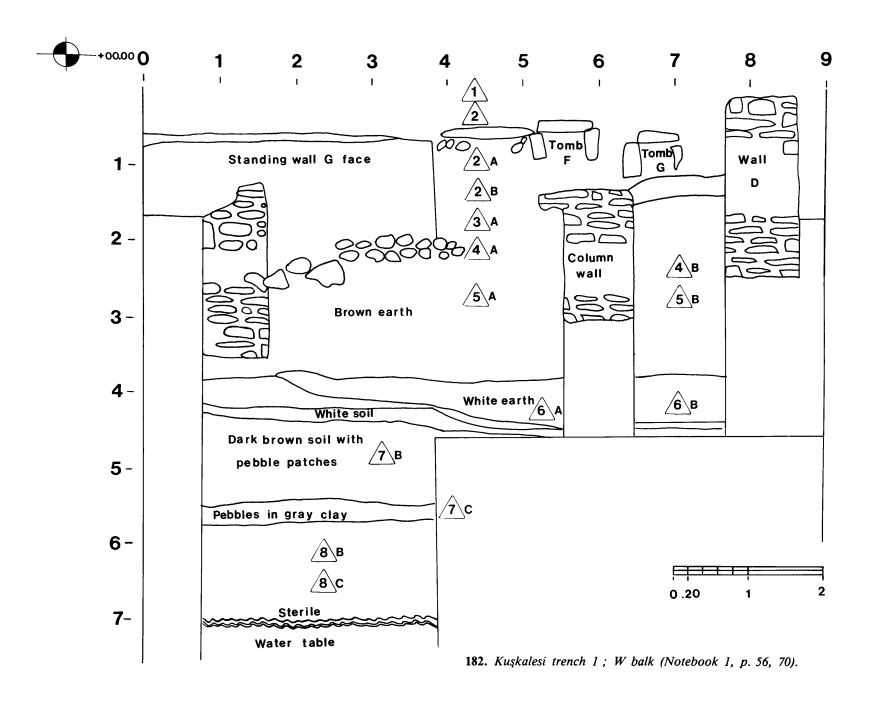
Phase I (Figure 180) covers a 7.25 \times 2.90 m extent in the E part of the sounding. This latest phase is characterized by a 0.85-1.25 m wide curved area. In the center of the trench a surface (?) consisting of a 4.50 \times 0.85 m

area of hard-packed plaster with small amounts of charcoal ash, ca. 0.15 m in thickness, was found to be cut into by a 0.12 m channel and two post holes. Underlying the plaster was a compact pebble foundation. The function of this area eluded the excavators (op. cit., 395), but they hypothesized that it was not specialized as a habitation area. We suggest that perhaps it served as a multi-purpose work area. Plain and some incised spindle whorls, pierced disks, crescentic loom weights and « evenly fired red wares » (ibid.) were found. These deposits were dated to the Early Iron Age (op. cit., 394).



180. Acropolis trench 9; Complex A-5 Phase I plan (Notebook 33, p. 527, 975, 983).





KUŞKALESİ TRENCH 1

Plan: Infant burial: Figure 184 Section: Figures 182, 183

Artifacts: Photos: Figures 498 (pithos), 501

Drawings: Figures 499 (pithos), 500, 502

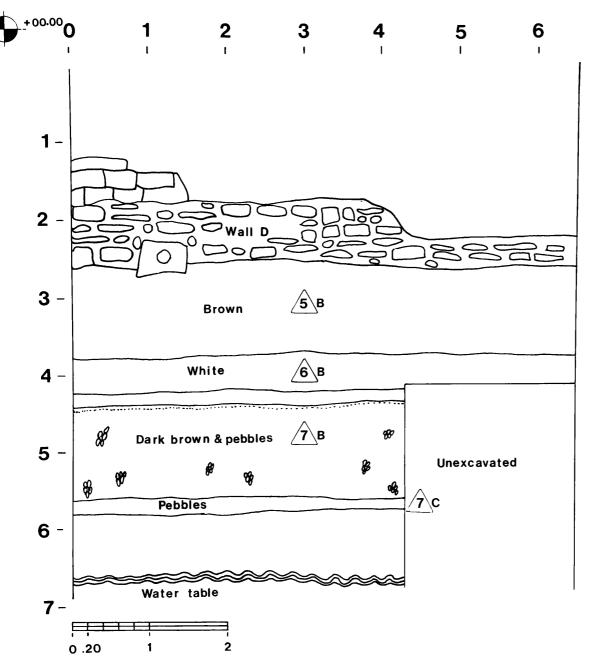
Chipped stone: Figure 269 Site field notebook: 1 Synopsis: Levels 11-9

Level 8, the Pithos burial

Level 7

Trench 1 of Kuşkalesi, « bird tower » as it is known in English, was excavated in 1966 under the supervision

of Stephanie Page. The preliminary report was published by B. Kadish (1969:53). Located to the S-SW of the Acropolis mound, near the *Martyrion* (Figure 5, Area C), the trench was laid out $9.00 \times 6.00 \text{ m}$ N-S, $6.00 \times 6.00 \text{ m}$ E-W — but because of the presence of large stone walls in the historic strata (a Turkish and a Byzantine cemetery), it was restricted to measure approximately 5.50 N-S \times 2.50 m E-W. It is not known what the datum control point was for this trench; it probably was arbitrarily fixed. Section drawings of these deposits are found in Figures 182, 183. No units are assigned — because this trench was excavated before the unit system was put in use.



183. Kuşkalesi trench 1; N balk below Wall D section (Notebook 1, p. 63).

In the field notebook, « excavated » levels were designated 1-11 (sometimes with alphabetic subdivisions), and then they were reassigned as « cultural » levels — of these, the last three are prehistoric, 7-9. But the correspondences between so-called « excavated » and « cultural » are not clearly defined in either the field notebook or the published report. For this reason the catalogued artifacts presented here bear the respective numbers of their original collection containers — i.e., their excavated levels, 1-11 — but the stratigraphy will be discussed as it was presented in the published report: from the earliest to latest of the three prehistoric cultural levels, 9 to 7, plus additional information provided by the field notebooks.

The first to be reached or latest of the three prehistoric strata, Level 7, was uncovered at ca. -4.15 m depth; with a combined depth of ca. -2.60 m, Levels 8 and 9 descend to -6.75. This is followed by a 0.30 m sterile deposit of clay below which the water table is reached. No architecture is associated with these levels.

Level 9, ca. -5.50 to -6.75 m

This was the earliest stratum excavated in Kuşkalesi Trench 1. It lies 0.30 m above the water table. At ca. 0.044 m above this, or at ca. -6.31 m, the earliest defined layer of soil, is composed of a gritty gray clay which then, at ca. -5.50 m, changes in color to a mottled gray-brown-yellow clay.

A wide range of artifacts is found in this 1.25 m deposit. Although the chipped stone industry appears to be impoverished (see Catalogue), there is an obsidian core that we considered of interest. The ceramics (Figure 500) are fine handmade thinwalled, black-slip wares that are highly burnished.

The Pithos Burial

Level 8, ca. -4.75 to -5.50 m

This level is characterized by ca. 0.022 m of round pebbles scattered through a gray clayey soil, followed by a meter of patches of soil with a much heavier concentration of pebbles. At the upper end of this level signs of burning are detected, separating it from Level 7 above.

Of particular note here is a pithos burial — found at a depth of -4.75 m in the NE sector of the S part of the trench. The vessel contained well-preserved infant bones (Figure 184).¹⁰³ (This, under the earlier system, is Level

103. No anthropometric study has been made of these bones.

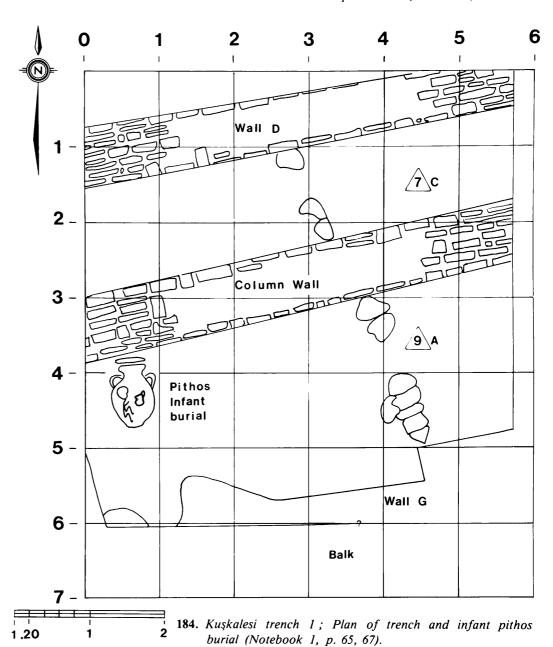
9A in the field notebook and thus remains so in the Catalogue i.e., 9A.3* the catalogue number is given to the fragmented juglet found with the pithos.) The twohandled fragmented pithos (cat. pithos, Figures 498-499) had been inserted in a N-S orientation with the jar mouth facing toward the N. Measuring ca. 0.68 m in height, the buff-colored crumbly ware is unevenly fired. Each of the handles is attached from the base of the neck to the pithos shoulder and each is decorated with three rectangles of incised cross-hatching. Two flat stone slabs, one resting on top of the other, are found close to the mouth of the jar; they had probably served as covers. Within, an infant skeleton is found resting on its left side in a semi-contracted position — the head faced to the E, the top of the skull to the N. The bones are black-stained, presumably by the clayey black soil that fills the jar.

Also in the pithos — in front of the infant's head, with its mouth parallel to the opening of the vessel — is a small round-based, one-handled jug with a cutaway spout (cat. no. 9A.3*, Figures 345, 500.3). Knobs decorate the upper shoulder of this salmon-buff-colored fabric ware.

The jar was broken, the excavator believes, *before* its placement in the pithos because the missing fragments were never found.

The actual level from which the jar burial was inserted is a stratigraphic problem. Was it implanted prior to the build-up of Level 8 debris, or at some time during the accumulation, or at a later time? The pottery style suggests that the pithos was inserted into the debris accumulation, probably by Level 7 inhabitants, but we cannot be sure.

Stone tools were unearthed in this level and, the excavators report, more « ceramics of fine thin, black and gray-colored fabrics, many of them highly burnished ». 104



Level 7, ca. -4.15 to -4.75 m

This stratum is the most recent prehistoric level in the Kuşkalesi Trench. It is characterized by three substrata in a 0.60 m depth; a deposit of dark brown soil... followed by two layers of white soil deposits — the earlier of which is very white.

The excavator mentions that a piece of skull bone with a deliberately incised rectilinear design was unearthed. (We have not found this piece for documentation.) Some of the pottery in this level is wheelmade — burnishing appears to be on the decline and light pink-red colored wares become common.¹⁰⁵

105. In this trench in a later and obviously mixed stratum, Level 3A, was found a typical Late Chalcolithic Bronze Age 1, inverted bowl form of a dark gray ware characteristically black-slipped with a close, evenly effected burnish that attains a glossy luster.

^{104.} From the unpublished report submitted to Dr. K.T. Erim by S. Page 1966:3.

KUŞKALESİ TRENCH 2

Section: Figure 185 Artifacts: Figure 503 Site field notebook: 2 Synopsis: Levels 10-8 Level 7 Level 6

Level 5

Kuşkalesi Trench 2 was excavated in 1967 by Lorraine Williams and Barbara Kadish. A preliminary report of this excavation was published by B. Kadish (1969). The purpose of opening this 9.00×6.00 m trench was to test the possibility of a Bronze Age cemetery in the area; this possibility had been indicated by the pithos burial excavated the previous year in Trench 1.

Some ten levels, the latest yielding Byzantine, Roman and Hellenistic remains, were unearthed. The following discussion presents the prehistoric stratigraphy in reverse order of its excavation.

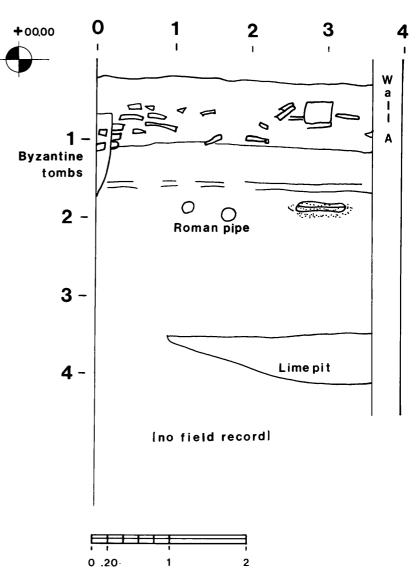
Levels 10 and 9 were not fully documented. In Level 8 (-5.37 to -5.55 m below the trench subdatum), pithos fragments were found; but as the excavators continued to a depth of 5.55 m, fewer pottery sherds were noted and the soil contained pebbles, which may indicate that this deposit was becoming sterile. This was not confirmed. Moreover, Levels 9 and 10 are not clearly defined in the field notebook, but it is assumed that the trench was closed at some point below -5.60 m.

Level 7 (-4.70 to -5.37 m) produced an increase in worked chipped stone, especially in worked quartzite. The only other artifacts mentioned in the field notebook are a large number of air-dried sling pellets which were also associated with this deposit.

In Level 6 (-4.40 to -4.70 m) a partially baked mudbrick fragment, pithos fragments, chipped stone tools, and pottery — including lug fragments and disks were concentrated at a depth of -4.40 m.

In Level 5, a lime slaking pit was reached at ca. -3.80 to -4.30 m. This pit was approximately 16 m long and extended into Trench 1. It separated the overlying classical remains from the three prehistoric levels (7, 8, 9) of Kuskalesi Trench 1.

Only after the artifacts and pottery have undergone further analysis will the stratigraphy be confirmed. However, opposite to expectations, no evidence of a Bronze Age cemetery was unearthed. Few artifacts were catalogued; they are shown in Figure 503; chipped stone is shown in Figure 269.



185. Kuşkalesi trench 2; E balk section (Notebook 2, p. 68).

CHRONOLOGICAL ASSESSMENTS

Introduction

One of the goals of the Aphrodisias prehistoric research project was to formulate an internal chronology for the site. This I have based on studying the stratigraphy of the original excavation, plus focusing on radiocarbon determinations, artifact analysis, architectural techniques including building layout — and the relationship of all these factors to other known sites. Sites with similar cultural processes are important for synchronisms and for a broad based regional perspective of development. It is beyond the scope of this report to test traditional theories of Anatolian chronology which for certain periods and areas remains pretty much terra incognita... even though the establishment of an internal stratigraphy at Aphrodisias will logically aid in these problems. This section is designed only to address the relative and, as far as possible, absolute chronology of Aphrodisias itself. There are, admittedly, gaps in the record... because often the evidence was not there, or the stratigraphy at the site was not always certain. But I soon discovered that the distilled information from this fragmented evidence, plus the systematic presentation of it, began to assume a time dimension of its own.

Here, we turn to the process of synthesis, taking the stratigraphy one step further so that we can better understand the chronology we are attempting to establish. Following is a discussion of the criteria I used to determine the age of the sequential developments of the site. The most obvious factor was that artifacts could be arranged into a sequence based on their stratigraphic relationships — this helped us to produce age determination consistent with a relative scheme. But what is the relationship between artifact evolution and chronology? And what is the length of time needed for the diffusion of ideas as represented by specific ceramic types, specific architectural styles, and other artifacts? Although these questions often have subjective answers, they may provide working hypotheses which can fill certain gaps in our knowledge.

To establish a chronology, only clear textual references, the results of scientific tests, and the occurrence of

certain trade objects can be used. In my work at Aphrodisias, I have had to omit the first because textual references do not yet exist for this area. As to the second, there are indeed a few results of scientific tests... the radiocarbon analysis... although the conclusions are often mixed. Lastly, the only trade objects that can be traced with certainty are obsidian and shell. Therefore, we cannot establish a truly definitive chronology with clear demarcations between each cultural age, but we can try to reconsider our corpus of information in an objective light.

The greatest degree of confidence in any chronological scheme arises from correspondence or agreement among results derived from many independant sources. If results from stratigraphic, seriational, and radiocarbon analyses produce the same sequential arrangement, the chances are good that the arrangement is a fairly accurate one.

Age determinations may be relative and/or absolute. Relative dating correlates the data of each of the trenches to data recovered from other trenches. Absolute dates derived from radiocarbon analysis, place the age of the material on an absolute time scale and assign an age to an artifact or artifact assemblage in terms of years — but so-called absolute methods are seldom precise enough to correlate the generally determined age of an artifact to an exact calendrical date. Instead, most absolute methods assign an age expressed over a time span or range of years.

The traditional chronology of southwestern Anatolia continues to be controversial... and obscured by the lack of excavated material. Reports of what excavations there are have generally avoided securely pinpointing dates, rather they have aligned deposits with « period » designations. Sometime these designations are well-defined cultural units, more often they are not. The western Anatolian region appears to have an independent development which can be separated on the basis of regional distinctions... each area and sometimes even individual sites undergo cultural change at different or individual rates. And while the prehistoric sequence at Aphrodisias can be correlated with specific cultural developments at certain other contemporary sites, on the whole, direct comparisons are lacking for the region.

TABLE 3. ANATOLIAN CHRONOLOGY

Period Approx Date E		oximate B.C.	Troy	Levels Beycesultan	Other Sites
Late Neolithic					
Early Chalcolithic (?)	7000	6000		Hacılar	
Middle Chalcolithic	6000	4500			Kızıbel
					Karaburum
					Boztepe
					Bağbaşi
Late Chalcolithic	4500	3000	_	XL	
Early Bronze I	3000	2800		XIX	Kum Tepe
Early Bronze II	2800	2600	I	XVII	Yortan
Early Bronze IIIA	2600	2300	II	XVI-XIII	
Early Bronze IIIB	2300	1900	III-IV	XII-VIII	
Middle Bronze	1900	1600	\mathbf{V}	VI	Kusura C
			Gap	V burnt palace	
			early VI	IV	
Late Bronze	1600	1200	late VI-VIIa-b	III	
				(?) II	
Iron Age	1200	?			
Lydian	680	546			

Aphrodisias Chronology

The prehistoric excavations at Aphrodisias — that is, the periods before written documents appear at the site can be roughly divided into Late Neolithic (?), Late Chalcolithic, the Early, Middle and Late Bronze Ages, and the Iron Age. All of these periods are included within the scope of this report. Judging from the Hacılar excavations (Levels IX-VI) the Late Neolithic occupies a late mid-sixth millennium date (Mellaart 1970a:10, 17). Level IX, ca. 6800-5750 B.C.; burned Level VI, ca. 5600 B.C... after which there is a gap (Mellink 1971). It is generally accepted that the Chalcolithic begins at some point in the fifth millennium and extends throughout the fourth, that the Early Bronze Age occupies the third millennium, and that the Middle and Late Bronze Ages divide the second. The Iron Age may be dated roughly to the first half of the first millennium. In Anatolia these periods are sometimes arbitrarily divided — the subdivisions of Early, Middle, or Late are based on the presence and types of tools (Childe 1956:23-25, 84), ceramics, and architecture.

The cultures of Aphrodisias, like others in southwestern Anatolia have been derivatively dated to well-established type sites with « reliable » stratigraphic sequences or with known ceramic traditions, i.e., the Late Neolithic/Early Chalcolithic = Late Neolithic/Early Chalcolithic Hacılar; the Late Chalcolithic = Late Chalcolithic Beycesultan Levels XL-XX; and the Bronze Age = Bronze Age Beycesultan which Lloyd and Mellaart (1958:102, 125; 1962:27, 117) have aligned with Troy.

The Iron Age has no type site in the southwest, but for the purpose of this study, the Lydian Period is its terminus at Aphrodisias and can be linked with Sardis.

For the Early and Middle Bronze Ages — in an effort to avoid further confusion by my suggesting yet another chronological system — the approximate equations given by M. Mellink (1965:101-131) will be followed here and throughout this volume, thus tieing the Aphrodisias results to the Central Anatolian and Cilician developments for these periods... even though the stages are geographically removed from the southwest. And though neither sequence is as clear nor as complete as we would wish, we will use them as benchmarks for this analysis.

The Late Neolithic (?)

Neolithic developments in the southwest are far from secure, as Mellink (1965:106) points out. At present, the Late Neolithic representation at Aphrodisias lacks coherence, but we are confident that the ceramics serve as a reasonable basis for constructing our working hypothesis. We reason that there is a direct link between Aphrodisias and Hacılar, Level VII. Because this is the only link between the two sites, and the context of this deposit is mixed, we assign it to the Late Neolithic followed by a question mark in parentheses, i.e., Late Neolithic (?).

Further, the introduction and imposition of black burnished wares characteristic of the Late Chalcolithic indicates there are no excavated remains at Aphrodisias belonging to the Early and Middle Chalcolithic periods. Because these periods are conspicuously absent from the site, the internal chronology suggests there is a gap or hiatus that roughly corresponds to a 1000-year interval.

The Late Chalcolithic

The Late Chalcolithic is subdivided into four stages identified at Beycesultan by Lloyd and Mellaart and known as Late Chalcolithic 1-4 (hereafter L.Ch.1-L.Ch.4). The remains from both Beycesultan and Kum Tepe (located near Troy) are dated to the later Late Chalcolithic-Early Bronze Age I. At Aphrodisias, I have followed the divisions of the Beycesultan sequence. There is, however, some discussion about the dates for the inception of this period in western Anatolia. Lloyd and Mellaart (1962: 112-113) place it at the end of the sixth millennium or at the beginning of the fifth millennium; Eslick (1978:154) dates it to ca. 4500 B.C.; I place its inception at Aphrodisias to ca. 4360 B.C.; and Bartel (1975:135) places it at 3700 B.C. And there is as much agreement concerning the end of the Late Chalcolithic — as there is for the beginning of the next period, the Early Bronze Age.

The Early Bronze Age

The Early Bronze Age in Anatolia has been divided by Mellink (1971:144ff) into E.B.I, E.B.II and E.B.III. E.B. III is further subdivided into E.B.IIIA and E.B.IIIB.

The beginning of E.B.I has been given various dates: 3500 B.C. (French 1968); 3200 ± 100 B.C. (Bartel 1975: 135); 3100 B.C. (Mellaart 1971b:119-137; Blegen et al. 1950; Renfrew 1972:209-210); and Mellink (1965:116) accords it to ca. 3000 B.C. The end of E.B.I is believed to fall between 2800-2700 B.C. (ibid.). E.B.II is dated between 2800-2600 B.C. Troy I and Yortan are both dated to E.B.II (Mellink, 1965). Mellaart (op. cit.) ascribes Beycesultan Level XVII to Troy I, and Easton (1976:145-173) ascribes Troy I to 3400 B.C. The distinction between E.B.II and E.B.IIIA deposits is based on architectural and ceramic changes at Troy... and to a lesser extent at Beycesultan and Poliochni (on the Aegean island of Lemnos) since their ceramic alliances can be related to Troy. Troy I, like its successor Troy II, ends in destruction — as do most other sites at this time throughout Anatolia, including Beycesultan Level XVII.

Troy II and Beycesultan Levels XVI-XIII correspond to E.B.IIIA; the E.B.IIIA devastation of Troy II is dated to 2300-2200 B.C. (Quitta 1978:47ff.). Although the sites of this period are destroyed, the cultural traditions... in Troy, at least... continue into E.B.IIIB. At

Beycesultan, however, there is a cultural break between E.B.IIIA (Levels XVI-XIII) and E.B.IIIB (Levels XII-VIII).

Troy III-V and Beycesultan XII-VIII are ascribed to E.B.IIIB. Troy V begins at some point in E.B.IIIB and ends sometime in the Middle Bronze Age. Thus, the Early Bronze culture of Troy III-IV moves without a break into the Middle Bronze Age or Level V.

Therefore suggested B.C. dates range between ca. 3500-2800 for the flourit of E.B.I; ca. 2800-2600 B.C. for E.B.II; ca. 2600 to 2300 B.C. for E.B.IIIA; and between ca. 2300 to 1900 B.C. for E.B.IIIB. There has been some disagreement over the « Bronze Age clock ». Still open to question is when each of the Bronze Age periods ended and when the next began. But whether or not the above is accurate is not the question here. At Aphrodisias, for the assignment of the remains to specific periods, I was cautious and defined the stages as Bronze Ages 1-4, which I then aligned to Mellink's Anatolian scheme (1965) of Early Bronze ages I, II, IIIA, IIIB (Table 3).

The Middle Bronze Age

Based on the ceramic evidence at Aphrodisias, I, too, have come to the conclusion that the Early Bronze IIIB period continues into the Middle Bronze Age without a discernable break. M. Mellink (1965:121) states that the thread of historical correlation is lost in western Anatolia during this period. Although I assume that continuity exists between E.B.IIIB and M.B., I am not sure of either this period's duration or its specific development. From the Early Bronze Age evidence at Aphrodisias many problems have arisen in dividing the sequence of deposits along traditional lines. D. Trump (1980:116) comments:

« Once again, the arbitrary nature of the archaeological labels must be stressed. There seems less difference between the Chalcolithic and Early Bronze Age I back in the fourth millennium, or between the Early Bronze Age III and the Middle Bronze Age around 2000 B.C., than there is between Early Bronze Age II and Early Bronze Age III, traditionally placed around 2300. That point is central to the history of that period. »

The Middle Bronze Age ends, after a gap between Troy V and VI, with the earlier deposits of Troy VI; with Beycesultan's burnt palace in Level V and later Level IV; and with the Kusura Level C. Thus the Middle Bronze Age begins ca. 2000/1900 B.C. and ends ca. 1600 B.C. — the date traditionally assigned to the beginning of the Late Bronze Age.

The Late Bronze Age

The Late Bronze Age sites in Western Anatolia that are located near the Aegean coast have Minoan and Mycenaean ceramic correlations — which, though less precise than Hittite documentary evidence in Central and Eastern Anatolia, provide some important chronological synchronisms. Troy VI reflects strong Mycenaean contacts by its well-stratified ceramics. Miletus and Iasos also have remains that can be indirectly dated to the Mycenaean sequence — all of which shows the strength of the trade connections around the Aegean during this period of wide international commerce.

Unfortunately, these Late Bronze Age influences provide us with little help for Aphrodisias. At this time the records of stratified archaeological sites for the Upper Maeander Valley are all but empty. The settlement at Kusura does not continue after the Middle Bronze. And at Beycesultan the archaeological record is incomplete; however, among its disturbed deposits a fragment of a Mycenaean stirrup jar, dated ca. 1360-1240 B.C. (Mellaart 1970c:83), was discovered in later Level IIID. In the Aphrodisias region, D. French (1965:75) surveyed one site at Nazilli (Figure 11), plus in Appendix 1 there are ceramics from sites that parallel those from Aphrodisias. This survey may prove helpful to future excavators for determining possible Aphrodisias-Maeander Valley-coastal linkages.

In 1976 at Aphrodisias, E. French personally examined the Late Bronze pottery of Acropolis Trench 8, and expressed surprise at the absence of Mycenaean ceramics. This lack of comparative material would indicate the site's independence from coastal influence during this period... or if these influences did exist, they have not yet been excavated. The complexities of these questions need further study. For now it appears that the Late Bronze Age habitation at Aphrodisias was culturally limited to the site's independent development, in comparison to the preceding periods of the Bronze Age — that its development during this period appears to have been virtually isolated from Mycenaean or Aegean contact.

Thus, for this region we can only look to Beycesultan... but it too, except for that one Mycenaean stirrup jar fragment, seems largely to have had an independent development. For the Upper Maeander there appears to have been separate lines of growth from that of the coast. This regionalism may have been a creation of the Valley, but we won't know for sure until firm external connections can be established. We tentatively hypothesize that Aphrodisias and Beycesultan share a common culture in the Late Bronze Age... since much of their pottery can be correlated. Unfortunately, the fragmen-

tary nature of the material from these two excavations does not provide enough evidence to secure even *their* relationship during this period. We are, therefore, compelled to echo Jewell's (1974:112) hopes for future discoveries at our site:

« ... continued careful excavations of the prehistoric levels at Aphrodisias could establish the validity of the Beycesultan stratigraphy in addition to serving as a regional bridge between the partly known area around Beycesultan and unknown second millennium occupation of the Lower Maeander. »

To sum up, the Late Bronze Age begins about 1600 B.C. and ends approximately 1200 B.C... according to textual references from Egyptian sources (ANET 262ff.). This end is marked with extensive movements by the Peoples of the Sea. Ramses III in 1188 B.C. attempted to check the movement of these peoples, and on the walls of the Medinet Habu temple at Thebes it is written:

« ... No land could stand before their arms, from Hatti, [The Hittite Empire], Kode, [The coast of Cilicia and North Syria], Carchemish, Arzawa [thought to be a power in southwestern Anatolia with a possible capital at Beycesultan], and Alashiya [Cyprus]. »

The Iron Age

The Iron Age extends from the 1200 B.C. terminus of the Late Bronze Age to some point early in the first millennium. It is not clear if there is a gap between the Late Bronze Age deposits and those of the Iron Age. We suspect that at Aphrodisias a hiatus may have existed, but about this we cannot be sure.

There has been little agreement on the length of this period ... and it is difficult to define it as there is no type site for the upper Maeander valley. I have used « Iron Age » loosely to include the ceramic deposits of Acropolis Trench 9, as well as those of Lydian origin in Acropolis Trench 6. This is not to imply that the Iron Age deposits in Trench 9 continue without a break into the period represented by the Lydian-influenced wares, dated to the seventh or sixth centuries B.C. — or to some point between 680 B.C. when the Lydian capital was established at Sardis and 546 B.C. when the city was overtaken by the Persians.

Perhaps now that a clearer picture of the nature and sequence of the early cultures of Aphrodisias is emerging, the site can begin to take its rightful place in the earliest history of Turkey. And it is hoped that in the next few years many of the problems will be resolved by further excavation, so that the relationship of sites in this area can be better determined.

In order to present this section in a comprehensive manner, I have divided it into the separate factors which influence prehistoric chronology. These include radiocarbon determinations, and then a cross-trench analysis of the stratigraphy. Lastly, all the evidence is brought together so that an estimated chronological scheme for prehistoric Aphrodisias can be proposed.

Radiocarbon Results

Keeping in mind that all archaeological chronologies even when termed « absolute » are usually relative, I will briefly discuss a tentative guide, a matrix for a time sequence — based on radiocarbon and recalibrated B.C. calendar years — into which the deposits at Aphrodisias can be placed.

TABLE 4. APHRODISIAS RADIOCARBON DATES

Laboratory Reference	Complex Unit	Depth	Specimen	B.P		Half-Life B.C.	5730 Half-Life B.C.	Calibrated Dates 1 δ ***
Pekmez trench 2								
P-2029	1598d*+	— 6.55	Charcoal +	5450	± 80	3500	3660 ± 80	4430 - 4110 B.C.
P-2030	1598d*+	-6.55	Charcoal	4860	± 80	2910	3050 ± 80	3800 - 3520 B.C.
P-2031	1599a,b	— 7.97	Charcoal	5280	± 70	3330	3490 ± 80	4160 - 3900 B.C.
P-1655	Level VII		Charcoal	2250	± 60	300	370 ± 60	410 - 360 B.C.
Acropolis trench 3								
P-1649 II	224	— 6.81	Seeds	3560	± 60	1610	1720 ± 60	2035 - 1855 B.C.
P-1648	Level VIIA	— 5.76	Charcoal +	3540		1590	1700 ± 60	1995 1765 B.C
P-1650 II	227	 6.88	Seeds	3720	± 60	1770	1880 ± 60	2310 - 1995 B.C
P-1651 II	221	— 7.15	Charcoal	3860	± 60	1910	2020 ± 70	2420 - 2290 B.C.
P-1774 II	228	— 7.23	Charcoal	3800	± 60	1850	1960 ± 70	2405 2115 B.C
P-1775 II	228	— 7.23	Charcoal +	3800	± 50	1850	1970 ± 60	2405 2155 B.C
P-1653 IV	267	<u> </u>	Charcoal +	3620	± 60	1670	1780 ± 60	2155 1890 B.C.
Acropolis trench 4								
P-1652 II	343	 6.94	Charcoal	3990	± 60	2040	2160 ± 60	2650 - 2520 B.C
P-1654 IV	348	— 7.39	Charcoal +	3940	± 90	1990	2110 ± 90	2645 - 2310 B.C
Acropolis trench 5								
P-1645 B	464	— 3.48	Charcoal +	3340	± 60	1390	1490 ± 60	1750 1575 B.C
P-1646 C	487	?	Charcoal	3410	± 70	1460	1570 ± 70	1875 1670 B.C
P-1647 C	494	<u>- 4.44</u>	Charcoal +	3670	± 70	1720	1830 ± 70	2185 - 1950 B.C
Acropolis trench 7								
P-1644 A-I	580	— 3.79	Charcoal +	3440	± 70	1490	1590 ± 70	1890 - 1685 B.C
P-1656 A-I	580	— 3.79	Charcoal**	3590		1640	1750 ± 80	2160 - 1850 B.C

The above dates were received from B. Lawn, dated 3/15/83.

^{*+} Note the change in digits; this unit was originally published as 1589d.

⁺ Sample NaOH pretreated.

^{**} Portion of P-1644 that received rootlet pretreatment.

^{***} Calibrated dates refer to dates calibrated by using published tables. See the article by J. Klein et al. (1982), Calibration of Radiocarbon Dates: Tables based on the Consensus data of the workshop on calibrating the Radiocarbon Timescale, in Radiocarbon, V. 24, No. 2, p. 103-150. The dates that appear here are further calibrated using tables that have produced 1 \u03c3 uncertainties by J. Klein, unpublished). B. Lawn has used the same data base and statistical methods as found in Klein et al., supra.

Radiocarbon analysis, developed by W.F. Libby in the late 1940's, has revolutionized archaeological age determination. Originally its invention was met by a great wave of enthusiasm that led to uncritical acceptance and overconfidence in the precision of the most popular method of all dating techniques. Notwithstanding the problems, the evidence is clear that radiocarbon research can be of substantial assistance in helping us to set up a chronology. Of course, there is always the risk that some of the Aphrodisias dates may be changed with future refinements of the process. At present the drawbacks of radiocarbon analysis are serious and should be kept in mind when assessing these dates.

Carbonized remains found at various levels during the Aphrodisias excavations were sent to the Radiocarbon Laboratory, Department of Physics of the University of Pennsylvania. Eighteen samples were studied, the dates worked out, and originally published by B. Lawn in Radiocarbon 13 and 17 (1971, 1975, respectively). A correction for one specimen's date, P-2029, is found in Radiocarbon 19 (1977, p. 225). The results on Table 4, the most recent corrected calibrated dates for the Aphrodisias deposits, are presented by trench attribution. Dates are given in radiocarbon years according to the Libby Half-Life of 5568 years B.C... along with the corrected Half-Life of 5730 B.C., plus their newly calibrated dates listed in years B.C. Acknowledgement is due to B. Lawn of the University of Pennsylvania Museum Applied Science Center for Archaeology and Department of Physics for the present ordering of these earlier published dates.

The earliest radiocarbon date at the site — from charcoal sample P-2029 of Pekmez Trench 2, Level VIIIA — falls between ca. 4430-4110 B.C. — which indicates that the Late Chalcolithic was well established at Aphrodisias by the last half of the fifth millennium. But sample P-2031, from a slightly earlier deposit in this trench - Level VIIIB which is 1.42 m below the elevation where P-2029 was collected — has a date 270-210 years after, or 4160-3900 B.C. And sample P-2030, also from Level VIIIA, is dated to 3800-3520 B.C.! Thus for two samples within the same deposit of VIIIA there is a 630-950 date difference. Notwithstanding these obvious radiocarbon problems, all three dates fall within an acceptable range for the Late Chalcolithic period. Lastly from Pekmez Trench 2, the « mixed sample » P-1655 from Level VII, the wall-system level, is meaningful only insofar as it indicates the disturbance in this trench the date is actually reported as 410-360 B.C. It is most unfortunate we don't have a more reliable date for this deposit for it would unquestionably be a datable link between the Late Chalcolithic and the Early Bronze Ages

in the Aphrodisias chronology. The remaining and later dates have been taken from the Acropolis mound, Trenches 3-5 and 7.

Trench 4 gives the highest date we have for the Acropolis: sample P-1652, from unit 343, at the base of Complex II. Its date is 2650-2520 B.C... ca. 230 years earlier than sample P-1651 of Acropolis Trench 3 and its corresponding Complex II, Room 2, with a reading of 2420-2290 B.C. Another problem in Trench 4 is sample P-1654 from the debris of Complex IV, which is dated to 2645-2310 B.C... only ca. five years different and younger than sample P-1652 which is stratigraphically later in Complex II.

In Acropolis Trench 3, from unit 228, samples P-1174 and P-1775 — both from the hearth in Complex II, Room 2 — date from 2405 to 2155 B.C. It is interesting that one of these samples was pretreated, the other was not — yet in this instance both results are the same. Also found in Complex II but from Room 1, a seed sample P-1650 has been dated slightly later to 2310-1995 B.C. But sample P-1653 in earlier Complex IV of this trench has a later range of dates... from 2155 to 1890 B.C. than the above three samples from Complex II. This sample from Complex IV lay in a lens that was recorded from -7.83 to -7.97 m, stratigraphically much earlier than Complex II — yet it has a range of some 250 to 400 years later. The aforementioned sample P-1651 from Complex II lay 0.78-0.82 m above it at -7.15 m — but it is dated as early as 2420-2290 B.C. Also in Complex II, P-1649 is dated to 2035-1855 B.C. However, the range of these dates from these two samples do fit in with the other dates analyzed from Complex II, indicating that its deposits can be associated to a range ca. 2400-1900 B.C., or being continuously reused over a 600-year span. All but two of the aforementioned samples are from charcoal deposits - so their dates may be younger than those of the two seed samples, P-1650 and P-1649 from Trench 3 Complex II.

In Acropolis Trench 5 at the lowest extent of Complex C (which lies stratigraphically above all the complexes discussed in trenches 3 and 4) is sample P-1647, dated from 2185 to 1950 B.C. This area can be related to Level 7A in Acropolis Trench 3 — which lies directly above Complex II in that trench; sample P-1648 was collected in Level 7A and its date of 1995-1765 B.C. correlates with the Trench 5 Complex C sample P-1646 that has a date of 1875-1670 B.C. Another sample from Acropolis Trench 5 that aligns well with the progression of the stratigraphy is P-1645; it was taken from above Complex C on the floor of Complex B, and is dated to 1750-1575 B.C.

In Acropolis Trench 7, the remaining two samples... from unit 580 above Complex A-1... pose other problems. They are both taken from the same charcoal deposit yet have a difference in range of 165-270 years. Both samples were pretreated in the field: P-1656, dated to 2160-1850 B.C., received rootlet pretreatment... and P-1644, dated to 1890-1686 B.C., was NaOH-pretreated (see p. 147). Despite the differences both sets of dates appear to fit in well with our chronological assessment of this deposit — the later buildings of Acropolis Trench 7 were assigned to the Middle Bronze Age, based on ceramic evidence.

Cross-trench Analysis

From the very beginning of my research at the site, it was clear that it would be difficult to establish the stratigraphy. One of the reasons was that foundations of later buildings had been sunk into earlier strata, thus causing considerable confusion. And because of the rise in the water table, sterile soil or bedrock was not reached; hence the site probably has an earlier antiquity than we now suspect. And differences between strata were difficult to correlate... because of the varying settlement patterns of the Acropolis, Kuşkalesi and Pekmez areas of excavation. For example, remains of the Middle Bronze Age on the Acropolis mound are at a higher elevation than are those of the later Lydian deposits on the same mound. After examination, it was obvious that the differences among the three excavation areas indicated that deposits at the same elevation were not necessarily of the same date. We realized that the distinctions among these deposits would have to be ascertained before any correspondences could be made.

Further, on the Pekmez mound, nearly 5.00 m of the remains of the Late Chalcolithic settlement came to light, whereas the Acropolis mound had concentrated deposits of the Bronze Ages only. The absence of settlement strata belonging to certain periods strongly suggests that the areas in question were not inhabited at that time, or that remains were leveled off and removed in the course of later reconstruction... or, another possibility, that they simply have not as yet been excavated. Thus only some of the problems could be resolved in the stratigraphic sequence — particularly questionable was the transition from one stratum to the next.

Thanks to the distributional sequence of pottery styles plus the series of radiocarbon determinations, I was able to establish a rough depositional framework.

And also on stratigraphic and architectural grounds, there are indeed major phases in this excavation that can be analyzed — in local terms as well as linked with material from other contemporary sites.

In presenting this cross-trench analysis, we will follow the natural chronological order — the Late Neolithic (?), Late Chalcolithic (subdivided into L.Ch.1-4 according to Mellaart), the Early Bronze Age (which I have subdivided into Bronze Ages 1, 2, 3 and 4), Bronze Age 4 Middle Bronze (Mixed), the Middle Bronze Age, Late Bronze and Iron Ages.

The Late Neolithic (?)

The first deposit, the Late Neolithic (?) Level VIIIC of Pekmez Trench 2, appears to have been a sporadic occupation evidenced by soil discolorations and relatively few artifacts. The deposit is limited... in depth and in area because the test trench was so confined, limited because of telescoping of deposits and intermixing with Late Chalcolithic pottery. There may have been some disruption at the end of this level, or the site may have been abandoned. Although we assume there was an occupational break, a gap, between VIIIC and the one above it, VIIIB, the stratigraphic picture is unclear. We know neither the extent nor the duration of this early settlement and there is even a lack of evidence as to what brought about its end.

The earliest ceramics unearthed at the site are comparable to Hacılar VII-type wares, dated to ca. 5800 B.C. (Yet, as mentioned previously, I refer to it as Late Neolithic followed by a question mark.) The thin section laboratory analysis by R. Coghlan (Part 4) proves that the Aphrodisias ceramic samples examined from this deposit are similar to and can indeed be compared to the Neolithic Hacılar VII-type wares — but unfortunately, there are no other cultural affinities. As no radiocarbon samples were collected for this phase, it is difficult to determine securely where it fits in with the Hacılar material. The pottery in *Level VIIIC* is the only evidence we have for this period — therefore it is vital, as it provides the one direct link to the Hacılar horizon.

The occupation of Pekmez Trench 2, units 1599d and 1599e of Level VIIIC, has its terminus post quem and its terminus ante quem contained within the same deposit. The earliest date that can be fixed with any degree of certainty is dependent upon the Level VII Hacılar wares which have been radiocarbon dated to 5820 ± 180 (Sample BM-125 in Mellaart 1975:286; this

date is based on a Libby Half-Life of 5568 years. 106 Aphrodisias was clearly in use at this time... but its foundation date still eludes us... and may be earlier than we can at present hypothesize.

It should be noted that no typical painted Hacılar wares were found in these deposits... although the pottery that K.T. Erim mentions in this preliminary report (see p. 56) was indeed said to be red-on-white. But this material has to be located, and assessed, before further conclusions can be drawn.

The Aphrodisias Gap

The Neolithic Hacılar VII-type settlement at our site, if indeed there was one, must have soon disappeared... for there are no traces of later settlements corresponding to Hacılar Levels VI-I. What the causes were for this disappearance at the end of Level VIIIC in Pekmez Trench 2 ... and the cultural gap between this level and the Late Chalcolithic Level VIIIB is still not known. All we do know is that at the end of the Late Neolithic (?) occupation, Pekmez appears to have been abandoned, for ca. 1000 years.

Was Aphrodisias occupied at all during this period? It seems certain from the lack of evidence in Trench 2 on Pekmez there was no human habitation at this time — but was there a settlement elsewhere on the site? So far, no trace of any occupation of either the Early or Middle Chalcolithic periods has been found. Although it is an argument *ex silentio*, it appears unlikely there was a settlement. Had the size of the excavated area been larger, more information would possibly have been derived about the Pekmez beginnings... and its end. There was no evidence of a massive destruction between *Levels VIIIC* and *VIIIB*, but in so confined an area this is not decisive.

This culture gap at Aphrodisias is further demonstrated by the analysis of the two pottery sequences from the Late Neolithic (?) and Late Chalcolithic levels — which verifies that the later tradition could not have developed out of the earlier. They each have distinctive ware-fabrics, methods of manufacture, and a complex of shapes and decoration techniques.

At Hacılar, the culture of Levels IX-VII continue through Level VI. After the burned destruction of this last settlement of the Late Neolithic, perhaps after an interval, comes a resettling... an *Early Chalcolithic* habitation of Levels V-II.

106. The corrected Libby Half-Life of 5730 B.C. places this Hacılar sample into an even earlier time slot. At the very end of the Early Chalcolithic, in Hacilar I, Mellaart (1970a:145f.) sees a small transition which is due, he theorizes, to the resettlement of the site by a southwestern folk... who may have even come from another part of the Hacilar site itself, because of the common ancestry of some of the wares. The end of Hacilar I is dated to ca. 5000 B.C.

The Middle Chalcolithic (?)

Following the destruction of Hacılar I, there is a cultural progression which to date has been found only in the Elmalı Plain (not far from Aphrodisias and Hacılar). At Aphrodisias, we theorize, there continues the approximate 1000-year gap; throughout much of the Anatolian southwest the gap seems to have lasted for ca. 500 years. But this has been disputed by Mellaart (infra).

In Elmali, there is one southwestern pottery sequence that falls within the Middle Chalcolithic period — well-documented by C. Eslick (1978, 1980). Eslick makes her findings contemporary with the Aegean Middle Neolithic — to Saliagos and to the lowest levels at Emborio (Renfrew 1972:72-76). This implies a cultural connection between the Anatolian southwest and the Aegean during this period (the Aegean Middle Neolithic is contemporary with the Anatolian Middle Chalcolithic). Whether or not Eslick's Middle Chalcolithic culture is more extensive than just the Elmali Plain will have to be examined in the light of still unexcavated materials in the southwest.

The Late Chalcolithic is recognizable in the newly founded villages like Beycesultan and Aphrodisias and throughout the southwest... by black-slipped, white-painted pottery... which manifests a profound culture change. Mellaart (Lloyd and Mellaart 1962:106, 112, and CAH I, 1, 326) explains this change — by stating that sometime after the end of the Early Chalcolithic, after the destruction of Hacılar I, there was an influx of new people. He rules out their coming from the south or east, but suggests that they may have come from the north or northwest (1962:106).

Debate over this progression of events, and also possible linkage between earlier Hacılar Level I and Late Chalcolithic Beycesultan Level XL has been discussed among scholars. Mellaart sees a link existing between Hacılar I and Beycesultan XL, but Eslick (1978:156ff.) takes the position there is no link between the two cultures — that the Beycesultan stratigraphic sequence has no connection with the earlier developments of Hacılar. Mellaart considers the ceramics found in the lowest levels

of Beycesultan to be associated with Hacılar wares, but this has been disputed also by Mellink (1965:109).¹⁰⁷ Mellaart (Lloyd and Mellaart 1962:106) postulates:

« Although the sequence Hacılar-Beycesultan Late Chalcolithic I has not been confirmed by excavation... it can be regarded as almost certain. »

At this time no clear alignment or relationship between Chalcolithic Hacılar I and Late Chalcolithic Beycesultan horizons can be securely demonstrated. We can only hope there are other sites in the southwest, in the Upper Maeander in particular, as yet unidentified, that can be found with Hacılar I Beycesultan XL transitional phases.

At Aphrodisias, this question of culture gap cannot be resolved because the Hacılar and Beycesultan horizons are stratigraphically confused — Late Chalcolithic ceramics were intermixed with those I have ascribed to Late Neolithic Hacılar VII. Thus there is no stratigraphic gap between the Late Neolithic (?) and Late Chalcolithic deposits but a 1000-year chronological one.

The Late Chalcolithic 108

At this time numerous settlements were founded in the Anatolian southwest. Since no destruction levels have been discovered at any of these sites, we assume that the arrival of the newcomers was peaceful. It is clear that

107. It is clear that neither Hacılar I or Beycesultan L.Ch. form a complete sequence. The Late Neolithic dates have not been accurately aligned with the calibrated Late Chalcolithic dates. Therefore there must be a substantial gap between the end of the Early Chalcolithic at Hacılar and the Late Chalcolithic. It is agreed that the situation at Aphrodisias presents us with an uncertain situation. It is often true that decisions like this must be made in unique archaeological situations. This particular decision was dependent on a preference order of some of the potential implications involving the Aphrodisias deposit. The possible outcomes are basically two: that this is a transition Late Neolithic, pre-Late Chalcolithic stratum with no break — or that this is a stratum that is independent of the Late Chalcolithic. We have opted for the latter outcome based on the pottery analysis. The connection between the stratigraphy and the ceramics and the site is extremely important for the theory of the site, but in this case, the ceramic preferences have strongly outweighed the stratigraphic considerations, for the stratigraphy is confused and the area under excavation was confined to less than 2.00 m square.

108. In our analysis of the Late Chalcolithic, we have added Level VII and have subdivided Level VIII into Levels VIIIA, VIIIB and VIIIC. Because it is not wise to define cultural levels until the chronology of the site has been firmly established and the excavation has hit bedrock or sterile soil, we have chosen to designate the earliest deposit, VIIIC, Late Neolithic (?). If the prehistoric areas of the site are re-excavated and earlier deposits of the Chalcolithic are recovered at a later date, this designation can be changed to correspond to whatever earlier deposits there are.

Aphrodisias shares in the Late Chalcolithic pottery horizon of Beycesultan — its development indicated by the massive influx of black-slipped wares with white-painted decoration along with a new repertoire of shapes.

In Pekmez Trench 2 Level VIIIB evidence is seen for this apparent resettlement of Aphrodisias — by a people who dug into and disturbed the earlier material of VIIIC. Based on radiocarbon analysis, the date of this Late Chalcolithic 1 deposit in Level VIIIB can be placed ca. 4360 B.C. The stratigraphy suggests these deposits were telescoped into those of the Late Neolithic (?) VIIIC.

The first period to be extensively represented at Aphrodisias, to give real evidence of settled village life, is this Late Chalcolithic 1 of Levels VIIIB and VIIIA. The depth of deposit of these two levels is approximately 5.00 m — of fallen bricks, ash deposits, and artifacts. Although no coherent building remains were found, the large quantity of sherds and domestic implements testify to the occupation of the site during this period... and the continued multiplicity of artifacts throughout succeeding levels in Pekmez Trench 2 signify occupation throughout the Late Chalcolithic and Early Bronze Age I.

The Late Chalcolithic 1 area ostensibly represents a domestic complex, but its traffic patterns are unclear. Typical black-slipped, white-painted, flared and burnished bowl forms are contemporary to, if not preceding, the early Late Chalcolithic 1 shapes at Beycesultan Level XL. The Aphrodisias Level VIIIB may have been settled prior to Beycesultan Level XL — since the earliest Late Chalcolithic ceramics in Level VIIIB exhibit some differences that include flared, rolled rimmed shapes not included in the Beycesultan L.Ch.1 repertoire (Joukowsky 1982:756f.). Thereafter the Late Chalcolithic 2-4 pottery sequence, in Levels VIID-VII of Pekmez Trench 2, is roughly parallel to that of Beycesultan Levels XXXIV-XX.

Late Chalcolithic 2 in *Level VIID* is marked by the construction of a wall system... of mudbrick laid without stone foundations (Figures 20, 37, 46, 47). But no architectural remains can be definitely ascribed to Late Chalcolithic 3-4.

As for Pekmez Trench 1, nothing has as yet been discovered that can be definitely dated this early. But it is quite possible that its lowest stratum, *Level X*, contains some Late Chalcolithic 3-4 ceramic types indistinguishably intermixed with Bronze Age 1.¹⁰⁹

The Early Bronze Age

As mentioned, the traditional Early Bronze II, IIIA and IIIB periods have been subdivided by us into Aphrodisias Bronze Age 1, Bronze Age 2, Bronze Age 3, Bronze Age 4, and Bronze Age 4 Middle Bronze, because at our site the distinctions are not always clear... and specific traditional period divisions are difficult to apply. This is all the more so on the Acropolis mound because of pit disturbances throughout the deposits. The excavators mention that many of these pits seem to have been dug from the levels lying immediately above. And while the accumulations throughout the strata of ash and mubdrick debris do suggest continued use, it is not certain if the ash deposits are the result of a major destruction, or merely of localized fires.

The Aphrodisias Bronze Age 1 (E.B.I-II) follows the Late Chalcolithic 4 period almost imperceptibly, for there is no cultural break... either at Aphrodisias in Pekmez Trench 2 Levels VII-VI or at Beycesultan in Level XX. Little change is perceived within this transition. Nothing in the artifact repertoire can be distinctly noted as either the end of the Late Chalcolithic or the beginning of the Early Bronze Age... at Aphrodisias or Beycesultan... so we cannot be sure at what chronological point the settlements of this period come to an end, if they did. Nor are any of the architectural remains at Aphrodisias recognized as particular to one period or the other. We are not even sure of the relationship between the Pekmez and Acropolis mounds during this time, or even if they were occupied concurrently. At present there is no evidence to support a dual settlement in either the Late Chalcolithic or Bronze Age 1 — but by Aphrodisias Bronze Age 2 both mounds are in use.

The indicators that do exist for Bronze Age 1 are solely changes in pottery shape and decoration (see Part 4). The ceramics of Pekmez Trench 1 are similar to those of Trench 2. That this pottery bears a close resemblance to Kum Tepe types (Part 5) may reinforce a secure assignment of the remains of both trenches to this E.B.II period... yet much is considered questionable and incomplete as no architectural remains can be ascribed, any more than they could be to Late Chalcolithic 3-4.

The beginning of a Bronze Age 2 settlement appears to follow Bronze Age 1 without a stratigraphic break... but with marked ceramic changes... for at some point, the distribution of pottery in Pekmez Trench 2 suggests the area may have been leveled over by people of Bronze Age 2. Then sometime later during this period, the Pekmez mound was apparently abandoned. This Age at Aphrodisias has ceramics typologically similar to Beycesultan Level XVII, but lacks the more elaborately decorated

pottery — such as the Beycesultan fluted wares (Lloyd and Mellaart 1962:116). Again, a lack of definite architectural evidence leaves many questions unanswered for this early part of the Anatolian E.B.IIIA period.

For Bronze Age 3 (middle E.B.IIIA), we have much more interconnecting material between our site and Beycesultan (discussed in Part 5). Both Bronze Age 4 and Bronze Age 4 Middle Bronze are a continuation of this Bronze Age 3 culture.

In our cross-trench analysis, part of sorting out the evidence from this Acropolis mound was the endeavor to link up strata in one trench with those in the others. It became apparent that Acropolis Trenches 3 and 4, 5 and 7, all of which were adjacent, had comparable developments. But the lowest level, Bronze Age 2 Complexes XII-VII in Acropolis Trench 3 (Figure 71) was earlier than any recovered from Acropolis Trenches 4, 5 or 7. And the cross-trench alignment of Trenches 3 and 4, Complexes VI to II in each, cannot be safely interrelated architecturally because of ancient and extensive remodelling activities and reuse of structures. The objects, however, do allow for correspondences between these two trenches.

Composite cross-trench plans of the later complexes in Trenches 3 and 4 are presented in Figures 186-187, 189-193. Both of these Acropolis trenches are extremely rich in architectural and artifactual material. A summary of Early and Middle Bronze chronological assessments for Acropolis Trenches 3, 4, 5, 7 follows.

Since Acropolis Trenches 6, 8 and 9 contain later materials, they will be treated subsequently, followed by comments concerning the burials found in all three excavated areas... Pekmez, Acropolis and Kuşkalesi.

Complexes XII-IX, the earliest in Trench 3 as well as on the Acropolis mound, may all be part of one complex (Kadish 1969:61). These were dated by the excavators to the Anatolian E.B.II period — we prefer to place them at the end of that period or Aphrodisias Bronze Age 2. With the exception of a curvilinear stone foundation (Figure 71), little architecture was recorded. Dates were probably proposed by the excavators on the basis of their pottery. For Complexes X and IX, Kadish (ibid., 62) states that black-slipped ceramics with incised white-filled designs, carinated bowl rims, mottled redand-black burnished wares, red-slipped plates, and pedestal bases were prominent (Figures 419, 420).

^{110.} Kadish (1969:1971) suggested parallels for these sequences with Troy, Beycesultan, Tarsus and Kusura — with her proposed dates ranging from the E.B.II to the end of the Late Bronze Age.

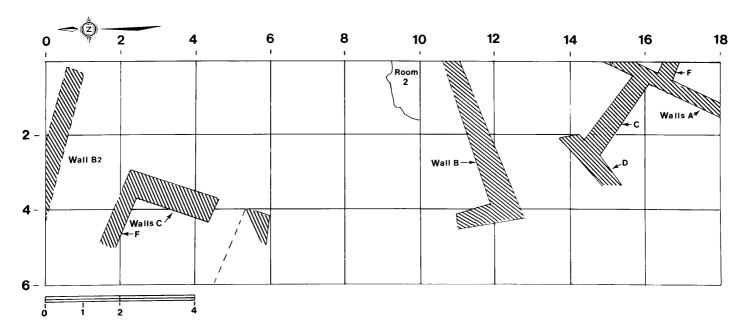
Complexes VIII-VII are reported by Kadish (1969: 64) as to « ... have yielded little information for any interpretation of value. » But on the basis of artifact evidence she does align Complex VIII, dated to Bronze Age 2, or E.B.II, to Level V on the Pekmez mound (Kadish 1971:137-138), (which level we assume to be in Pekmez Trench 2). Complex VII (Kadish 1969:61) contained highly polished black-slip wares with white-filled incisions, ceramic fragments with a metallic sheen, black or brown burnished red-slipped wares, and red and black highly burnished wares. Such ceramics indicate there is no break between these two complexes and the earlier Complexes XII-IX.

Complexes VI-IV were dated by the excavators to a general E.B.III period — but I think they belong to an earlier E.B.IIIA context or to Aphrodisias Bronze Age 3. The floor level and walls of Complex VI (Figures 73, 76) were reused by the people of Complexes V and IV, which made delimiting the stratigraphy difficult. Complex IV presents additional stratigraphic problems because it is entangled with V — the structures of both were built on a slope. These three complexes — VI, V and IV — were pointed out by the excavators to be roughly contemporaneous. Their artifact repertoire appears to be homogeneous. A heavy concentration of wheelmade plate fragments like those of Troy IIg (Shape Troy A 2) were found in Complex V, overlaid by the wall foundations of Complex IV.

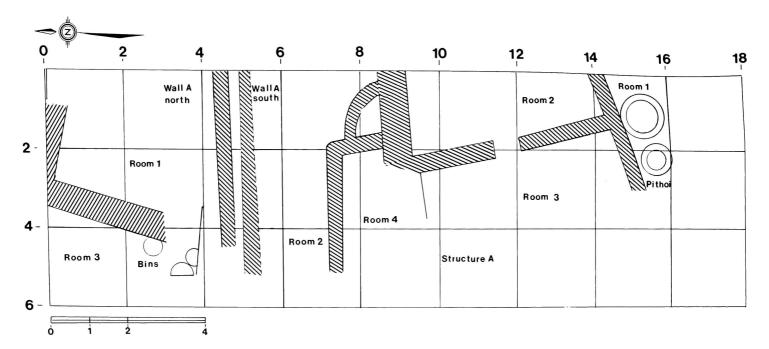
Similar wheelmade plate fragments were uncovered in the corresponding Complex V of Trench 4¹¹¹ and seem to underlie Complex IV there also... but in that trench they were not found associated with a clear-cut floor. Because of this and confusing wall structures, there are problems with this Complex V-IV deposit of Trench 4 and the location of artifacts — for example, a jar or cooking pot (cat. no. 349.I, Figure 439.10) was seemingly a part of Complex IV, and yet it was unearthed below the top of Walls C and F of this complex — which seems to place the object actually in Complex II. Parallels for a pebble figurine, cat. no. 262.2, (ibid.) can be seen at Tarsus II (Goldman 1956:296, pls. 431, 212, 229) and at Troy II (Blegen 1950, fig. 360, no. 35-208).

Architecture for these three complexes consists of fragmentary mudbrick walls and concentrations of stone that have little coherence. Complexes V-IV of Acropolis Trench 4 are, as stated earlier, comparable and contemporaneous with those complexes in Trench 3. A composite plan of Acropolis Trenches 3 and 4 Complexes VI-IV can be found in Figure 186.

111. Complex VI, also dated to Bronze Age 3, is the earliest complex in Trench 4.



186. Acropolis trenches 3 and 4; Complexes VI-IV composite plan.



187. Acropolis trenches 3-4; Complex II composite plan.

188. Acropolis trenches 5 and 7; Complexes Ia & I.

Complex II. Since the Complex III stratigraphy is so unclear in Acropolis Trench 4 (and the complex is not truly a complex at all in Trench 3), it has been combined with Complex II. After Trench 4 Complex IV was destroyed, Room 1 of Complex II was built over it (Figure 88). It seems that Wall A dividing Rooms 1 and 2 in Complex II was doubly rebuilt; this is identified as Wall A (north) and Wall A (south). Perhaps at the same time, the division was made on the SW for Room 4, if this did not already exist — and then the grain bins were constructed. It is assumed that the passage adjoining Room 3 on the W with Room 1 to the E was then closed off by a stone wall, and Room 3 converted into another storage area on the evidence of grain bins I, II and III. These were fenced to keep animals out. To the S of Acropolis Trench 4 was the synchronous development in Trench 3 — the building of Rooms 3 and 2. On the composite plan, Figure 187, this is noted as Structure A.

In the Acropolis Trench 3 Complex II was found a small face urn, *cat. no. 253.I*, Figures 310, 330, 426.12), first published by Mellink (1968: pl.54, fig. 2a-b). Kadish (1967:65) parallels this piece to Troy IIg (Blegen *et al.*, I.I, 1950:236, form C-30).

Complex II in both Trenches 3 and 4 was completely devastated by a massive conflagration, probably at the end of the Early Bronze Age IIIA ca. 2300/2200 B.C. Burning is also evidenced in Acropolis Trench 5. The devastation is a point central to this discussion... for it parallels the testimony found at the end of Troy II.

Artifact correlations can be found with Troy II ceramic forms — the depas A 45, tankard A 43, the

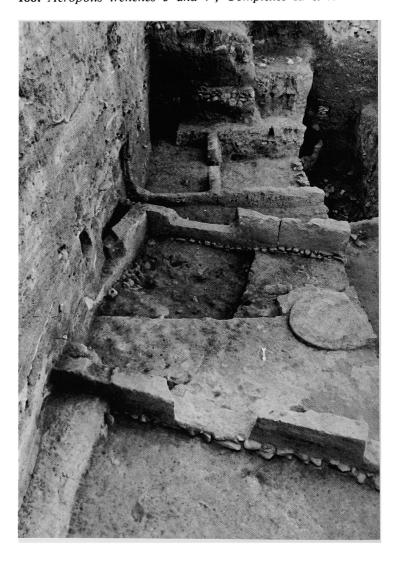
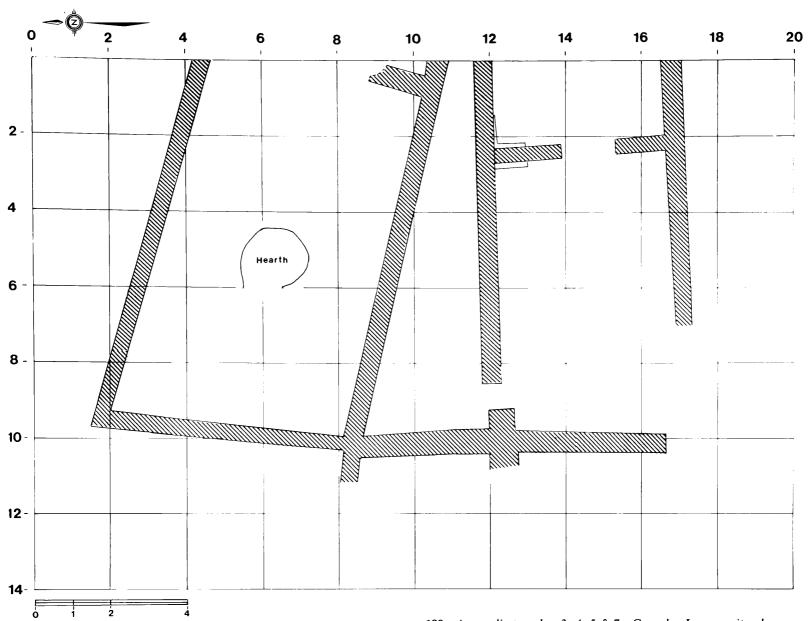


plate-platter A 1, and wheelmade bowl A 2. Thus, dating these deposits to the later part of the E.B.IIIA or to early E.B.IIIB seems reasonable. And fortunately, from Acropolis Trench 3 Complex II deposits were taken five radiocarbon dates (Table 4, p. 163). The high dates average 2246 B.C. and the low dates, ca. 2015 B.C... suggesting



189. Acropolis trenches 3, 4, 5 & 7; Complex I composite plan.

that Complex II came into use in the Early Bronze Age IIIA and was destroyed at the end of the third millennium. That there is a cultural tradition at Aphrodisias that is unbroken from Bronze Age 4 or Anatolian E.B.IIIB... continuing into the Bronze Age 4-Middle Bronze is clear not only from radiocarbon dates but from the minor ceramic changes.

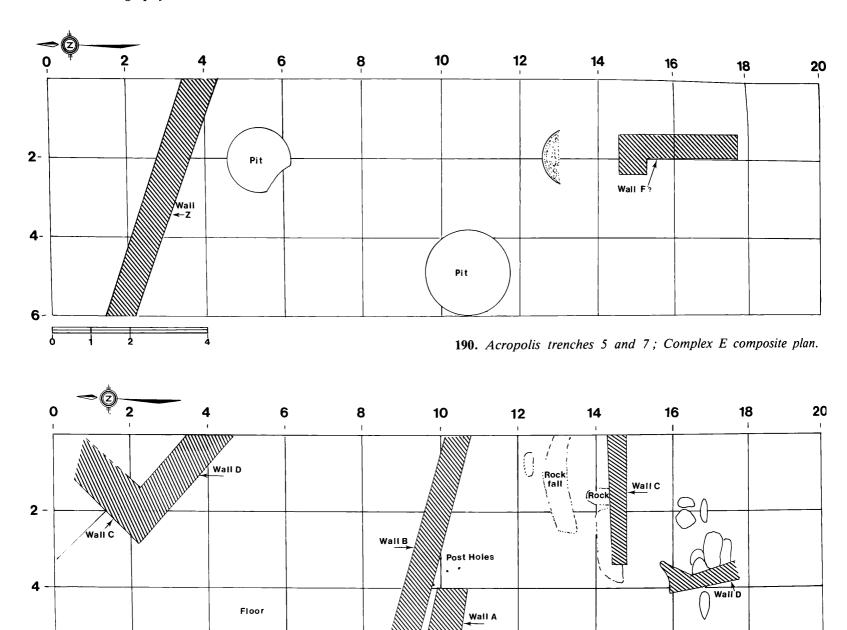
Complex I. Corresponding areas in Acropolis Trenches 3, 4, 5, and 7 were resettled after the destruction of Complex II — using those E.B.IIIB architectural elements that remained standing. In Acropolis Trench 3, Walls C-F delineated Complex I on the W (Figure 78). Out of Wall D, perpendicular to Walls C-F, a building complex was constructed that the excavators referred to as « Structure I ». It is said that this extended to the E into Trench 5, but was not diagrammed on any plan in the field notebooks.

In Trench 4, Structure I stretched also to the E into Trench 7. Somewhat later in Trench 4, making use of the NE corner of Wall D, was built Structure II... directly over the burned fill of Structure II of Complex II (neither shown on plans).

In Trench 5, Complex I was constructed out of the standing walls of destroyed Complex II (Figure 104). And in Trench 7, Complexes Ia and Ib were composed of a series of mudbrick walls and several layers of reconstruction (Figure 127).

For the first time in Bronze Age Aphrodisias, in Bronze Age 4 Middle Bronze, we are able to see a coherent cross-trench plan, an architectural interrelationship... in Acropolis Trenches 3, 4, 5 and 7. This can be found drawn on Figure 189. Conjectural walls are shown on the plan with dotted lines. The evidence suggests that this large building ca. 8.00 m by 6.00 m with

6



1 2 4 191. Acropolis trenches 5 and 7; Complex D composite plan.

a central hearth was a megaron-type structure. It was oriented E-W with a slight deviation to the S. A contemporary structure, built to its S and measuring ca. 8.00 m E-W by ca. 4.50 m N-S, also had an E-W orientation.

Such Early Bronze Age building methods provide us with a few definite chronological clues — for the use of the megaron is known throughout the Anatolian Bronze Age. The form is the subject of much discussion and has been well outlined by Huot (1982:797 ff.). Buildings of the Early Bronze IIIA period at Karataş-Semayük were planned similarly to the above (Mellink 1969: ill. 3), and their orientation was also E-W. The clearest parallels to our megara are found there in Trenches 35-37.

The artifacts of Acropolis Trench 3 Complex I are particularly significant for their correspondences. A large-open-mouthed storage vessel, cat. no. 219.1, Figure 427.1,

(Kadish 1969: pl. 26, fig. 20, f.n. 46) can be paralleled to shapes found at Troy I (Blegen et al., 1950: fig. 399), Troy II (Blegen et al., 1950: figs. 76-77), and at Tarsus II (Goldman 1956: pls. 376, 660, 661). A tripod jug with cordeye lug handles, cat. no. 219.II, Figures 327.1, 426.4 can also be found at Troy II (Blegen et al., 1950: figs. 402, no. 35.598, 403, nos. 35.427 and 37.967). The red-slipped depas amphikypellon (see Part 4, p. 390, for its individual discussion), cat. no. 8B.II, Figure 325.4, 426.11, finds parallels at Troy and other sites including Tarsus E.B.III (Goldman 1956: pl. 266). In spite of the admixture of Roman and Byzantine historic materials in this Complex I deposit, we have assigned it to an Aphrodisias Bronze Age 4 Middle Bronze context, which places its use in the Anatolian E.B.IIIB period.

Complexes F-E are represented by the later deposits of Acropolis Trenches 4, 5 and 7 — with fragmented and confused building remains that appear to be oriented E-W. In Acropolis Trench 4, after Structure I of Complex I had fallen out of use, Complex E was built; Structure II in the NE of that trench was probably still standing at the time of Complex E's construction. The extant Wall A from Complex II must have been used by the builders of Complex E since it stands above the floor level associated with the later complex.

In Acropolis Trench 7, confusion exists in the published report (Kadish 1971:134) about the interrelations between Complexes Ia, E and the later D.

From the late Anatolian E.B.IIIB, the building levels of Complexes F and E in Acropolis Trenches 5 and 7 are well preserved... but for Trench 3 it appears that subsequent builders destroyed or mixed much of the evidence. And in great part, Trench 4 is also mixed.

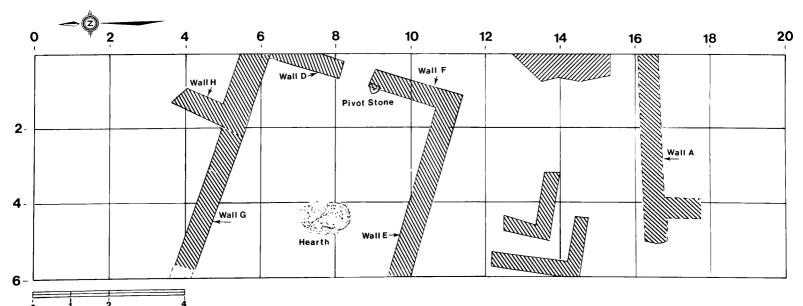
The Middle Bronze Age

The E.B.III-M.B. transition is not clear for there is no dramatic change in the pottery or in the artifact corpus... the development appears to have been an unbroken one. And not only do the ceramics exhibit a cultural continuity from Bronze Age 4 through the beginnings of the Middle Bronze Age, but the architectural evaluation is difficult to trace because the evidence is so fragmentary (Figures 190-191). Only Acropolis Trenches 5 and 7 will be discussed in any detail... but it must be remembered that the fragmentary evidence from Acropolis Trenches 3 and 4, from the upper strata that have « level » designations, is contemporary with the activities occurring in Trenches 5 and 7 —

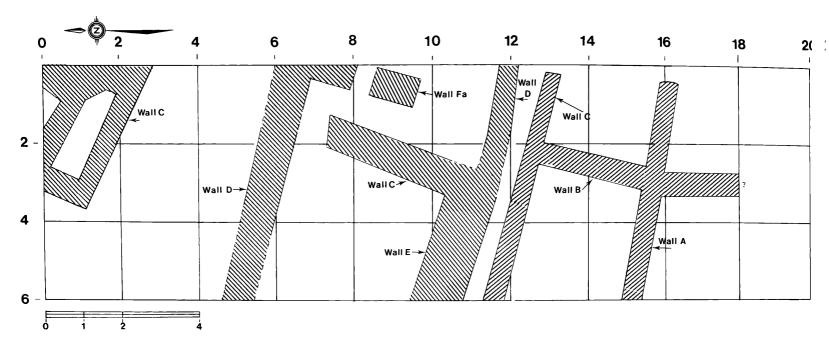
but the greater part of their remains, because of their higher position on the mound, have been erased by builders of the historic period.

Complexes D through A-1 inclusive. The architectural remains of Complexes D through A are interesting but do not provide a coherent picture of building activities. There was a great amount of both construction and remodelling in the use of the area. Characterizing these strata are hearths, pits, post holes, collapsed burned mudbrick, and rebuilt walls using parts of earlier walls. Intrusions from later Roman and Byzantine historic periods unfortunately disturbed these deposits. In addition, the plans of these complexes in the field notebooks are not consistently represented. For example, wall foundations have been given for Acropolis Trench 7, but not always for Acropolis Trench 5. Cross-trench plans for these complexes in Trenches 5 and 7 are presented in Figures 190-193. But they must be taken at their face value as being conjectural. The interested reader should refer to the respective trench-top plans seen here for a more accurate analysis of their development.

Earlier, in Stratigraphy, I proposed that the plan in Complex C Trench 7 (Figure 192) also appears to be part of a megaron — it lies on the same axis as the megaron found in Complex I, but is assigned a Middle Bronze Age date by us on the basis of radiocarbon dates and ceramics. What remains is a smaller structure than the Early Bronze Age one; its extant walls are only ca. 6.00 m in length by 6.00 m width. It opens to the east. From the excavated area was recovered a representative pottery sample which finds Middle Bronze parallels at Troy, Beycesultan and other sites. Enough evidence remains to suggest that the Acropolis area was in active use during this period.



192. Acropolis trenches 5 and 7; Complex C composite plan.



193. Acropolis trenches 5 and 7, Complex B composite plan.

From Acropolis Trenches 5 and 7, there are four recalibrated radiocarbon dates related to these deposits. In Trench 5 Complex C are two samples: P-1647 dates between 2185 and 1950 B.C.; and P-1646, from 1875 to 1670 B.C. Also from Trench 5 but in Complex B, sample P-1645 is dated between 1750-1575 B.C. These are consistent with the lower date, between 1890 and 1685 B.C., given for sample P-1644 from Complex A-1 of Trench 7. The fifth (sample P-1656) has high dates, 2160 to 1850 B.C., for this same complex — which may have resulted from the field treatment of the sample.

The Middle Bronze Age Complexes D-A of Acropolis Trenches 5 and 7 are not well preserved — floors must have disappeared either through wear, erosion, or destruction by later occupants. Thus our assignments of Complexes D, C, C', B, B', A, and A-1 through A-4 made to the Middle Bronze Age must be tentative. The last use of Acropolis Trenches 3-5 and 7 seems to have been during this period.

The Late Bronze and Iron Ages

The deposits of the Late Bronze and Iron Ages are limited to Acropolis Trenches 8 and 9... plus deposits of the assumed Lydian ceramics that are found exclusively in Acropolis Trench 6. No corresponding remains can be distinguished in other trenches for these two periods. It is possible that other parts of the mound were inhabited coevally and obliterated by successive buildings.

The sudden appearance of a new ceramic tradition leaves a question in our minds as to whether the Late Bronze Age materials are in direct sequence with the Middle Bronze Age deposits... if they do indeed precisely

follow them. At Aphrodisias, such a progression can not be charted with certainty. Stratigraphy in Acropolis Trenches 8 and 9 suggests there may be an admixture of wares from the two periods. The question then arises as to the dating of these closely connected deposits. Evidence implies that Trench 8 may belong to the first part of the Late Bronze Age. But how long a period is represented, when it began there, or came to an end is not clear. There are, unfortunately, no radiocarbon indicators to suggest the time framework for these deposits. And although the ceramics are rich, there is a paucity of architectural remains.

Also, what remains a mystery is the subsequent relationship between the Late Bronze Age and Iron Age deposits of the Acropolis Trenches 8 and 9. The ceramics imply that the Aphrodisias Late Bronze Age vanishes... probably followed by a gap (as happened all over the Eastern Mediterranean)... and then the Iron Age appears. It is hard to imagine that these two trenches are not associated, but basing our judgment solely on the ceramics, it appears that the Iron Age does not directly follow its predecessor.

And still open to question is another gap... the one between Acropolis Trench 9 Iron Age deposits and those of the later Lydian period discovered in Acropolis Trench 6. As to the succession of these events, the record is still open. For convenience, we follow the excavators' use of the term « Iron Age », but its context must not be taken too literally.

In Table 5, a tentative cross-trench alignment of cross-cultural complexes and levels is presented (see also Kadish 1971:123, ill. 2). And this will be found useful for

TABLE 5. PREHISTORIC APHRODISIAS TRENCH, COMPLEX, AND LEVEL ASSIGNMENTS

	PI	EKMEZ				A	CROPOLIS				KUŞKALESİ		Anatolian Periods
Period	1	2	1/2	3	4	5	6	7	8	9	1	2	
LN (?)		VIIIC										?	Late Neolithic
LC1		VIIIB-VIIIA											
LC2		VIID-VIIC											Late Chalcolithic
LC3		VIIB-VIIA											
LC4		VII											Early Bronze I
BA1	x	VI											Early Bronze II
GAP	ļ	 		ļ					ļ		 	?	
			19-B	XII							11		Early Bronze IIIA
BA2	IX	?		XI							10	10	
	VIII	V ? Pithos IV ^e		IX VIII (?)VII			4*				9	8	
BA3	VI Pithos	IVd IVc IVb Pithos (?)		VI V IVa	VI V IV		4*				8	7	
BA4	v	IVa	? *	III	III*						7 Pithos		
Destruction BA4-MB	IV*		? *	I*	I E	I F, E		Ia-Ib				5	Early Bronze IIIB
МВ						D C B		D C', C B, B'					Middle Bronze
MB Mixed			? *		A/A1		A-4/A-1						
GAP				ļ									- ?
LB			? *						A-4 III A-4 II A-4 I				Late Bronze
IA	!									A-5 II A-5 I			Iron Age
GAP			1				Lydian III D « Carian » jar						- ? Lydian

^{*} Mixed deposit. Pithos = burial.

the Aphrodisias burials (*infra*), and Table 6 is a summary of tentative calendar dates for prehistoric Aphrodisias.

TABLE 6. SUMMARY OF TENTATIVE CALENDAR DATES FOR PREHISTORIC APHRODISIAS

Late Neolithic (?)	ca. 5800 B.C.					
Gap	ca. 5300-4360 B.C.					
Late Chalcolithic	ca. 4360-2915 B.C.					
Late Chalcolithic Bronze Age 1	ca. 2915-2800 B.C.					
Gap	ca. 2800-2700 B.C.					
Bronze Age 2	ca. 2700-2600 B.C.					
Bronze Age 3	ca. 2600-2450 B.C.					
Bronze Age 4	ca. 2450-2200 B.C.					
Bronze Age 4 Middle Bronze	ca. 2200-1900 B.C.					
Middle Bronze Age	ca. 1900-(?) 1600 B.C.					
Gap?	ca. 1600-(?) 1300 B.C					
Late Bronze Age	ca. 1300-1200 B.C.					
Iron Age	ca. 1200-1100 (?) B.C.					
Gap?	ca. 1100-680 B.C.					
Lydian	ca. 680-546 B.C.					

Prehistoric Aphrodisias Burials

Among the archaeological sources for the Early Bronze Age at prehistoric Aphrodisias, the few burials excavated play an important part. Two of their most significant and characteristic features are: they represent typical examples of the pithos and jar burials, well-known in the western Anatolian Bronze Age; they imply a cultural rationale of this period that reflects the patterning of the Early Bronze Age folk. The following is a brief discussion of the burial evidence that was presented earlier with the stratigraphy of each trench. We are concerned here with the Pekmez Trenches 1 and 2 pithos burials, the pithos burial of Kuşkalesi Trench 1, and the jar burials of Acropolis Trench 6.

There has been an unfortunate loss of information during the excavation of these burials — basic analyses of age, sex determination, body positions, and, in some cases, the orientation of skulls have been incompletely recorded. We have a further information loss with regard to simple inhumation burials. If they existed at Aphrodisias, we suspect they suffered from post-dispositional disturbances. In this volume all the available data, including trench plans and photographs have been presented — but with such incomplete information our analysis must necessarily be broad in its implications.

Some of the questions this evidence poses are: 1) does the treatment of age or sex differ? 2) is there homogeneity among these burials? 3) do they reflect social distinctions? and 4) in general, what is their significance? In this study, we cannot hope to answer all the questions that archaeologists interested in these periods have encountered relating to burials, either extramural or intramural. But for the Bronze Age specialist, there is the important implication that most people were not buried in the domestic quarters of the settlement — or many more burials would have been discovered during the course of excavations.

Pekmez Trench 1 pithos burials. Of the two pithos burials discovered in this trench, the earlier was excavated in Level VIII and contained multiple burials of three child skulls (Figure 25). The level from which this grave was dug could not be determined at the time of excavation, but we assume that it was implanted sometime during the level's later occupation. Overlaying this multiple-child pithos burial, burnt layers were revealed which are assigned to Level VII. In Level VI the other pithos burial (Figure 26) was uncovered which contained a female accompanied by domestic articles. It too was probably inserted from an upper level.

Pekmez Trench 2 pithos burials. A pithos containing two individuals (a) and (b) of unspecified sex was discovered in soil mixed with ash and root growth. These burials are shown on Figures 53-59. The pithos was found lying on its side with its mouth pointing to the east. Accompanying the dead were four ceramic jars which have been paralleled to Beycesultan, Troy and Yortan. This burial suggests the reuse of the same pithos — after some interval the second body was inserted... a practice known at other sites. No sealed floor protected this huge vessel, thus its actual level of insertion poses problems.

Kuşkalesi Trench 1 pithos burials. The remains of well-preserved infant bones were found in a pithos (Figure 184), that accompanied a fragmented beak-spouted juglet of light pink burnished ware.

Acropolis Trench 6 jar burials. The use of Acropolis Trench 6 as a burial ground is manifested by a layer of brown earth and ash and nine jar burials (Figure 115) containing more ash and disarticulated bones. There does not seem to be any change through time in this area from its function as a cemetery, but just how long it was used for such a purpose is uncertain. It is difficult to place these burials into a definite time slot because they are out of clear stratigraphic context. Basing estimates on the types of jars used for burial containers along with accompanying items, and paralleling them to other sites (Part 4), we can approximate that : the area was first used in Anatolian E.B.III... when handmade straw-tempered tripod jars were used for interment (cat. no. 4.7, Figures 347, 462.1); and in the Late Bronze Age... when a wheelmade vessel bearing a dark slip with a metallic sheen (cat. no. 4.3, Figures 346, 462.9) was used; and then the latest vessel... the Carian jar (Figures 348-350, 464). Although no bones were found inside this jar's shattered body, it is hard to imagine that it is not related to the earlier burials. The range of vessel types implies that the area of Acropolis Trench 6 was used for burials for a 1000 years or more.

We suggest the following chronological scheme:

Pekmez Trench 2

multiple adult burial E.B.II late/IIIA early

Pekmez Trench 1

multiple child burial E.B.IIIA middle

Pekmez Trench 1

female burial E.B.IIIA late

Kuşkalesi Trench 1

infant burial E.B.IIIB (?)

Acropolis Trench 6

burials E.B.IIIA-MB-LB-Carian-Jar

Mortuary practices at Aphrodisias show a significant variety: the lack of conformity of the burial containers to a unified type; the varied placement of the burial vessel; its orientation as well as the position of the body is not consistent from one burial to the next. Simple and secondary burials, single and multiple burials, children and adults both interred in differing types of vessels... all of these factors point to differing traditions. Further, there is little similarity among the position, number, and type of grave offerings; funerary objects are present in some burials and are totally absent in others... and may be an indicator of hierarchy within the society. The female burial of Pekmez Trench 1 is clearly distinguished by the richness of its offerings, implying this person enjoyed a relatively high position. In the case of the infant interments of Acropolis Trench 6, they appear to have received treatment similar to one another, thus it might be reasoned they occupied an equivalent status in the community. That burials are found in three different areas of the site and that there are differing types of archaeological features associated with them is intriguing.

Although inhumation within vessels appears to be the standard method, the possibility of cremation is also suggested — by the evidence of Pekmez Trench 1 multiple child burial and the Bronze Age level of Acropolis Trench 6.

Whatever the causes, the lack of homogeneity among the jar and pithos burials is striking. Fundamental differences might be explained by the fact that each group adhered to its own rituals, or that they practiced different burial methods in different periods. After all, there was a ca. 700-year span between late Anatolian E.B.II and the Middle Bronze Age.

Concluding Remarks

Little of our analysis of stratigraphy was geared to focus on identifying areas of specialized use. I have tried to correlate the distributions of artifacts and soil conditions associated with different locations at the site, but settlement-use analysis remains inconclusive because of the vague picture we have of activity loci. The basic problem is that little real spatial organization can be recognized, i.e., there do not appear to be areas for specific purposes... with the one exception being the NW part of Acropolis Trench 6 and its high concentration of burials.

We can tentatively identify most areas as segments of both habitation and workshop complexes. Our analysis indicates that Pekmez Trenches 1 and 2 and Acropolis Trenches 3-5, 7-9 served multiple purposes, that many interrelated activities were carried out... shown by assemblages composed of a great variety of tools. Interpretation of the actual function of the site must be dependent in part on a complete analysis of pottery and small objects. But a preliminary survey of the various artifacts such as ground stone and chipped stone, spindle whorls, bone spatulas... plus signs of wall foundations, mudbrick residue and concentrations of ash throughout the excavation suggests that both the Acropolis and Pekmez mounds were domestic residential areas that continued in use for some time.

In general, it is evident these folk were involved in a mixed economy which included food processing and related work... such as knapping, skinning, cutting, grinding, preparing, and so on. Of course, this is testimony to the efficiency of the settlement. The location of the site is readily seen to be accessible to cultivated crops (the feeding plain is below), with the habitation areas postulated to serve for the processing and distribution of the foods. Within each excavated area there may have been a specialized locus for processing or storage, but how these loci were organized and how they interrelate with others for a complete picture is not clear. The evidence does imply, however, that there was little degree of spatial separation between these duties.

* *

This Part 2 has dealt with the observation of available facts. As an interpreter, I have tried to abstract these facts that make up the Aphrodisias excavation... and then break them down in order to study each component individually. I have presented plans, sections, soils, artifacts, and a few theories which are best designed for exploration and guidance. This, in a sense, may even be considered as a simplification.

178 Stratigraphy

These investigations have allowed us to conduct a stratigraphic analysis of architectural and archaeological features... incorporating lithic and bone industries plus an extensive corpus of ceramic types, ware-fabrics, and decorative motifs... which are discussed later in this volume as they pertain to particular prehistoric Aphrodisias periods. Also, the stratigraphy forms a focal point for the theories presented in the Conclusions.

Many problems, such as the diffusion of ideas before and during each of the cultural slots, remain extremely complex and largely unanswered — for prehistoric southwest Anatolia is a relatively unknown area and needs future investigation sensitive to its archaeological development.

FAUNA AND SHELL STUDIES

Faunal Analysis

by Pam Jean Crabtree and Janet M. Monge

INTRODUCTION

The faunal collection from Pekmez trench 2 included 4128 bones and bone fragments. Of these, 1845 (44.71 %) were unidentifiable fragments of mammal and bird bone. The animal species identified included: domestic cattle (Bos taurus), domestic sheep (Ovis aries), domestic goat (Capra hircus), domestic and wild pig (Sus scrofa), fallow deer (Dama dama), roe deer (Capreolus capreolus), red deer (Cervus elaphus), dog (Canis familiaris), and a small number of equid remains which have not been identified to species (see Table 10). In addition to the fragments which could be identified to species, the Pekmez faunal collection included a substantial number of indeterminates, sheep/ goat fragments and a significant quantity of bone which could only be identified to higher order taxa, such as small artiodactyl, large artiodactyl, small mammal, etc. (see Table 10).

We also examined a small quantity of material from Pekmez trench 1, the Acropolis, and Burial II, Pithos I, Level I. The species identified from these contexts and the Pekmez 2 units which could not be ascribed to periods are summarized in Table 8. As the samples from these contexts are small, they have not been analyzed in detail.

Although the stratigraphy from Trench 2 has been divided into a series of Late Chalcolithic and Early Bronze Age periods, the faunal samples from these units were too small for detailed quantitative analysis. We therefore grouped the faunal material from these units into two broad chronological phases: Late Chalcolithic and Early Bronze Age. The fauna from these will be discussed in detail.

QUANTIFICATION

Table 7 shows the total number of bones from Pekmez trench 2 identified to species or higher order categories. Tables 9 and 10 illustrate the same information for the Late Chalcolithic and Early Bronze Age faunal samples. It should be noted that about 2/3 (or 1336) of the animal bones come from the Early Bronze Age. No explanation for this difference can be postulated.

As mentioned above, 44.71 % of the total number of bones from Pekmez 2 were placed in the unidentifiable category. From a comparison of Tables 11 and 12 it is clear that the Late Chalcolithic faunal assemblage made the greatest contribution to the unidentifiable bone category, as less than half these bones could be identified to species or higher order categories. The Early Bronze Age sample has a significantly smaller proportion (22.89 %) of unidentifiable bones. The reason for this discrepancy is unclear but may be a result of some combination of a longer time of deposition for the Late Chalcolithic bone, a change in the method of animal exploitation, a change in the preservation conditions, or a change in method of meat or animal by-product preparation.

Since only a small number of anatomical features can be used to distinguish sheep from goat bones (Boessneck 1970), the number of sheep and goat bones from Pekmez that can be identified to species is correspondingly small. In both the Late Chalcolithic and the Early Bronze Age the proportion of bones clearly identifiable as goat is twice that of sheep. Thus, goats seem to have more importance than sheep throughout the Late Chalcolithic and Early Bronze Age at Pekmez. In the following analyses, the identifiable sheep and goat bones are grouped with the indeterminate sheep/goat fragments for purposes of quantification.

Table 7. Total species represented in Pekmez 2

	N C		
SPECIES	No. of		
	fragments	Total	Subtotal
CATTLE	249	6.03	16.34
SHEEP	35	.85	2.3
GOAT	57	1.38	3.74
SHEEP/GOAT	434	10.52	28.48
PIG	339	8.21	22.24
FALLOW DEER	68	6.49	17.59
ROE DEER	27	.65	1.77
RED DEER	40	.97	2.62
EQUID	6	.15	.39
DOG	69	1.67	4.53
SUBTOTAL	1524		
SMALL ARTIODACTYL	480	11.63	
LARGE ARTIODACTYL	197	4.77	
UNIDENTIFIED MAMMAL	1843	44.65	
SMALL MAMMAL	4	.10	
LARGE MAMMAL	11	.24	
CERVID	7	.17	
LARGE CARNIVORE	2	.05	
SMALL CARNIVORE	3	.07	
HUMAN	5	.12	
TURTLE	50	1.21	
UNIDENTIFIED BIRD	2	.05	
TOTAL	4128		

Table 8. Animal bones not studied in detail

SPECIES	Acro-	Pek- mez 1		Burial II Pithos I Level I**
CATTLE	13	4	9	0
SHEEP/GOAT	23	12	18	1
SHEEP	1	5	3	0
GOAT	9	0	1	0
PIG	19	19	8	0
FALLOW DEER	6	9	14	1
ROE DEER	1	0	0	0
RED DEER	0	3	1	0
SMALL ARTIODACTYL	8	13	14	2
LARGE ARTIODACTYL	4	5	12	0
DOG	0	1	1	14
EQUID	0	0	1	0
UNIDENTIFIED MAMMAL	15	11	13	25
SMALL MAMMAL	0	1	0	0
TURTLE	11	0	3	0
TOTAL	100	83	99	43

^{*} Pekmez trench 2 bones were not ascribed to periods or level/complexes.

TABLE 9. SPECIES REPRESENTED IN THE LATE CHALCOLITHIC (PEKMEZ 2)

	· · · · · · · · · · · · · · · · · · ·		
SPECIES	No. of	% of	% of
SPECIES	fragments	Total	Subtotal
CATTLE	105	3.76	11.65
SHEEP	15	.54	1.66
GOAT	24	.86	2.66
SHEEP/GOAT	252	9.03	27.97
PIG	214	7.66	
FALLOW DEER	220	7.88	24.42
ROE DEER	19	.68	2.11
RED DEER	35	1.25	
EQUID	1	.04	
DOG	16	.57	1.78
SUBTOTAL	901		
SMALL ARTIODACTYL	276	9.89	
LARGE ARTIODACTYL	102	3.65	
UNIDENTIFIED MAMMAL	1457	52.19	
SMALL MAMMAL	3	.11	
LARGE MAMMAL	7	.25	
CERVID	6	.21	
LARGE CARNIVORE	1	.04	
SMALL CARNIVORE	2	.07	
HUMAN	4	.14	
TURTLE	31	1.11	
UNIDENTIFIED BIRD	2	.07	
TOTAL	2792		

TABLE 10. SPECIES REPRESENTED IN THE BRONZE AGE (PEKMEZ 2)

SPECIES	No. of fragments		% of Subtotal
CATTLE	114	10.78	23.11
SHEEP	20	1.50	3.21
GOAT	33	2.47	5.30
SHEEP/GOAT	182	13.62	29.21
PIG	125	9.36	20.06
FALLOW DEER	48	3.59	7.70
ROE DEER	8	.60	1.28
RED DEER	5	.37	.80
EQUID	5	.37	.80
DOG	53	3.97	8.51
SUBTOTAL	623		
SMALL ARTIODACTYL	204	15.27	
LARGE ARTIODACTYL	95	7.11	
UNIDENTIFIED MAMMAL	386	28.88	
SMALL MAMMAL	1	.07	
LARGE MAMMAL	4	.29	
CERVID	1	.07	
LARGE CARNIVORE	1	.07	
SMALL CARNIVORE	1	.07	
HUMAN	1	.07	
TURTLE	19	1.42	
TOTAL	1336		

^{**} We are not sure of the provenience of this burial. M. Joukowsky.

Tables 11 and 12 present species/anatomy distributions for the Late Chalcolithic and Early Bronze Age fauna with major subdivisions into large anatomical sections (head, forelimb, hindlimb, feet and teeth). This same information is presented in Tables 16 and 17 but only totals of these subdivisions and percentages are included. From these tables it is clear that there are some differences

between species in the distribution of anatomical elements. There appears to be a difference between the Late Chalcolithic and the Early Bronze Age in the species/anatomical subdivisions. It is unclear if these discrepancies represent differences in the way species are exploited, or if they are the result of other non-economic factors such as differential identifiability or differential preservation.

TABLE 11. SPECIES/ANATOMY DISTRIBUTION FOR THE LATE CHALCOLITHIC (PEKMEZ 2)

	Cattle	Sheep/ Goat	Pig	Cervid
HEAD				
Skull	8	5	21	2
Horn Core/Antler	6	7		40
Maxilla	0	1	15	1
Mandible	8	39	22	13
Hyoid	0	0	0	0
Atlas	0	1	1	1
Axis	0	0	0	1
FORELIMB				
Scapula	6	1	19	13
Humerus	2	10	11	12
Radius	4	24	10	20
Ulna	4	0	12	6
HINDLIMB				
Innominate	2	1	10	14
Femur	1	1	6	8
Patella	1	1	0	0
Tibia	6	24	13	19
Fibula	Ü	2.	4	17
FEET				
Carpals	5	0	0	4
Tarsals	1	3	1	2
Astragalus	1	6	4	12
Calcaneus	3	3	5	10
Metacarpals	4	14	6	21
Metatarsals	5	28	2	28
Metapodials	0	0	8	4
1st phalanx	7	11	3	11
2nd phalanx	6	5	4	6
3rd phalanx	3	0	0	2
Sesamoids	0	0	0	0
ТЕЕТН				
Maxillary	9	54	22	11
Mandibular	13	51	14	12
Tooth fragments	0	1	1	1
TOTAL	105	291	214	274

TABLE 12. SPECIES/ANATOMY DISTRIBUTION FOR THE BRONZE AGE (PEKMEZ 2)

	Cattle	Sheep/ Goat	Pig	Cervid
HEAD				
Skull	12	9	19	3
Horn Core/Antler			5	
Maxilla	0	5	8	
Mandible	14	35	12	2
Hyoid	1	1	0	0
Atlas	2	0	3	2
Axis	0	0	0	
FORELIMB				
Scapula	4	16	11	3
Humerus	4	6	7	2
Radius	11	19	3	3
Ulna	4	2	4	2
HINDLIMB				
Innominate	1	6	12	5
Femur	5	8	5	3
Patella	1	0	0	0
Tibia	2	21	5	8
Fibula			4	
FEET				
Carpals	7	0	1	0
Tarsals	4	0	0	2
Astragalus	4	7	1	0
Calcaneus	1	10	3	3
Metacarpals	11	19	1	4
Metatarsals	9	10	4	3
Metapodials	4	0	6	0
1st phalanx	9	12	1	2
2nd phalanx	10	6	0	3
3rd phalanx Sesamoids	5 3	3 0	0 0	1 0
ТЕЕТН	J	Ü	v	v
Maxillary	5	10	3	1
Mandibular	4	24	9	1
Tooth fragments	0	1	0	0
TOTAL	142	235	122	61

TABLE 13. ANATOMICAL GROUPINGS FOR THE LATE CHALCOLITHIC (PEKMEZ 2)

	Cattle	Sheep/ Goat	Pig	Cervid
HEAD	22	53	59	58
	(20.95 %)	(18.21 %)	(27.57 %)	(21.17 %)
FORELIMB	16	35	52	51
	(15.24 %)	(12.03 %)	(24.30 %)	(18.61 %)
HINDLIMB	10	27	33	41
	(9.52 %)	(9.28 %)	(15.42 %)	(14.96 %)
FEET	35	70	33	100
	(33.33 %)	(24.05 %)	(15.42 %)	(36.50 %)
ТЕЕТН	22	106	37	24
	(20.95 %)	(36.43 %)	(17.29 %)	(8.76 %)
TOTAL	105	291	214	274

One major goal of faunal analysis is to assess the relative importance of each species present in the economy of the prehistoric inhabitants at a site. The next four Tables (15, 16, 17 and 18) are devoted to an assessment of the numbers and percentages of bones of different species in the Late Chalcolithic and the Early Bronze Age faunal assemblages. A number of methods have been employed to calculate specific proportions for faunal collections; we have used five of these methods. They include Total Fragment Count and Minimum Number of Individuals Tables 15 and 17, and three variations on the Relative Frequency Method: Relative Frequency (RF), Relative Frequency minus First and Last Element (RF - (F + L)), Relative Frequency using the Middle Quartiles (RF (1/4 iles)) Tables 16 and 18. The various methods produced remarkably similar results.

Since the only animals represented in significant numbers are cattle, sheep/goat, pig and deer, assessment of relative importance of species is limited to these four. Fallow deer, roe deer and red deer have all been combined into the category termed « cervid » and, as noted above, the identifiable sheep and goat bones have been incorporated into the category of undifferentiated sheep/goat. It seems clear that the inhabitants of this site were hunting a significant number of wild species as evidenced by the number of deer remains in the collection. The pig category may also include a significant proportion of wild boar (see the measurement section below).

Total Fragment Counts and the percentages of the total of each species are presented in Table 15 for the Late Chalcolithic and in Table 17 for the Early Bronze Age.

TABLE 14. ANATOMICAL GROUPINGS FOR THE BRONZE AGE (PEKMEZ 2)

	Cattle	Sheep/ Goat	Pig	Cervid
HEAD	34	55	42	15
	(23.94 %)	(23.40 %)	(34.43 %)	(24.59 %)
FORELIMB	23	43	25	10
	(16.20 %)	(18.30 %)	(20.49 %)	(16.39 %)
HINDLIMB	9	35	26	16
	(6.34 %)	(14.89 %)	(21.31 %)	(26.23 %)
FEET	67	67	17	18
	(47.18 %)	(28.51 %)	(13.93 %)	(29.50 %)
ТЕЕТН	9 (6.34 %)	35 (14.89 %)	12 (9.84 %)	2 (3.28 %)
TOTAL	142	235	122	61

This method is frequently used in faunal studies and is the simplest way of estimating specific proportions. The method has been criticized, however, by Daly (1969) and Gilbert (1980) based on the failure of the method to account for skeletal complexity, i.e., that some animal species have more bones in their skeletons than others do.

Tables 15 and 17 also show proportions of species based on a second method of quantification: Minimum Number of Individuals (Chaplin 1971). This method has also been criticized (see Gilbert and Steinfeld 1977) since an overrepresentation of one skeletal element could conceivably skew the results of relative proportions in favor of one or another species which, in reality, is not of greater economic importance. For example, the overrepresentation of horn core may represent a collection of bones by the inhabitants for uses other than food. For the Pekmez 2 fauna, however, the Fragment Count and Minimum Number of Individuals methods produce very similar specific ratios.

The Relative Frequency method, described by Perkins (1973), has advantages in faunal quantification since it attempts to remove the bias of differential preservation of bone and to account for skeletal complexity. This method corrects for skeletal complexity by dividing the raw data on the quantity of skeletal elements present by the number of times the element appears in the skeleton. This is done for several skeletal elements of each species and the results are averaged (see RF in Tables 16 and 18 for the Pekmez 2 Late Chalcolithic and Early Bronze Age Relative Frequencies). In order to account for over and under representation, the skeletal elements present in the largest and smallest number are removed from the

calculation to yield a Relative Frequency minus First and Last element (see RF (F + L)) in Tables 16 and 18 (see, for example, Gilbert and Steinfeld 1977). Finally, a Relative Frequency was calculated using the Middle Quartiles of the group of elements for each species (Hesse and Perkins 1974). The elements are ranked from most frequent to least frequent and the center 50 % are averaged to produce a Relative Frequency of species (see RF (1/4 iles) in Tables 16 and 18). This method is based on the assumption that the middle 50 % of the ranked elements most accurately represents the proportion of the species at the site.

In all three variations on the Relative Frequency method it is clear that there is no significant difference in the proportion of species represented. Also, it seems clear that there is no discrepancy in the frequency of the species represented within the Late Chalcolithic and the Early Bronze Age based on any of the five methods of quantification presented here. Either all five methods illustrate the reality of species utilization at the site or, at least, all five methods are biased in the same direction. All five methods of quantification indicate that sheep/goat, deer, and pigs were the most commonly exploited

Table 15. Comparison of MNI and Fragment count METHODS OF QUANTIFICATION

THE LATE CHALCOLITHIC (PEKMEZ 2)

	Fragment	Count	N	1NI
	no.	970	no.	970
CATTLE	105	11.88	4	8.16
SHEEP/GOAT	291	32.92	20	40.82
PIG	214	24.21	11	22.45
CERVID	274	31.00	14	28.57

CHI-SQUARE = 1.565: not significant at p = .05

Table 16. Relative frequencies for the late chalcolithic (Pekmez 2)

SPECIES	RF	RF — (F + L)	RF RF (1/4 ILE)
CATTLE SHEEP/GOAT PIG CERVID	1.88 5.57 5.75 5.86	1.92 6.20 5.56 5.66	1.78 4.50* 5.42** 5.50
	Proportion	Proportion	Proportion
CATTLE SHEEP/GOAT PIG CERVID	9.86 % 29.22 % 30.17 % 30.75 %	9.93 % 32.06 % 28.75 % 29.27 %	10.35 % 26.16 %* 31.51 %** 31.98 %

^{*} based on middle 57 %

species during the Late Chalcolithic phases at Pekmez. As noted above, goats were about twice as common as sheep. The vast majority of the deer remains are fallow deer bones; red deer and roe deer are much less common. The high proportion of deer bones (approximately 30 %) in the Late Chalcolithic faunal assemblage is striking and indicates that hunting, as well as husbandry, formed an important part of the Late Chalcolithic pattern of animal use. In contrast, the proportion of cattle remains in the Late Chalcolithic faunal assemblage is quite low.

There are differences, however, in the proportion of species represented between the Late Chalcolithic and the Early Bronze Age. Clearly, there is a significant decrease in the proportion of deer in the Early Bronze Age; the importance of deer hunting to the economy seems to decline dramatically. Concomitantly, there is an increase in the percentage of cattle from the Late Chalcolithic to the Early Bronze Age. It seems apparent that, for whatever reason, in the Early Bronze Age cattle replace deer as a major portion of the animal remains. The proportions of sheep/goat and pigs remain high throughout the Early Bronze Age phases, and goats are again about twice as common as sheep.

TABLE 17. COMPARISON OF MNI AND FRAGMENT COUNT METHODS OF QUANTIFICATION

THE BRONZE AGE (PEKMEZ 2)

	Fragment	Count	N	INI
	no.	070	no.	70
CATTLE	144	25.49	7	20.00
SHEEP/GOAT	235	41.59	18	51.42
PIG	125	22.12	6	17.14
CERVID	61	10.80	4	11.43

CHI-SQUARE = 1.537: not significant at p = .05

TABLE 18. RELATIVE FREQUENCIES FOR THE BRONZE AGE (PEKMEZ 2)

SPECIES	RF	RF — (F + L)	RF (1/4 ILE)
CATTLE	2.63	2.62	2.06
SHEEP/GOAT	5.52	5.00	4.31
PIG	3.35	3.00	3.25*
CERVID	1.48	1.38	1.31**
	Proportion	Proportion	Proportion
CATTLE	20.26 %	21.83 %	18.85 %
SHEEP/GOAT	42.53 %	41.67 %	39.43 %
PIG	25.81 %	25.00 %	29.73 %*
CERVID	11.40 %	11.50 %	11.99 %**

^{*} based on middle 60 %

^{**} based on middle 60 %

^{**} based on middle 57 %

AGEING ANALYSIS

Domestic animals can be used for a wide range of purposes including meat, milk, wool or hair, and traction. Studies of ages at death of the domestic mammals can inform us about kill patterns and season of slaughter of the domestic species. This information may allow us to make inferences about the ways in which domestic animals were used in the past. For example, when sheep are raised primarily for meat, we might expect a high proportion of the flock to be killed in the second and third years of life. Only a few older animals will be kept for breeding purposes. In contrast, flocks raised primarily for wool may include a higher proportion of older individuals, since adult sheep, especially wethers, are excellent wool producers.

Two methods have conventionally been used to determine ages at death for the domestic mammals: (1) epiphyseal union of the long bones and (2) dental eruption and wear.* In recent years, dental eruption and wear has been the method preferred by many bone workers (see, for example, Payne (1973), Grant (1975), Ewbank, et al. (1964), Klein, et al. (1981)). Since teeth continue to wear throughout an animal's lifetime, degree of dental wear can be used to distinguish between adult and elderly individuals. In contrast, epiphyseal union ceases with bodily maturity and, therefore, cannot be used in this way. Only the sheep/goat sample from Pekmez 2 was large enough to be aged on the basis of dental eruption and wear. Ageing studies for the Pekmez cattle and pigs were based on epiphyseal union.

Since many of the sheep and goat mandibles from Pekmez 2 are fragmentary, precise estimates of age at death could not be made for the majority of the mandibles. We limited our analysis to mandibles which included at least two ageable teeth. Our sample included 29 ageable mandibles from Late Chalcolithic contexts and 16 from the Early Bronze Age levels. Each mandible was initially classified as either immature or mature, a mature mandible being defined as one which has a fully erupted permanent dentition. This analysis pointed up striking differences between the Late Chalcolithic and Early Bronze Age levels. While the Late Chalcolithic contexts included nearly equal proportions of mature and immature mandibles (see Table 19), all but one of the 16 Early Bronze Age mandibles belonged to adults. A Fisher's Exact Test was used to compare the Late Chalcolithic and Early Bronze Age ageing distributions, and the differences between the two phases are statistically significant (p = .0007). In other words, the Early Bronze Age faunal sample from Pekmez 2 includes a significantly higher proportion of adults and fewer juveniles than does the Late Chalcolithic collection.

The reason for the difference between the Late Chalcolithic and the Bronze Age kill-patterns is not entirely clear. If these kill-patterns are a direct reflection of past economic practices, then the differences between the Late Chalcolithic and Early Bronze Age sheep and goat kill-patterns may represent changing economic strategies such as a shift from meat to wool production. However, several other explanations are possible. For example, the differences may be the result of differing disposal practices or trade patterns. We need more archaeological information in order to make an informed choice between these alternatives.

A few specimens from the Late Chalcolithic and Early Bronze Age levels could be aged more precisely. The majority of the juvenile specimens from the Late Chalcolithic contexts seem to have been between one and two years old at the time of death (stage D following Payne 1973). Neither the Late Chalcolithic nor the Early Bronze Age levels yielded any evidence for sheep and goats killed at less than one year of age. Most of the adult specimens were between four and six years of age at time of death (Payne (1973), stage G). This evidence might suggest that the residents of Pekmez were being provisioned with sheep and goats of specified age classes.

As noted above, estimates of ages at death for the Pekmez pigs and cattle are based on epiphyseal union of the long bones. The epiphyseal union data for the Pekmez two pigs are shown in Tables 20 and 21. As can be seen from Table 22, the kill-patterns for the two phases are remarkably similar. It is clear that only a small minority of the Pekmez 2 pigs survived for more than three years; most were killed between ages one and three.

The cattle remains from Pekmez 2 present a very different picture. The epiphyseal union data for the Late Chalcolithic and Early Bronze Age cattle from Pekmez 2 are summarized in Tables 24 and 25. The majority of

TABLE 19. KILL PATTERNS FOR PEKMEZ 2 SHEEP AND GOAT MANDIBLES

	Late Chalcolithic	Early Bronze Age
IMMATURE MATURE	13 (44.83 %) 16 (55.17 %)	1 (6.25 %) 15 (93.75 %)
TOTAL	29	16

^{*} See Silver (1970) for a full discussion of the methods of age determination for the domestic mammals. Payne (1973) and Grant (1975) include detailed descriptions of ageing based on dental eruption and wear.

TABLE 20. EPIPHYSEAL UNION DATA FOR LATE CHALCOLITHIC PIGS (PEKMEZ 2)

EARLY FUSING EPIPHYSES (1 YEAR)	No unfused	No. fused
Distal Humerus	2	0
Proximal Radius	0	8
Proximal 2nd Phalanx	·	3
Proximal 2nd Phalanx	1	3
TOTAL = 14	3	11
	5	(78.57 %)
MIDDLE FUSING EPIPHYSES		
(2 - 2½ YEARS)		
Distal Metapodial	6	5
Proximal 1st Phalanx	0	0
Distal Tibia	4	3
Proximal Calcaneus	5	0
TOTAL		
TOTAL = 23	15	8
		(34.78 %)
LATE FUSING EPIPHYSES (3 3½ YEARS)		
Proximal Humerus	2	0
Distal Radius	1	0
Proximal Ulna	1	0
Distal Ulna	1	0
Proximal Femur	1	1
Distal Femur	3	0
Proximal Tibia	0	0
	·	•
TOTAL = 10	9	1
		(10.00 %)
		(10.00 %)

TABLE 22. MORTALITY PATTERNS FOR LATE CHALCO-LITHIC AND EARLY BRONZE AGE PIGS FROM PEKMEZ 2

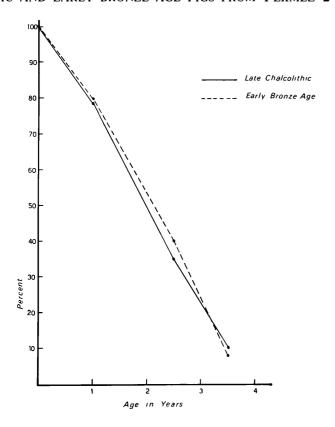


TABLE 21. EPIPHYSEAL UNION DATA FOR BRONZE AGE PIGS (PEKMEZ 2)

 -		
EARLY FUSING EPIPHYSES (1 1½ YEARS)	No. unfused	No. fused
Distal Humerus	0	3
Proximal Radius	1	1
Proximal 2nd Phalanx	0	0
1 TOXIIII 2110 T Halanx	U	U
TOTAL = 5	1	4
		(80.00 %)
MIDDLE FUSING EPIPHYSES (2 - 2½ YEARS)		
Distal Metapodial	6	4
Proximal 1st Phalanx	0	1
Distal Tibia	2	0
Proximal Calcaneus	1	1
TOTAL = 15	9	6
		(40.00 %)
LATE FUSING EPIPHYSES (3 - 3½ YEARS)		;
Proximal Humerus	3	0
Distal Radius	1	0
Proximal Ulna	3	0
Distal Ulna	0	0
Proximal Femur	3	1
Distal Femur	1	0
Proximal Tibia	1	0
TOTAL = 13	12	1
		(7.70 %)

TABLE 23. MORTALITY PATTERNS FOR EARLY BRONZE AGE CATTLE FROM PEKMEZ 2

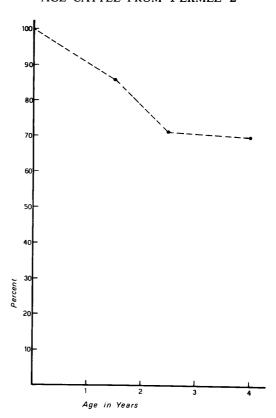


TABLE 24. EPIPHYSEAL UNION DATA FOR LATE CHALCOLITHIC CATTLE (PEKMEZ 2)

EARLY FUSING EPIPHYSES No. No. (1 1½ YEARS) unfused fused Distal Humerus 0 1 Proximal Radius 0 2 Proximal 1st Phalanx 0 5 Proximal 2nd Phalanx 0 6 TOTAL = 14n 14 MIDDLE FUSING EPHIPHYSES $(2 - 2\frac{1}{2})$ YEARS) Distal Metapodial 2 Distal Tibia 1 2 TOTAL = 62 4 LATE FUSING EPIPHYSES (3 - 4 YEARS) Proximal Humerus 0 0 Distal Radius 0 2 Proximal Ulna 0 0 Distal Ulna 0 0 Proximal Femur 0 0 Distal Femur 0 0 Proximal Tibia 0 1 Proximal Calcaneus 0 0 TOTAL = 30 3

TABLE 25. EPIPHYSEAL UNION DATA FOR BRONZE AGE CATTLE (PEKMEZ 2)

EARLY FUSING EPIPHYSES (1 1½ YEARS)		No. fused
Distal Humerus	0	4
Proximal Radius	1	5
Proximal 1st Phalanx	1	7
Proximal 2nd Phalanx	2	8
TOTAL = 28	4	24
101AE - 20	•	(85.71 %)
MIDDLE FUSING EPIPHYSES (2 - 2½ YEARS)		
Distal Metapodial	4	9
Distal Tibia	0	1
TOTAL = 14	4	10 (71.43 %)
LATE FUSING EPIPHYSES (3 - 4 YEARS)		
Proximal Humerus	0	0
Distal Radius	1	4
Proximal Ulna	1	0
Distal Ulna	0	0
Proximal Femur	1	0
Distal Femur	0	1
Proximal Tibia	0	1
Proximal Calcaneus	0	1
TOTAL = 10	3	7
		(70.00 %)

cattle in both periods are mature. In fact, the small Late Chalcolithic sample includes only two immature cattle bones. The mortality pattern for the larger Early Bronze Age cattle sample is shown in Figure 23. From the figure it is clear that approximately 70 % of the Early Bronze Age cattle survived until at least four years of age.

A reason for the striking differences between the cattle and pig kill-patterns may be suggested. Pigs can be used for only one major purpose: food. Once a pig reaches bodily maturity, little can be gained by continuing to feed it. We would therefore expect that only a few adult pigs would be kept for breeding purposes. Cattle, on the other hand, can be used for a wide range of purposes including traction and milk. Thus a higher proportion of cattle may have been allowed to survive to maturity.

BUTCHERY

All bones from Pekmez trench 2 were examined for cut marks and other traces of butchery. The distribution of Late Chalcolithic and Early Bronze Age butchery traces is shown in Tables 26 and 27. Inspection of the quantity and distribution of butchery traces points up some significant differences between the Late Chalcolithic and Early Bronze Age faunal assemblages. Although the Early Bronze Age faunal collection is smaller than the Late Chalcolithic one, the Early Bronze Age animal bones showed more than twice as many butchery marks as did the Late Chalcolithic. The reason for the contrast is unclear, but it may be the result of changing butchery techniques or tools. In the future, experimental butchery with stone, bronze, and copper tools may shed some light on this problem.

TABLE 26. DISTRIBUTION OF LATE CHALCOLITHIC BUTCHERY TRACES

	Cow	Sheep/ Goat	Pig	Fallow Deer	Red Deer
SKULL	1	1			
MANDIBLE	1				
HUMERUS	1	2		3	1
RADIUS			2	1	
ULNA		1	3		
FEMUR		1			
TIBIA	1	2		1	
METACARPAL		1		2	
METATARSAL					1
ASTRAGALUS		1		1	1
CALCANEUS				1	1
NAVICULO/CUBOID		1		1	
TOTAL	4	10	5	10	4

The distribution of butchery traces on the Late Chalcolithic and Early Bronze Age bones roughly parallels the relative importance of the different animal species during these periods. Fallow deer and sheep and goats are the most commonly butchered species during the Late Chalcolithic periods, while cattle, pigs, and sheep and goats are the most commonly butchered animals during the Early Bronze Age. This change echoes the increased importance of cattle and decreasing numbers of deer during the Early Bronze Age.

A closer look at the cut marks on the Pekmez bones can reveal the most important points of butchery on the animal skeletons. During both periods the elbow joint appears to have been a major point of disarticulation for the forelimb. Distal cut marks are apparent on four of the Late Chalcolithic and eight of the Early Bronze Age humeri, while corresponding cuts are seen on three Late Chalcolithic and 12 Early Bronze Age proximal radii. Cuts are also seen on three Late Chalcolithic proximal pig ulnae and on a single proximal ulna from an Early Bronze Age cow.

Patterns of butchery on the shoulder joint are less clear-cut. Two Late Chalcolithic sheep/goat humeri show cut marks near the proximal end, while six Early Bronze Age scapulae show cut marks near the glenoid end.

The hock or ankle joint was a major point of butchery for the hind limb during both the Late Chalcolithic and Early Bronze Age periods. The Late Chalcolithic faunal sample includes three examples of cut marks on distal tibiae, three on astragali, two on calcanei and

TABLE 27. DISTRIBUTION OF EARLY BRONZE AGE BUTCHERY TRACES

	Cow	Sheep/ Goat	Pig	Fallow Deer		Roe Deer	Dog
SKULL			1				
MANDIBLE	5		1				
SCAPULA	1	3	2		1		
HUMERUS	2	2	2				2
RADIUS	5	6	1			1	
ULNA	2	1					
INNOMINATE		1	4				
FEMUR	1	3					1
TIBIA			2			1	
SACRUM	1						
METACARPAL	4	1		1			
METATARSAL	4						
ASTRAGALUS		2					
CALCANEUS			1				
NAVICULO/CUBOID	1						
TARSALS	1						
HYOID	1						
CARPALS	1						
FIRST PHALANX	3	1					
TOTAL	34	20	14	1	1	2	3

two on the naviculo-cuboid. The Early Bronze Age assemblage includes two tibiae with cut marks on the distal end, two astragali and a calcaneus with butchery traces, a single butchered naviculo-cuboid, and two examples of cut marks on cattle proximal metatarsi.

Cut marks are very rare on Late Chalcolithic pelves and femora. In contrast, the Early Bronze Age faunal assemblage includes four pig innominates showing cut marks. Most marks are just outside the acetabulum or hip-socket and probably resulted from the separation of the hip joint. Cut marks are also seen near femoral heads of sheep/goats and cattle during the Early Bronze Age.

Butchery traces are rare on Late Chalcolithic metapodia from Pekmez trench 2. One sheep/goat and two fallow deer metacarpi have been split, probably to obtain bone marrow. Cut marks are also seen on the distal portion of a metacarpal shaft of fallow deer and on the distal midshaft of a red deer metatarsus. These probably result from cutting through the tendons that surround the metapodia. Cut marks are more common on Early Bronze Age metapodia. In particular, cut marks on distal metapodia of cattle are matched by butchery traces on the proximal portions of three cattle first phalanges. The marks certainly result from removal of the toes.

MEASUREMENTS

All the Pekmez 2 animal bones were measured following the guidelines published by von den Driesch (1976). The bones were measured using a Helios sliding dial caliper. Since the total Pekmez 2 faunal collection included less than 5000 bones, we do not have a large enough sample for a detailed metrical analysis. For reasons of economy, we will not include a complete list of the Pekmez 2 bone measurements here. These data are available to any interested scholar on request from the authors.

Pigs

Measurements on pig bones indicated that both the domestic pig and the wild boar (Sus scrofa) were present at Pekmez during Late Chalcolithic and Early Bronze Age times. Lengths of the upper and lower third molars can be used to distinguish between wild and domestic pigs since these teeth tend to shorten dramatically upon domestication (Dexter Perkins, personal communication). The Late Chalcolithic levels produced two measurable lower third molars with lengths of 27.6 mm and 32.0 mm (estimated). These measurements are well within the domestic pig range. In contrast, the single measurable upper third molar has a length of 46.4 mm and must clearly represent a wild boar.

Measurements of greatest lateral length of the astragalus (GL1, following von den Driesch) present a similar picture. The Late Chalcolithic levels at Pekmez 2 produced four measurable astragali, with greatest lengths of 37.9 mm, 39.8 mm, 52.3 mm, and 52.5 mm. This measurement seems to correlate well with overall body size and indicates very clearly that the Late Chalcolithic pigs from Pekmez 2 fall into two distinct size groupings.

The smaller Early Bronze Age sample from Pekmez 2 also includes both domestic and wild pigs. The single upper third molar length of 31.8 mm must represent a domestic pig. An astragalus with a greatest length of 50.5 mm clearly belongs to the larger wild boar.

Cattle

Only a small number of measurable cattle bones were recovered from the Late Chalcolithic and Early Bronze Age levels of Pekmez 2. Those measurements which are available do indicate, however, that the Pekmez cattle were quite large. Noddle (1973) has shown that the trochlear breadth of the humerus (von den Driesch's BT) is proportional to the body weight of cattle. Trochlear breadth measurements are available from both the Late Chalcolithic and the Early Bronze

TABLE 28. MEASUREMENTS ON LATE CHALCOLITHIC FALLOW DEER BONES (PEKMEZ 2)

Measurement	Mean	Range	S	N	CV
ASTRAGALUS (GL1) METACARPUS (Bp) TIBIA (Bp) HUMERUS (Bd) RADIUS (Bp)	38.6 27.2 34.5 42.4 42.0	35.6 - 41.2 25.7 - 29.6 31.5 - 37.1 39.2 - 45.7 41.45 - 42.6	1.8 1.5 1.8 2.7 0.5	5	.05 .05 .05 .06

NOTE: All measurements are in millimeters.

Age contexts at Pekmez. The Late Chalcolithic measurement of 77.9 mm corresponds to a live weight of 244.15 kg and a fat-free carcass weight of 136.5 kg, while the Early Bronze Age measurement of 84.3 mm corresponds to a live weight of 298.2 kg and fat-free carcass weight of 166.4 kg. As no complete long bones were recovered, no withers' height estimates can be made for the Late Chalcolithic and Early Bronze Age cattle from Pekmez.

Fallow deer

A substantial number of measurable fallow deer bones were recovered from the Late Chalcolithic contexts at Pekmez. A summary of the most commonly measured fallow deer bones is included in Table 28. Only a small number of measurable fallow deer bones were recovered from the Early Bronze Age contexts.

Sheep and goats

Measurements on sheep and goat bones present unique problems. Only a limited number of morphological features can be used to distinguish sheep and goat remains (Boessneck 1970). While anatomical elements such as distal humerus, scapula, proximal radius and first and third phalanges can usually be identified to species, distal tibiae cannot. This is particularly unfortunate since distal tibiae were the most commonly measured sheep/goat bones in both the Late Chalcolithic and Early Bronze Age phases at Pekmez.

It is possible, however, to make a few statements about sheep and goat sizes. A single complete sheep radius (149.3 mm, greatest length) from the Early Bronze Age provides a withers' height estimate of approximately 59.7 cm (23.5 inches). The Late Chalcolithic goat remains provided some surprises. These bones included a small number of very large goat remains (including a humerus and proximal metapodia) which are still under study.

CONCLUSIONS

This analysis of the fauna from Pekmez has pointed up some interesting contrasts between the Late Chalcolithic and Early Bronze Age faunal collections. The high proportion of deer in the Late Chalcolithic contexts is particularly striking. During the Early Bronze Age cattle seem to replace deer as a major source of meat. The proportion of mature sheep and goats increases dramatically in the Early Bronze Age, however the cattle and pig kill-patterns remain substantially unchanged.

As our entire faunal collection included less than 5000 fragments, our conclusions must necessarily be preliminary. Future research is necessary to build up a more complete picture of changing patterns of animal use during the Late Chalcolithic and Early Bronze Age periods in western Anatolia. In particular, analysis of larger faunal collections will permit more detailed metrical and butchery studies. These studies, in turn, can inform us about animal sizes, meat yields, and potential contributions to the diet.

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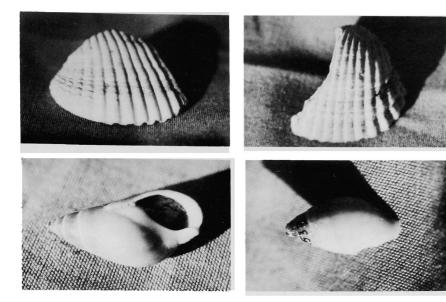
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194. Late Chalcolithic Shell, Pekmez trench 2.

- 1. 1598f.16 Cerastoderma edule glaucum, Level VIIIA
- 2. 1598c.2 Cerastoderma edule glaucum, Level VIIIA
- 3. 1533.a Melanopsis praemorsa, Level VIIA
- 4. 1533.b Melanopsis praemorsa, Level VIIA

Excavations at prehistoric Aphrodisias in western Turkey have produced archaeological remains spanning from the Late Neolithic to the Byzantine period. However, there are no shells from the Late Neolithic (?), (LN), Late Chalcolithic (LC) 2 and 4 and Bronze Age (BA) 1. The earliest marine shells are LC1 and the earliest fresh-water shells LC3.

The total collection includes 32 marine shells of 12 species and one crab from the Mediterranean, one Red Sea shell and 28 fresh-water shells of four species. The number, scientific name, common English and Turkish names and date of the shells are given on Table 29.

A breakdown of the Mediterranean and fresh-water shells by date follows:

Date	% Marine	% Fresh-water
Pre-BA4	12	25
BA4-MB	13	21
MB	41	21
Post-MB	34	32

The majority of all shells are MB. Cockles (Cerastoderma and Acanthocardia) and cowries (Erosaria, Luria, Monetaria) make up over half of all marine shells. All but one of the marine shells come from the Mediterranean, which is about 60 miles from the site. The unique shell from the Red Sea was imported at least an additional 500 miles.

Shells at Aphrodisias

by David S. Reese

Table 30, arranged chronologically, gives information on the marine shells and Table 31 provides the same information for the fresh-water shells. Figure 195 shows worked shells or species of special interest. Other photographs and drawings of shells can be found on other figures.

The earliest shells from the site (LC and BA2) and the latest remains (mixed Hellenistic to Byzantine) come from the two Pekmez trenches. All the others come from Acropolis trenches, especially trench 7, which produced 53% of the marine shells and 50% of the fresh-water shells.

All marine shells but the cowries, *Columbella*, *Arcularia* and *Euthria*, or half of the marine species, are edible forms, and are still eaten today in the East Mediterranean. Some of the edible species are water- and beachworn and were collected already dead on the beach. This suggests, along with the small number found and the distance from the sea, that all the marine shells were brought to the site for some non-food purpose, presumably ornamental, and a number have indeed been holed.

The nine *Cerastoderma* valves include a burnt BA2 fragment and a MB, Complex D shell 0.031 m high and 0.034 m wide with a ground-down hole at the umbo 0.004×0.055 m (*cat. no. 502.1*, Figure 195.1). One of the larger cockles, an *Acanthocardia* from BA3 (*cat. no. 277.1*, Acropolis Trench 3, Complex VII), might also have been holed at the umbo but is now broken. It is 0.041 by 0.041 m (Figure 420.12).

There are four *Erosaria* cowries, all of BA4-MB date with two each from Complexes F/E/D and D. The earlier are 0.020 m in length (Figures 451.21, 453.11) and 0.026 m (Figures 451.20, 453.12) and the later 0.019 and 0.024 m

TABLE 29. CATALOGUE OF MARINE INVERTEBRATES AND FRESH-WATER SHELLS

AND FRESH-WATER SHELLS	
MARINE INVERTEBRATES (34 remains)	
9 + Cerastoderma (= Cardium) edule glaucum (Bru 1789) (Common) Cockle; Turkish: açivades 5 deposits (2 LC1, BA2, MB-Mixed, 5 MB) 4 Erosaria (= Cypraea) spurca (Linnaeus, 1758) Cowrie	uguière,
2 deposits (BA4-MB, MB) 3 Columbella rustica (Linnaeus, 1758) Dove shell	
3 deposits (BA2, MB-Mixed, LB) 3 Murex (= Trunculariopsis, = Hexaplex) trunculu	s (Lin-
naeus, 1758) (Rock) Murex; dikenli salyangoz 3 deposits (LB, IA, Mixed H-B)	
2 + Acanthocardia (= Rudicardium) tuberculata (Li 1758) (Rough, Knotted, Warty or Red-nosed) Cockle; a	
2 deposits (BA2?, MB) 2 + Spondylus gaederopus (Linnaeus, 1758) Spiny or Thorny oyster	
2 deposits (both MB) 2 + Glycymeris (= Petunculus) glycymeris (Linnaeus Dog-cockle, Comb-shell, Bittersweet clam	, 1758)
2 deposits (BA4-MB, MB-Mixed) 2 Arcularia (= Nassarius, = Nassa) gibbosula (Li 1758) Nassa or Basket shell	nnaeus,
2 deposits (MB, LB) 2 Cerithium vulgatum (Bruguière, 1792) (Common) Cerith, Horn shell, Needle shell, Dog seytan minaresi 2 deposits (MB, MB-Mixed)	whelk;
1 Luria (= Cypraea) lurida (Linnaeus, 1758) Cowrie, Mediterranean-eyed or Lurid cowrie (MB-Mixed)	
1 Monetaria (= Cypraea) moneta (Linnaeus, 1758) (Money) Cowrie (IA) From the Red Sea.	
1 Euthria cornea (Linnaeus, 1758) whelk (Mixed H-B) 1 bivalve fragment	
(BA4-MB) 1 Eriphia verrucosa (Forskål, 1775) (= spinifrons H (Yellow or Furry) Crab (MB)	(eller)
FRESH-WATER SHELLS (28 remains)	
13 Melanopsis praemorsa (Linnaeus, 1758) 3 deposits (2 LC3, BA2, 2 BA4-MB, 5 MB, 3 Mixed)	МВ-
11 + Unio cf. tigridis Bourguignat complex 10 deposits (4 BA4-MB, MB, MB-Mixed, LB, LB, IA)	3 Mixed
3 Lymnae (BA2)	
1 Theodoxus anatolicus (Recluz, 1841) (MB)	
LC Late Chalcolithic LB Late Bronze Age RA Bronze Age (Early) IA Iron Age	

LC Late Chalcolithic LB Late Bronze Age
BA Bronze Age (Early) IA Iron Age
MB Middle Bronze Age H-B Hellenistic to Byzantine

TABLE 30. MARINE INVERTEBRATES

2 Cerastoderma (1598c.2, 1598f.16) Cerastoderma (1481.1) I Columbella (1409.1) Acanthocardia (277.1) 2 Erosaria (513.4, 520.2) Glycymeris (511.5) Spondylus (500.?) Cerastoderma (502.1) bivalve fragment (736.101) 4 Cerastoderma (709.3) 713.35, 713.52, 729.1)
Cerastoderma (1481.1) I Columbella (1409.1) Acanthocardia (277.1) 2 Erosaria (513.4, 520.2) Glycymeris (511.5) Spondylus (500.?) Cerastoderma (502.1) bivalve fragment (736.101) 4 Cerastoderma (709.3)
I Columbella (1409.1) Acanthocardia (277.1) 2 Erosaria (513.4, 520.2) Glycymeris (511.5) Spondylus (500.?) Cerastoderma (502.1) bivalve fragment (736.101) 4 Cerastoderma (709.3)
2 Erosaria (513.4, 520.2) Glycymeris (511.5) Spondylus (500.?) Cerastoderma (502.1) bivalve fragment (736.101) 4 Cerastoderma (709.3)
Glycymeris (511.5) Spondylus (500.?) Cerastoderma (502.1) bivalve fragment (736.101) 4 Cerastoderma (709.3)
Spondylus (500.?) Cerastoderma (502.1) bivalve fragment (736.101) 4 Cerastoderma (709.3)
Cerastoderma (502.1) bivalve fragment (736.101) 4 Cerastoderma (709.3)
bivalve fragment (736.101) 4 Cerastoderma (709.3)
4 Cerastoderma (709.3)
713 35 713.52, 729.1)
2 Erosaria (682.2, 739.9)
Acanthocardia (713.20)
Spondylus (682.16)
Arcularia (707b.1)
Eriphia (crab; 704.5)
Cerastoderma (694.1)
Cerithium (672.3)
Cerithium (628.2)
Luria (628.7)
Columbella (715.31)
Glycymeris (565.4)
Arcularia (2169.1)
Murex (2098.14)
Columbella (2142.1)
•
Murex (3127.6)
• •

Pk. - Pekmez trenches
Ac. - Acropolis trenches

* from the Red Sea

Level is given for Pk. and Complex for Ac.

TABLE 31. FRESH WATER SHELLS

Period	Trench	Level/Complex	Species (cat. no.)
LC3	Pk.2	VIIA-B	2 Melanopsis (1533.a,b)
BA2	Pk.1	IX-VII	3 Lymnae (1410.1,2,3)
		VII	Melanopsis (1406.9)
BA4-MB	Ac.4	I/E	Unio (314.2)
	Ac.5	I	Unio (525.1)
	Ac.7	Ib/Ia	2 Melanopsis (766.2, 781b.2)
		Ia	Unio (763.4)
	Ac.7	E	Unio (723.21)
MB		D	5 Melanopsis (682.7, 698.100,
			700.3a, 701.14, 759.1)
			Theodoxus (714.20)
	Ac.5		Unio (500.2)
MB-Mixed	Ac.7	\mathbf{B}'	Melanopsis (620.1)
		В	2 Melanopsis (622.2, 622.3)
			Unio (715.32)
LB	Ac.8	A-4 II	Unio (2124G.2)
Mixed LB	Ac.8	A-4	3 Unio (2133.1, 2143C.1,
1			2193B.6)
IA	Ac.9	A-5	Unio (3004.14)

Key as in Tables 29 and 30.

bivalve; each individual composed of 2 valves. Based on valve side and size, all valves here come from separate individuals.

long. The smaller Complex D cowrie has been holed at the small end (Figure 195.2). The hole is 0.003 by 0.003 m, and the area around the hole is ground or polished smooth.

The MB-Mixed *Luria* cowrie fragment (cat. no. 628.7) is 0.032 m long (Figures 195.3, 483.2) and may have been holed at the small end. The IA Red Sea Money cowrie (Figure 195.4) is 0.020 m long and has an irregular hole on the dorsum.

There are three *Columbella*, all of which have an open apex and could have been strung. The largest, MB-Mixed in date, with a preserved length of 0.014 m and a width of 0.011 m, still retains the natural color (Figures 195.5, 483.50). The mixed LB shell is worn, with an abraded hole on the body whorl.

All of the three *Murex* are LB or later. In fact, of the seven post-MB marine shells, three are *Murex*. The LB shell is the smallest, 0.060 m by 0.042 m (Figure 195.6). The IA example is a slightly larger apical fragment and has been burnt. The largest and latest in date is 0.075 by 0.070 m.

The two *Spondylus* valves come from MB. A large lower valve, comes from Complexes F-E and an upper valve, with a naturally ground-down umbo, comes from D (Figure 195.7).

There are two water-worn *Glycymeris* valves, both ground-down and holed at the umbo and probably used as ornaments. A brown BA4-MB shell (Figures 195.8, 451.39, 453.18) is 0.031 by 0.029 m with a 0.0035 by 0.0025 m hole. The bleached-white MB-Mixed shell is slightly larger, 0.031×0.0325 m, with a hole 0.003×0.0025 m.

Both Arcularia in the collection are holed. The BA4 shell has been ground-down on the dorsum and the LB example has a hole on the body whorl opposite the mouth (Figure 195.9). The lip is broken but the shell is otherwise unmodified.

There are two MB, MB-Mixed *Cerithium*. The earlier, from Complex C, is a very water-worn shell with worn holes on the body and could have been strung (Figures 195.10, 478.22). The Complex B' shell is unworn and still retains its original color (Figures 195.11, 483.46).

One unmodified but very worn *Euthria* comes from a Hellenistic-to-Byzantine level (Figure 195.12). A bivalve nacre layer fragment of BA4-MB date is not specifically identifiable (Figure 472.23). An *Eriphia* crab claw, 0.021 m, comes from MB (Figure 195.13).

There are 28 fresh-water shells from 16 deposits. Most common are 13 *Melanopsis* from six levels or complexes. One MB-Mixed shell (cat. no. 622.2) has been burnt gray (Figure 483.52). Two shells, one BA4-MB (cat. no. 766.2, Figure 469.19) and one MB-Mixed (cat. no. 622.3, Figure 483.48), have holes on the body whorl but these are naturally worn and not man-made. Five *Melanopsis* and the only *Theodoxus*, which is not modified, come from BA4-MB.

There are 11 fragmentary *Unio* valves from nine deposits. One large fragment from the IA (Figure 195.14) has possibly been cut perpendicular to the distal end. One fragment from BA4-MB Complex E is worn and abraded.

The three *Lymnae*, of BA2 date, were found in a pithos containing multiple burials (Figure 369.9). It is unclear why these shells are present here; they are not much of an offering compared to the imported marine shells.

Unio mussels are eaten in many parts of the Mediterranean, but Melanopsis, Theodoxus and Lymnae have never been eaten. All may come from the Maeander river or another fresh-water source.

At least one *Cerastoderma*, one *Erosaria*, all three *Columbella*, both *Glycymeris* and *Arcularia*, one *Cerithium* and the *Monetaria* are holed and were probably used as personal ornaments. One *Acanthocardia* and the *Luria* may have been holed; a total of 34 % of the marine shells were probably holed. The BA4-Mixed Complexes F/E/D produced a holed *Cerastoderma* and *Glycymeris* and Complex D a holed *Erosaria* and *Arcularia*. Acropolis trench 9 produced the only Red Sea shell, a burnt *Murex*, and a *Unio* which may have been worked, all of IA date.

There are very few shells reported from the other prehistoric sites in Turkey. Aceramic Neolithic Suberde, at least 25 miles from the Mediterranean in southern Turkey, produced 148 shells including four holed *Cerastoderma* and 16 + unholed examples, a *Columbella* with an open apex, a holed *Luria*, and a water-worn *Murex*. There are numerous *Unio* and also a holed *Monetaria*.

Neolithic Çatal Hüyük, 75 miles from the sea, produced whelks, cockles and other shells (Mellaart 1962:54, Pl. Vb, 1963:99; 1966:183). The ochre burial of a young woman (?) below House E IV, 8 produced a *Columbella* with an open apex and holed on the side (1963:99, Pl. XXVIIb, at left, 1967: Pls. 81, bottom, XV, center). The second burial from Shrine VII, 10, has the head coated with red ochre and « two large sliced cowries of Red Sea type had dropped out of the eye sockets » (Mellaart 1966:183, Pl. Lb). It is not clear from the published photograph if these are from the Red Sea or Mediterranean. Perforated pendants of nacre (mother-ofpearl) were used as burial gifts (1966:183) and freshwater mussels were used as paint containers (1962:56).

LN Erbaba on Lake Beyşehir and about 75 miles from the sea produced holed *Cerastoderma*, a *Murex*, worked *Columbella*, *Theodoxus* and *Unio*, including a *Unio* pendant (personal analysis and communication from J. Bordaz, 20 April 1980).

A water-worn *Murex* with drilled holes was found at Neolithic Çayönü Tepesi in eastern Turkey (Çambel and Braidwood 1972:117), over 225 miles from the Mediterranean.

At least one Arcularia, ground-down on the dorsum, comes from prehistoric Kurban Hüyük on the Turkish Euphrates, over 50 miles from the Mediterranean (personal analysis).

At LN Hacılar, over 50 miles from the sea, « fossil oyster shells were collected for the manufacture of rings and bracelets » (Mellaart 1961:56). There are four recent *Spondylus* pictured, incorrectly identified as three fossil *Gryphaea* (?) lamps which « have the narrow curving end cut off » (Mellaart 1970:161, Pl. CXVIIa). What is probably a *Murex* is also shown (at center). Fresh-water shells were used at this time for the making of pendants (Mellaart 1958: Pl. XXXIIc, center, 1961:46, 1970:160, Fig. 176, Pl. CXXIVa-h).

The Early Chalcolithic here produced three holed cockles from Room 5 (1970:159, 1961:46) and a fragment of a ring carved from a shell (1970:161).

Can Hasan, about 25 miles from the sea, produced various worked shell objects from the Middle Chalcolithic (French 1963:34, Pl. IIb-e) including one made from *Glycymeris* (c) and the other probably made from *Unio*. J. Mellaart (1975:124) incorrectly says they are « cardium shells with faces cut in them. »

Alaca Höyük, over 225 miles from the Mediterranean, produced a holed Red Sea *Engina mendicaria* Lam. from a Chalcolithic royal tomb (Koşay 1951: Pl. CCVII, at left, third row from top).

A LC room at Mersin on the south coast produced a *Glycymeris* holed at the umbo (Garstang 1953:172, Fig. 109). The shells from nearby Gözlü Kule, Tarsus, include a fossil (?) *Acanthocardia* holed at the umbo (Goldman 1956:340, Fig. 454, 7) of the EBII and one or more *Cypraea* cowries.

The Neolithic at Poliochni on the northern Aegean island of Lemnos produced many worked *Spondylus* objects (Bernabó-Brea 1964:671, Pls. CLXXVIII, 11, CLXXIX, 23-4, 26-7) and a ? *Luria* holed at one end from megaron 832 (Pl. CLXXIX, 28). The Early Bronze Age (EB) here produced a small *Spondylus* pestle (National Archaeological Museum, Athens, Case 41, 7278).

The Neolithic or Chalcolithic fill in the Lower Cave at Ayia (Aghio) Gala on the northwest coast of Chios produced a water-worn *Glycymeris* holed at the umbo (Hood 1981:65, Pl. 11b, lower left, personal analysis) and a holed cockle. The EB at Emporio on the south coast produced a water-worn *Spondylus* valve, not an oyster as published (Hood 1982:677, Pl. 142, 64), *Spondylus* pendant (58), and pounder (57), a *Cerastoderma* with a large hole below the umbo (65) and a number of holed *Cyclope* (personal analysis), a species related to *Arcularia* (Reese, in press).

Thermi on Lesbos, mainly EB, produced *Cerastoderma*, *Acanthocardia*, *Spondylus*, *Glycymeris* and *Cerithium* (Lamb 1936:217) and a *Spondylus* pounder (*Ibid.*, 195, Pl. XXIII 30.56, Lamb 1928-30:50, Fig. 18, 7).

H. Schliemann's excavations at Troy in the Troad, mainly EB, produced *Cerastoderma*, *Columbella*, *Murex*, *Spondylus*, *Cerithium*, *Luria* and holed *Glycymeris*, among other species (1881:115-6). C. Blegen's excavations there yielded various species including *Cerastoderma*, *Murex*, *Cerithium* and at least one holed *Arcularia* (personal analysis).

Alishar Hüyük, 180 miles from the Mediterranean, spans the Chalcolithic to Byzantine, yielding about 125 recent marine shells. Most common are *Arcularia* (23 noted), sometimes holed on the dorsum (von der Osten 1937:326-7, Fig. 259), with some ground-down on the dorsum in the Roman-Byzantine period (*Ibid.*, d204, d393).

There are nine cowries, with seven Hittite and two post-Hittite-Phrygian. There are at least two Hittite Luria with one holed (d2561) and the other with an open dorsum (d2600). There are also at least two Red Sea Cypraea annulus L. (Money cowrie or Gold-ringer), both ground-down on the dorsum, with one Hittite (d1892) and the other post-Hittite (d1943).

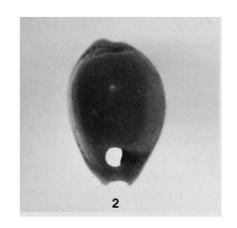
There are two *Cerastoderma*, one Hittite example with a recent hole below the umbo (d2594) and one water-worn Post-Hittite example (d1327). There are 11 *Glycymeris* ranging from the Chalcolithic to the second half of the first millennium B.C. There is one water-worn of the Hittite period (d2809) and one Post-Hittite example holed by a carnivorous gastropod (e1752).

The ten *Murex* range from the Hittite to Roman-Byzantine with one Hittite *Murex brandaris* L. (d2658) and one water-worn *Murex trunculus* from the Hittite (e1212) and Roman-Byzantine (e605).

195. Selected Shells of the Bronze Age; all are marine species except = no. 14.

- 1. 502.1 Acropolis trench 5 (MB-Mixed), Cerastoderma, holed
- 2. 682.2 Acropolis trench 7, Complex D (MB), *Erosaria*, holed
- 3. 628.7 Acropolis trench 7, Complex B', (MB-Mixed), Luria, holed
- 4. 3055.16 Acropolis trench 9, Complex A-5, (IA), Monetaria, holed
- 5. 715.31 Acropolis trench 7, Complex B (MB-Mixed), *Columbella* open apex
- 6. 2098.14 Acropolis trench 8, Complex A-4, Phase I (LB), Murex unmodified
- 7. 682.16 Acropolis trench 7, Complex D (MB), Spondylus
- 8. 511.5 Acropolis trench 5, Complex E (BA4-MB), Glycymeris, holed umbo
- 9. 2169.1 Acropolis trench 8, Complex A-4, Phase II (LB), Arcularia, holed
- 10. 672.3 Acropolis trench 7, Complex C (MB), Cerithium, water-worn
- 11. 628.2 Acropolis trench 7, Complex B', (MB-Mixed), Cerithium, unmodified
- 12. 2.2.5 Pekmez trench 2, Level 2 (H-B), Euthria, unmodified
- 13. 704.5 Acropolis trench 7, Complex D (MB), Eriphia, crab claw
- 14. 3004.14 Acropolis trench 9, Complex A-5 (IA), Unio, cut edge.

















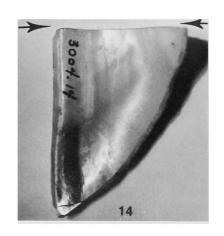












There are three *Cerithium* from the Hittite period; the one illustrated (d1351) has an open lip. There is one *Spondylus* upper valve from the Hittite period (Fig. 260 d2444) and at least one incorrectly identified contemporary *Melanopsis* (Fig. 259 e633).

There are 27 fresh-water bivalves (probably mainly *Unio*) ranging in date from the Chalcolithic to the second half of the first millenium. Some have one or two holes on the body (Fig. 260, right).

Earlier excavations in stratum II (earlier Bronze Age) produced various shells, including: three holed *Arcularia* (Schmidt 1932: Fig. 234 b2591-2, b1003), a holed cowrie (b1248), an *Acanthocardia* with a hole at the umbo (b1496), a water-worn *M. trunculus* and two water-worn columella fragments (b1697, b1698, b1994), a *M. brandaris* (b2123), five *Columbella* (b1156, b1705, b1551, b1872, b2155) and one holed *Cerithium* (b1247).

A water-worn trunculus columella comes from strata III and IV (mixed to Hittite) (276, Fig. 376). Stratum V (ca. 1200-333 B.C.) produced a brandaris (Schmidt 1933: Fig. 137 b544) and a C. annulus with an open dorsum (Ibid., b170). Stratum VI (Hellenistic to Byzantine) yielded a cowrie with a ground-down dorsum (Fig. 159 b1743).

Excavations at Boğazköy, 225 miles from the Mediterranean, produced a holed *brandaris* from the early excavations (Vogel 1952:152, Pl. 56, 21). Later seasons produced two holed *Arcularia* and a holed ? fossil *Acanthocardia*, all burnt, from a 1800 B.C. deposit at Osmankayası (Boehmer 1972:233, Pl. XCVIII, 2462-4, Bittel *et al.* 1958: Pl. XXII, 6). There are a holed *Arcularia*, waterworn *trunculus* and *Glycymeris* from a 1200 B.C. deposit at Boğazköy (Boehmer 1972:233, Pl. XCVIII, 2465, 2467, 2469) and a contemporary deposit produced a cowrie holed at one end (Boehmer 1979:64, Pl. XL, 3668).

Various Hittite burials at Gordion, about 200 miles from the sea, produced shells. The child's burial H 23 produced a necklace of 14 *Arcularia*, four *Melanopsis* and three or four *Theodoxus* (Mellink 1956:40, Pl. 22c; six *Arcularia* personally analyzed). The pithos burial H 24 produced one holed *Arcularia* (*Ibid.*, Pl. 21w) and others are known from burials H 33 and H 45. The pithos burial H 4 yielded several shells, including at least one holed cowrie (Pl. 22a).

The Middle Hittite Tomb R.W.1 at Carchemish on the Turkish-Syrian border, 100 miles from the Mediterranean and over 500 miles from the Red Sea, produced at least one holed cowrie in a necklace group (Woolley 1921:134, Pl. 27a, 9) and a holed *Engina* from another necklace (*Ibid.*, 13, lower right).

Beycesultan, over 100 miles from the Mediterranean, produced a necklace offering from the LB Right-hand shrine which includes holed *Arcularia* (mainly), *trunculus*, *Columbella*, etc. (Lloyd and Mellaart 1958:110, Pl. XXVIIIa).

The Archaic Artemisia (ca. 700-550 B.C.) at Ephesus produced at least one holed Arcularia and four holed Luria and Cypraea which «appear to have been suspended from fibula bows » (Hogarth 1908:217, Fig. 44).

The Acropolis of Lindos on Rhodes produced seven trunculus, two Spondylus and two Glycymeris, with one water-worn and holed at the umbo (Blinkenberg 1931:117-8, Pls 17, 548, 550) as well as worked and unworked Red Sea Tridacna Giant clams.

Tombs and other deposits at Vroulia in south Rhodes produced three *trunculus* (one holed), three *Luria* (one holed) and holed *Glycymeris* and *Cerithium* (Kinch 1914: 160-1, Pls 24, 1-4, 33 p5-6). There are also unmodified *Tridacna* and *Pterocera lambis* (probably the Spider conch *Lambis truncata sebae*) from the Red Sea.

Various tombs at Kamiros on the west coast of Rhodes produced shells, including Grave CVII which produced *Luria*, *Glycymeris* and others (Jacopi 1931:214, Fig. 223), Grave XX, an amphora with a child and two *Glycymeris* in it (Jacopi 1933:72, Fig. 79) and Grave XXIII where a pithos contained a baby and a *Glycymeris* (*Ibid.*, 511, Fig. 39).

A votive deposit at Kamiros produced three cowries, including an unholed *Luria* and one holed smaller species and one possible *Arcularia* (365, Fig. 108) and also two *trunculus* with one holed and a fresh-water bivalve (364, Fig. 109).

Greek Emporio on Chios produced 16 Murex from the Athena Temple dated to ca. 690-660 B.C. and some Glycymeris and a fragment of what may be a Tridacna from the Harbour Sanctuary of ca. 660 B.C. (Boardman 1967:243).

Engraved *Tridacna* shells are known from Bayraklı (Smyrna) (2), Kale Tepe (Milet) (1), and the coast of Turkey (1) and from the islands of Samos (16), Cos (1) and Rhodes (Kamiros (1), Lindos (10), unprovenienced (1)) (Stucky 1974:36-47, 55, 92-3 for further references and description). Polished examples are known from Lindos (4) (*Ibid.*, 56) and unworked examples from Lindos (1), Chios (above) and Samos (1) (p. 57) with an additional example recently published from Samos (Boessneck and von den Driesch 1983:22-4, Pl. 4, 1). All *Tridacna* date between the first third of the 7th century and about 400 B.C.

The study of shells from archaeological sites provides information on food and the natural environment or, as in the case of the Aphrodisias shells, information on personal ornament and culture contact or « trade ». The presence of Red Sea shells at Aphrodisias and other sites is of particular interest.

For references, see general bibliography.

ARTIFACT INDUSTRIES

Ground Stone, Chipped Stone, Worked Bone, Metal and Ceramics



196. Acropolis trench 7; Bronze Age 4 - Middle Bronze Units 648-649 Artifact Assemblage (Photo: Nina Joukowsky).

TABLE 32. FREQUENCY OF OCCURRENCE OF PERIOD BY CATALOGUED MATERIAL

Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4 MB	MB	MB- Mixed	LB	IA	TOTAL	%
Ground St	one	88	60	67	22	22	52	122	104	178	245	165	44	53	1222	25
Chipped S	tone	103	71	83	24	12	46	98	105	153	134	84	56	98	1067	22
Bone		9	1	2		1	6	5	3	21	1	31	2	1	83	2
Metal		1		1	3		1	7	7	8	8	26		11	73	2
Shells		2		2			6	1		10	19	10	7	3	60	1
Ceramics	28	184	165	79	35	59	185	137	154	270	163	289	258	288	2294	48
Total	28	387	297	234	84	94	296	370	373	640	570	605	367	454	4799	
070	0	8	6	5	2	2	6	8	8	13	12	13	8	9		100

INTRODUCTION

The principal objective of the Aphrodisias prehistoric excavations from their beginning has been to discover well-stratified remains of the community for the periods that antedate the site's classical and post-classical remains. The need for a record of successive periods of southwestern Anatolian cultural history is obvious. While there are stratified remains that document fairly well the sequence of architectural structures and artifact development during the later Hellenistic, Roman and Byzantine periods, the information available on artifact styles characteristic of the prehistory and the Maeander Valley is limited to one systematically excavated site Beycesultan.

This part will concentrate respective artifact typologies, laboratory analyses of the obsidian, and the ceramic corpus so that these studies may become a part of the archaeological record. It is hoped that this will contribute to a growing understanding of the life and culture of the Aphrodisians, and will characterize the site's artifact repertoire.

Artifact industries encompass a wide band of specific topics which we have singled out for separate examination. Industries start with ground stone — including tools and weapons, anthropomorphic figurines, disks, motars, querns, and pestles. This is followed by such topics as chipped stone, worked bone, metal, and finally by the ceramics of Aphrodisias including the type series and pottery artifacts that are outside the typology and deserve special mention, such as spindle whorls and loom weights. Parallels are presented whenever possible, but comprehensive and exhaustive correspondences with other sites are beyond the scope of this volume.

Artifact Analysis, 1975-1982

When this present study was begun in 1975, the first step in raw data analysis involved the classication of several kinds of artifacts. All of these analyses were carried out in the field laboratory beginning with experimental sortings during the 1975 season. The artifact industries defined at an early stage (1975) were pottery, ground stone, chipped stone, bone, shell, and metal objects. After

the preliminary analysis in 1975, more detailed studies were planned for the following field seasons: pottery 1976-1980, ground stone 1978-1982, chipped stone 1977-1981, and bone, shell, and metal objects were studied in 1979-1980. Analysis of the obsidian was undertaken in 1981-1982 and the faunal remains were also studied during that time. Constituent analyses of the composition of the metal and neutron activation analysis of the obsidian were performed during 1981-1983.

All artifact classifications had two objectives: to provide a chronological framework based on a typological analysis and to create a functional framework based on form analysis. The typological analysis began by dividing the collection into a series of categories and types, primarily on the basis of function and shape, plus differences in surface characteristics of style and technology. Whenever possible, a name was assigned to an object, i.e., spindle whorl, loom weight, based on assumed function. These classes and types served as the ideal for the classification of the other artifacts. And their frequencies, when set against the stratigraphy, formed the basis for their conclusions as to which types were manufactured and used in earlier periods at Aphrodisias and those which were made and used in later times.

The chronological evaluation relied on the unit proveniences and associations of the artifacts themselves, as well as on cross-checks with similar artifacts dated from other Anatolian sites. As a result, Aphrodisias artifact types were ordered from earliest to latest in a sequence.

In my home study of 1977, 1980-1982, pottery analysis received major emphasis; it was at that time that the computer sorted the basic information for the preliminary chronological and functional evaluations of the ceramics. Independent, and also interdependent studies were undertaken on other classes of data, which were also subjected to similar chronological and functional analyses in order to cross-check the evaluations based on the pottery analysis. Before the presentation of each class of material analysis, some of the field methodology is described. Table 32 presents the frequency of occurrence for catalogued materials.

A. GROUND STONE

A study of the site's ground stone tool assemblage should be geared to the geological interpretation of the area. Therefore, in 1982, one of our areas of inquiry was a ground search survey and rock sources in the Dandalas Valley and the area around the site (see geology, Part 1).

This geological survey confirmed that the majority of the rocks present in the ground stone assemblage were available within the immediate vicinity of Aphrodisias. The exceptions are greenstone, carnelian, hematite, volcanic tufa, basalt, and an unidentified hard black stone with a high luster. Most of the ground stone tools were manufactured from serpentinite, marble, (dark blue, black, white) and of various types of mica schists all of which locally occur. Therefore, it is likely that these stones were quarried nearby and worked on the site itself. Table 33 presents the frequency of occurrence of raw materials used for ground stone artifacts.

TABLE 33. FREQUENCY OF OCCURRENCE OF RAW MATERIALS

Period : LN	(?) LO	C1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	970
Trench																
Serpentinite	21	1	27	17	8	6	17	38	29	47	71	47	20	18	366	30
Schist	27	7	10	23	4	5	13	28	20	40	65	34	9	10	288	24
Marble	32	2	12	20	2	7	17	39	40	55	54	56	12	14	360	30
Greenstone										1	1	1		1	4	0
Calcium Carbon	nate				2			2	5	10	8	4	1	1	33	3
Other	8	8	11	5	6	4	5	9	8	21	46	20	2	6	151	12
Unidentified			2					6	2	4		3		3	20	1
Total	88	8	60	67	22	22	52	122	104	178	245	165	44	53	1222	
9/0	7	7	5	5	2	2	4	10	9	15	20	13	4	4		100

TABLE 34. DISTRIBUTION OF TOOLS ACCORDING TO TRENCH AND PERIOD

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	%
Trench																
Pek 1						3	16	10							29	2
Pek 2		88	60	67	22	19	16	17	14			21			324	27
Ac. 1-2															_	
Ac. 3							9	16	42	11	10				88	7
Ac. 4								59	34	57	10				160	13
Ac. 5										40	21	31			92	8
Ac. 6									2					3	5	0
Ac. 7										70	204	113			387	31
Ac. 8													44		44	4
Ac. 9														50	50	4
K-1						1		2							3	0
K-2							10	20	10						40	3
Total		88	60	67	22	22	52	122	104	178	245	165	44	53	1222	
07/0		7	5	5	2	2	4	10	9	15	20	13	4	4		99

The coarse texture of many of the ground stone tools does not always permit a clear distinction between deliberate pecking or chipping for shape, and accidental chipping due to wear — especially if we assume that some of these objects were used for heavy work. In some cases, particularly when marble or mica schist was used, the natural breakage of the stone cannot always be distinguished from that caused by man. Therefore, wear-pattern analysis will only be referred to in its broadest sense, since it cannot be assumed that these artifacts show signs of use.

The Late Chalcolithic period at Aphrodisias marks the very first appearance of stone tools shaped by pecking and grinding and, in some cases, polishing to achieve final form and finish. These implements seem to be woodcutting or woodworking tools.

Ground stone objects accounted for 19 % of the artifacts catalogued. Many were inventoried and catalogued when they were excavated but more than one-third

of the total had to be drawn and catalogued by our team during the 1977-1978 site study. In the field notebooks, the excavators maintained a separate catalogue for outsized stone tools, but this listing was found only for Acropolis trenches 3, 4, 5 and 7.

The prehistoric deposits at Aphrodisias produced 1222 ground, pecked and polished stones including figurines, grindstones, axes, adzes, whetstones, hammerstones and outsized ground stone tools. Table 34 presents by trench the frequencies of occurrence of ground stone tools found in the prehistoric levels. All ground stone was classified into 14 object classes (plus one miscellaneous category) according to overall shape and probable function. Objects of ground stone were significantly most numerous and varied in the Bronze Age 4-Middle Bronze and Mixed Bronze Age periods. Table 35 gives an overall summary of tool type per trench. The following discussion surveys each of these artifact classes.

TABLE 35. FREQUENCY OF OCCURRENCE OF TOOL TYPES BY TRENCH

	Figurines	Grindstones	Axes	Adzes	Whetstones	Hammerstones	Polishing Pebbles	Smoothed Stones	Disks	Balls and Bolas	Beads	Pestles	Mortars + Querns	Pivot Stones	Miscellaneous		
Trench																TOTAL	%
Pek 1		2	1		3	2	2	12	1		2				4	29	2
Pek 2	6	34	18	5	37	22	21	66	20	3	2	2	6	2	80	324	27
Ac. 1-2																	
Ac. 3	8	25	2	1	10	1	1	17	2	7	1		1	1	11	88	7
Ac. 4	10	57	9	1	9	4	2	27	3	3			11	2	22	160	13
Ac. 5	7	15	4	1	17	4	5	.15	3	5				1	15	92	8
Ac. 6									1						4	5	0
Ac. 7	25	101	10	9	48	25	18	75	10	7		1	1	1	56	387	32
Ac. 8	1	7	2	1	7	5	1	8	1	1			1		9	44	4
Ac. 9		15	2	2	9	9		3		1					9	50	4
K-1			1			1									1	3	0
K-2		8	3	2	5	1	1	4	2						14	40	3
Total	57	264	52	22	145	74	51	227	43	27	5	3	20	7	225	1222	
070	5	22	4	2	12	6	4	19	4	2	0	0	2	0	18		100

1. Figurines

At Aphrodisias there are 62 figurines which are highly stylized anthropomorphic renderings. Table 36 is a listing of the frequency of occurrence by trench. All but four are manufactured from stone and all but one are abstract representations of the human figure, except cat. no. 689.1* from Acropolis trench 7 (Figure 238) which is a fragmented ceramic animal's head.

Ten distinct types plus one miscellaneous type are represented. These include shape-types that have already been recognized in Anatolian and eastern Aegean deposits. The most conspicuous groups are: a) the notched-shouldered; b) the « Kilia »¹¹²; c) amorphous or pebble; d) « fat lady » or natural calcium carbonate; e) stalk-headed; f) figure-8; g) notched-waisted; h) double notched-waisted; i) Kusura; j) owl-faced; k) several miscellaneous types, and 1) those that are too fragmented to classify. A summary of the Late Chalcolithic types, types a-e, has been published by the author (Late Chalcolithic Figurines from Aphrodisias in Southwestern Turkey, in Archéologie au Levant, Recueil R. Saidah. 1982b, CMO 12. Arch. 9. Lyon).

It appears that each of these figurines was used at different times: types a-c during the Late Chalcolithic, whereas types d and e, the « fat lady » and the stalk-headed types, in the Early Bronze Age. Appearing later in the Aphrodisias stratigraphy are the types f-h, the Kusura and owl-faced types.

All of these figurines seem to be part of a co-existing tradition that was part of an intercultural network.

Whether they were cult objects, images of mythic personages or supernatural powers, reminders of the dead, toys, or had some other function, is not known. Little can be said about the status these figures held in the community, and no specific use can be suggested from their in situ positions. Geographical and economic conditions lead us to postulate that the prehistoric Aphrodisian farmers and animal breeders must have held some belief in a divine protective power over plant and animal fertility. It is clear, however, that they must have been a living part of the Late Chalcolithic-Bronze Age domestic artifact repertoire for they were found in the settlement itself.

Whether they are locally developed or derived, the fact that they appear consecutively in the Aphrodisias prehistoric deposits, is most important. Another consideration is the variety of shapes — the sculptural medium demonstrates a greater diversity than the ceramic development at the site. It might be reasoned that the beliefs and customs which conditioned these figurines were less conservative than the traditions that determined the form and ornamentation of the pottery or other artifact repertoires.

The ten types listed in Table 37, follow in the order of their type, catalogue numbers, and their period assignment. Brief comments about each type are followed by a statement by P. Getz-Preziosi. 113

- 112. French (1968:98, fig. 91) refers to the Kilia type as the Hanaytepe type.
- 113. Over many years, my work has greatly profited by the encouragement of Pat Getz-Preziosi. I would like to acknowledge the interest and care she has taken in making this contribution.

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	9%
Trench	·															
Pek 1																
Pek 2		3		1	1	1									6	10
Ac. 1-2														ĺ		
Ac. 3								1		7				1	8	14
Ac. 4								1	4	5				ļ	10	18
Ac. 5										3	2	2			7	12
Ac. 6																
Ac. 7										3	19	3			25	44
Ac. 8													1		1	2
Ac. 9																
K-1																
K-2													 .			
Total		3		1	1	1		2	4	18	21	5	1		57	
0%		5		2	2	2		3	7	31	37	9	2			100

TABLE 36. FREQUENCY OF OCCURRENCE OF FIGURINES

TABLE 37. FIGURINES BY SHAPE TYPES (All are stone unless otherwise noted)

TYPE A: NOTCHED-SHOULDERED FIGURINES

Cat. no.	Trench	Period	Illustration
1599c.4	Pekmez 2	LC1	Figures 245, 376.7
348.1	Acropolis 4	BA4	Figures 201, 437.15, 438.23
8.1	Acropolis 3	BA4-MB	Figures 199, 202, 431.37, 433.3
322.3	Acropolis 4	BA4-MB	Figures 206, 446.38,
322.6	Acropolis 4	BA4-MB	Figures 200, 202, 203 ?, 446.29, 449.9
<i>517.1</i>	Acropolis 7	BA4-MB	Figures 451.35, 453.10
749.1	Acropolis 7	BA4-MB	Figures 204, 469.1
762.2	Acropolis 7	BA4-MB	Figures 469.7
713.4	Acropolis 7	MB	Figures 205, 471.65

TYPE B: KILIA FIGURINES

Cat. no.	Trench	Period	Illustration
1598e2.5	Pekmez 2	LC1	Figures 197, 207,
1598a.3	Pekmez 2	LC1	379.31, 385.47 Figures 198, 208,
			380.15, 385.51

TYPE C: PEBBLE FIGURINES

Cat. no.	Trench	Period	Illustration
1519.10	Pekmez 2	LC3	Figures 217, 397.27
368.1	Acropolis 4	BA3	Figures 212, 436.54, 437.23
500.101	Acropolis 5	BA4-MB, MB	Figures 451.30, 455.21
507.1	Acropolis 5	BA4-MB, MB	Figures 214, 451.29, 453.9
703.11b	Acropolis 7	MB	Figure 471.32
712.1	Acropolis 7	MB	Figures 215, 471.24
713.100	Acropolis 7	MB	Figures 209, 471.23
741.2	Acropolis 7	MB	Figures 210, 471.29
686.1	Acropolis 7	MB	Figure 478.9
697.2	Acropolis 7	MB	
686.2	Acropolis 7	MB	Figure 478.7
644.1	Acropolis 7	MB-Mixed	Figures 216, 480.9

TYPE D : « FAT LADY » OR NATURAL CALCIUM CARBONATE FIGURINES

Cat. no.	Trench	Period	Illustration
1516.3	Pekmez 2	LC4	Figure 222
335.2	Acropolis 4	BA4	Figures 219, 437.5, 438.21
6B.3	Acropolis 3	BA4-MB-Mixed	Figure 434.6
6B.1	Acropolis 3	BA4-MB-Mixed	Figure 434.11
8C.2	Acropolis 3	BA4-MB-Mixed	Figures 221, 431.40, 433.9
8C.1	Acropolis 3	BA4-MB-Mixed	Figures 220, 431.39, 433.8
519.1	Acropolis 5	BA4-MB-Mixed	Figure 460.7
471.4	Acropolis 5	MB-Mixed	Figure 459.55
575b.7	Acropolis 7	MB-Mixed	Figure 218

TYPE E: STALK-HEADED FIGURINE

Cat. no.	Trench	Period	Illustration
1524c.1	Pekmez 2	BA1	Figures 223, 403.7

TYPE F: FIGURE-8 FIGURINES

Cat. no.	Trench	Period	Illustration
333.2	Acropolis 4	BA4	Figures 230, 437.2, 438.24
327.1	Acropolis 4	BA4	Figures 229, 437.6, 438.22
317.1	Acropolis 4	BA4-MB	Figures 226, 446.36, 449.15
322.2	Acropolis 4	BA4-MB	Figures 225, 446.37
313.5	Acropolis 4	BA4-MB	Figures 441.7, 446.28
682.5	Acropolis 7	MB	Figures 224, 471.34
713.13	Acropolis 7	MB	Figure 471.66
713.22	Acropolis 7	MB	Figures 227, 471.4

TYPE G: NOTCHED-WAISTED FIGURINES

Cat. no.	Trench	Period	Illustration
262.2	Acropolis 3	BA3	
262.2 311.2	Acropolis 4	BA4-MB	Figures 231, 441.15, 446.30
702.10	Acropolis 7	MB	Figures 232, 471.25

TYPE H: DOUBLE-NOTCHED WAISTED (both sides double notched) FIGURINES

Cat. no.	Trench	Period	Illustration
686.3	Acropolis 7	MB	Figures 233, 478.26
628.3	Acropolis 7	MB-Mixed	Figures 234, 482.27

TYPE I: KUSURA FIGURINES

Cat. no.	Trench	Period	Illustration
231.3 339.4	Acropolis 3 Acropolis 4	BA4 BA4	Figure 430.15 Figures 235, 437.14, 438.20
7C.3	Acropolis 3	BA4-MB-Mixed	Figures 236, 431.38, 433.4

TYPE J: OWL-FACED FIGURINE

Cat. no.	Trench	Period	Illustration
575.1	Acropolis 7	MB-Mixed	Figures 237, 486.16

MISCELLANEOUS FIGURINE TYPES

Cat. no.	Trench	Period	Illustration
565.3 (ceramic)	Acropolis 7	MB Mixed	Figures 239, 486.8
689.1 (ceramic)	Acropolis 7	MB	(animal head) Figures 238, 478.11, 485.12

FIGURINES TOO FRAGMENTED TO CLASSIFY

Cat. no.	Trench	Period	Illustration
520.1	Acropolis 5	MB	Figures 240, 451.36, 453.8
486.3	Acropolis 5	MB	Figure 459.56
700.6	Acropolis 7	MB	-
706b.1	Acropolis 7	MB	Figure 471.30
713.7	Acropolis 7	MB	Figure 471.68
686.2	Acropolis 7	MB	Figure 478.7
709.1	Acropolis 7	MB	Figures 241, 471.35
647.1	Acropolis 7	MB-Mixed	Figure 486.14
2088.2	Acropolis 8	LB	-

Type a) The Notched-shouldered Figurines

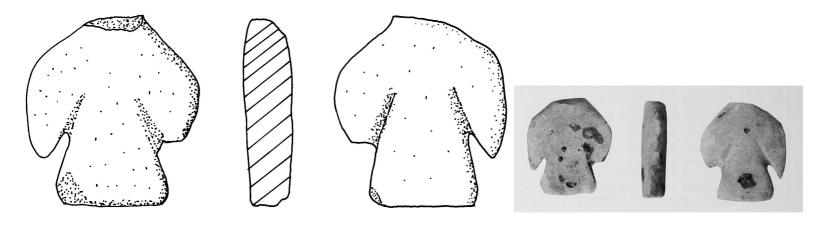
These are schematized figurines with rounded diskshaped heads and plank-like armless torsos that are reduced to a non-descript mass with little articulation. The shape is a figure-eight with a notched separation between the head and the body. Nine examples of this type were found, and all were manufactured from schist.

Typical of this figurine type is cat. no. 1599c.4 (Figures 245, 376.7) from Pekmez trench 2, Late Chalcolithic 1. It is small, measuring 0.053 m, and flat in section, being 0.008 m, and made of blue-gray schist. 114 It is the earliest excavated figurine found at the site and was recovered in Level VIIIB between a -8.62 and -8.98 m depth below the Pekmez trench 2 subdatum. The surface of this figurine exhibits traces of ancient abrasive tool marks, the front is more smoothed than the back. At first glance this figure resembled a notched whetstone, but the placement of the notches and the round outline of both head and the shoulders were purposefully created.

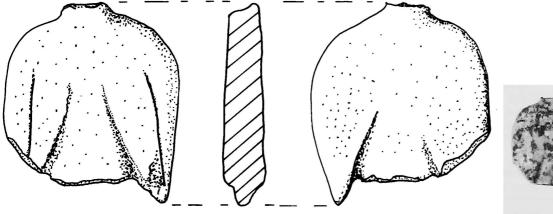
114. This figurine was originally classed by the author (Joukowsky 1982b:90) as a figure-8 type.

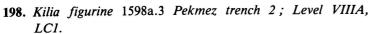
In his study of Early Cycladic figurines, Colin Renfrew (1969a:32) states that the earliest type of such figures is found in Troy I contexts. Many important questions regarding the place of origin of the type of figure, at this point, must remain unanswered. We can only suggest that in our stratigraphic context, it precedes the « Kilia » and « fat lady » types, and enjoys belonging to the earliest developmental phase of the Late Chalcolithic 1 and continues into the Middle Bronze Age periods.

115. Renfrew (1969:32) continues to suggest their interconnections: « The extent of Bulgarian influence on Anatolia at the end of the Chalcolithic period has yet to be established (cf. Mellaart 1960b: 270), but the close similarity between the finds of Karanovo VII or Dipsiskata Mogila and those of Troy I and Thermi indicate that there is at least a possibility of Bulgarian Chalcolithic traditions surviving into the Anatolian, and hence the Aegean Early Bronze Age. In this case the similarity between the Cycladic and the Bulgarian figurines would not be fortuitous. The Bulgarian figures could be prototypes for the folded-arm position both in the Cycladic and the Hasanoglan figure. All this is of course hypothetical at the moment, and will remain so until we know more of Aegean/Anatolian/Balkan contacts at this time. But it is, perhaps, worth remembering that what may first appear to be somewhat superficial similarities may have a genuine historical cause».

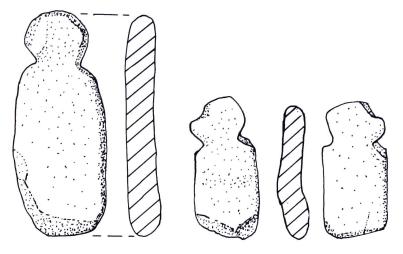


197. Kilia figurine 1598e2.5 Pekmez trench 2; Level VIIIA, LC1.





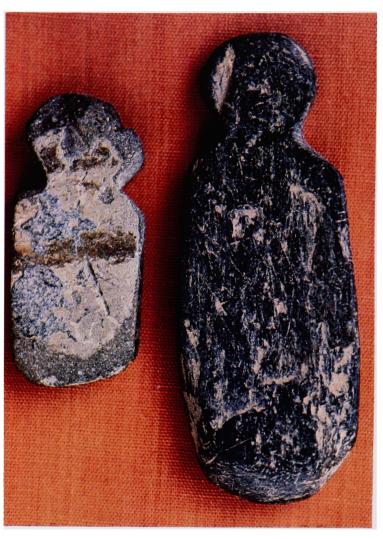




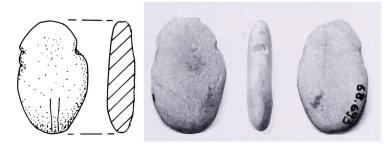
199. Figurine 8.1 Acropolis trench 3; BA4.200. Figurine 322.6 Acropolis trench 4; BA4-MB.



201. Figurine 348.1 Acropolis trench 4; Complexes II-III, BA4.



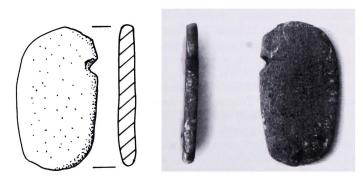
202. Figurines 322.6 and 8.1 Acropolis trenches 3-4.



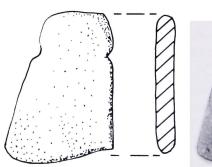
203. Figurine 517.1 Acropolis trench 5; Complex E, BA4-MB.



204. Figurine 749.1 Acropolis trench 7; Complex Ia/Ib, MB.



205. Figurine 713.4 Acropolis trench 7; Complex D, MB.





206. Figurine 322.3 Acropolis trench 4; Complexes I-E, BA4-MB.

Type b) The Kilia Figurine

At Aphrodisias there are two fragmented Kilia figures. These figurines were named after the find place (Kilia, near Gallipoli, European Turkey) of the first intact example to be published. (Calvert 1901:329; Caskey 1972:192; Thimme 1977:571; also see French 1968: figs. 91a, 93). Both are headless schematized standing figures with flipper-like arms. They were unearthed in Level VI-IIA of Pekmez trench 2, ascribed to the Late Chalcolithic 1 period — the first, or earlier, in unit 1598e2 at a depth of 7.05 m below the Pekmez trench 2 subdatum and the second, or later, in unit 1598a at a depth of 5.60 m below the Pekmez subdatum. Both figurines are fashioned from white stone.

Cat. no. 1598e2.5 (Figures 197, 207, 379.31, 385.47), might be described as a white marble torso fragment of a «Kilia» type. It is 0.012 m in thickness, 0.049 m in height, and 0.043 m in width. Pointed flipper-like arms project outward from the torso. The marble is fine-grained with a grain size measuring from 0.001 to 0.002 m. Part of the original polished surface remains with traces of ancient abrasive tool marks, and there is a slight brown encrustation on the back of the right shoulder. Broken in antiquity and missing are the head, neck, legs, and feet, as well as the end of the left arm projection.

Cat. no. 1598a.3 (Figures 198, 208, 380.15, 385.51), is also a torso fragment of a « Kilia » type female figurine. Manufactured from limestone, 116 it is 0.011 m in thickness, 0.052 m in height, and 0.045 m in width. Pointed flipper-like upper arms extend outward from the torso at an angle. A diagonal incision sculpturally distinguishes the bent forearms from the upper arm. The surface was originally polished and ancient abrasive tool marks are visibile. There is brown encrustation on the right front shoulder and in spots on the chest and left arm. Broken in antiquity and missing are the head, upper part of the neck, lower part of the body, legs and feet, and the end of the right arm.

Both these figurines have stumpy, reduced flipper-like arm projections set obliquely at the side of the body and these may indicate that the arms were meant to be diagonally bent at the elbows; only in the later excavated figure are the forearms distinguished from the upper arms. The two works share in the following characteristics: 1) both are missing heads and legs; 2) they are both fragmented at the base of a narrow neck; 3) both are flat-chested, lacking any indication of sex; 4) they are incised on two sides to indicate the arms; 5) the body is distinguished from the arms by a double incision, and the

backs incised only to delineate the arms; 6) no painting appears on their well-polished surfaces, and 7) both are encrusted with brownish deposits. The surviving fragments are in excellent condition even though their breaks are uneven and weathered from damage in antiquity. Apart from the slight difference in height, the two figures exhibit only a few variations in detail. The lower torso of the second and later figure is more triangular and less elongated than that of the first. Also, it has an incised groove that runs up the center of each flipper, a feature present on the unstratified Kilia example published by Caskey (1972a: pl. 44), and on one figurine found in Asia Minor (also in an unknown stratigraphic context). Thimme's no. 560 (1977:402), presumed EB II type, has the forearms sculpturally distinguished from the upper arms, but the technique is clearly different as the contours merge much more fluidly into one another. This factor could be attributed to the sculptor's individual preference. 117

Even though there is an approximate 1.50 m depth between the two find spots of these figures, they both lie within the limits of Level VIIIA ascribed to Late Chalcolithic 1. We await expert analysis and the recovery of other stratified examples before any judgment can be drawn on the chronological differences between them. An important factor to be considered is the amount of variability between the recovery of these figures at Aphrodisias — in Late Chalcolithic deposits — and those from other sites that are recognized and dated to

117. Figures of this « skillfully stylized type » have been catalogued by J. Thimme (1977:571), including four listed by Caskey (1972a: 192ff., pl. 44), two published in Berlin (Schmidt 1902:21ff, no. 7643, 282), one in the Ruth Lax Collection (Sotheby, New York 1975, lot no. 670) and four that Thimme has published for the first time. Of the published examples, the Aphrodisias cat. no. 1598e2.5 most closely resembles Thimme's no. 561 from Papaskoi in Mysia which is not securely dated to the EB II period (Thimme 1977:571, figs. 560-566). But for a missing left foot, this figurine is complete; it is characteristic of the forms of this type of figurine, which are flat with clearly incised public triangles, pointed legs, and feet that are either joined or are separately sculpted and placed at an angle from the lower body. Woodward and Ormerod (1909/10:105) speculate, « The most curious feature is the single foot of the larger figure, which gives the impression that the legs are swathed », (these are in the Ashmolean Museum). From Thessaly an unstratified but complete example closely resembling the quality of our earlier figure, cat. no. 1598e2.5, has been recovered (Müller 1929: 125, Tafel VI). Two other examples both missing their heads and one missing its lower limbs were published by A. Woodward and H. Ormerod (1909/10: pl. VII, 18, 19); one of these particularly resembles the earlier Pekmez figure, cat. no. 1598e2.5. Another figure was found near Troy at Hanaytepe (Schliemann 1881:712, Figure 1551), is stylistically the same, but from its representation appears to be rounder in section and carries a decorated girdle. An unpublished, unstratified example in the Mytilene Museum was found at Thermi on the island of Lesbos which has been tentatively dated to northwestern Anatolian Early Bronze Age contexts. We have not viewed this example and cannot compare it to those found at Aphrodisias.



207. Kilia figurine 1589e2.5 Pekmez trench 2; Level VIIIA, LC1.



208. Kilia figurine 1598a.3 Pekmez trench 2; Level VIIIA, LC1.

EB I-EB II contexts. How certain can we be that the discrepancies we find between the dating and the distribution of these figures is not a problem of the Aphrodisias stratigraphy?

Another question that naturally arises is whether these Kilia type figures were actually made at Aphrodisias. Certainly, at the site marble sources abound and we substantiate that they were used in these periods. Yet it appears likely that these figures were 1) imported, or 2) they were imitated by the Aphrodisians of this period. If marbles could be distinguished, as some have attempted to do (Renfrew and Peacey 1968:45-66), the question of imitation and importation might be answered.

Therefore, the earliest context in which these figurines have ever been found is at Aphrodisias — in Level VIIIA, unit 1598e.2, Late Chalcolithic 1 or ca. 4360-4100 B.C. It is even possible that this form may be earlier than Late Chalcolithic. However, up to this point we know of no other examples for which an earlier date has been

ascribed on stratigraphic grounds. It remains to be shown if they can be paralleled in a Late Chalcolithic stratigraphy at other sites. ¹¹⁸ In stylistic details this type suggests a parallel with those dated to the Early Bronze Age or

118. In relation to intercultural connections we turn to Thimme's discussion of these types (1977:176-177): « A head fragment found at Troy II and probably from a figure of this type suggests a date in the Early Bronze Age, although two such idols were found in a Late Chalcolithic context (i.e., fourth millennium) at Aphrodisias in south-western Asia Minor. The ear from of the Kilia-type figures is so similar to that of a Chalcolithic marble statuette from Bulgaria that Balkan connections again seem possible. We must await new finds from systematic excavations to see whether a relation with the southeast Balkans is confirmed. If, however, the type arose from the Chalcolithic culture of southwest Asia Minor it would seem to constitute a survival here and there of the Neolithic and Early Chalcolithic tradition of the standing female - alongside the prevailing flat figure of the crouching female into the Early Bronze Age. J. Mellaart wished to see a similar Neolithic connection in two standing statuettes said to have come from two royal graves at Dorak; however the significance of the « Dorak Treasure » continues to be a subject of scholarly debate. »

to Troy II contexts. 119 Whether or not the Kilia form actually developed at Aphrodisias itself is questionable, but no models are known to have come from earlier contexts!

In conclusion, we feel certain the distinctive stylized Kilia type of figurine is of western Anatolian origin. ¹²⁰ The distribution appears to be chiefly from southwestern Anatolia westward and north to Troy. A. Wace (1949:426) comments on this. ¹²¹ The 21 examples that are known at present ¹²² have been found clustered in western Anatolia and the eastern Aegean — in sites including Elmalı at Kozagacı, ¹²³ Aphrodisias, Yortan, in Mysia at Hanaytepe, Kilia, and one from Thermi. But the only figure with stratigraphically proven provenience is Aphrodisias! There are no parallels for these Anatolian marble sculptures in the Cyclades. It is unfortunate that the majority of the extant figures are stray finds, and are in fact, undatable.

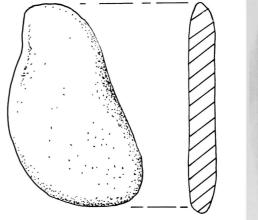
Type c) Pebble Figurine

This is the largest class of figurines at Aphrodisias. 12 objects were catalogued that are assigned to periods from

- 119. The questions that we pose include: At what point do these figures appear? At what point are they dispersed to Thessaly and the Eastern Aegean? Until we know the answers to these questions, it will be impossible to determine the amount of time that it took ideas to travel in this area. Stylistically they are all compared with late varieties of Cycladic idols of the Keros-Syros Phase (Thimme 1977:571), but we do not consider these comparisons valid. No figures have been found in excavated contexts later than Troy II (Schmidt 1902:21ff., no. 7643, p. 282), or about 2300/2200 B.C., so at this point we can only assume that they were produced for a minimum of 2000 years. This conservative factor is representative of the Late Chalcolithic when compared with the creative and rapid developments in the arts of other centers at this time. Interestingly enough, J. Thimme comments (1977:571): « To be sure, the recovery of two fragments of this type at Aphrodisias seems to indicate an earlier date — in the fourth millennium — for the formation of the type (see American Journal of Archaeology 75, 1971, p. 129, fig. 8). However, in my opinion the published data is insufficient to permit the conclusion that the two Kilia-type fragments from Aphrodisias belong to a clear Neolithic context ».
- 120. Also see French 1969:98. One has, however, been reported in central Anatolian contexts at Kırşehir.
- 121. « ...in the Cyclades the marble figurines belong to the Early Bronze Age (Early Cycladic). On the other hand the Thessalian terracottas, which it most resembles, are neolithic... Consequently the underlying neolithic element of the Mainland might be held to be responsible for the difference observable between the Early Helladic and the Early Cycladic culture ».
- 122. J. Thimme, Art and Culture at the Cyclades, Chicago, 1977:571-572 has the most comprehensive discussion of these figures. Added to the 11 in Thimme's study (see note p. 4/27) other figures include five cited by Caskey; two mentioned by D. French (1969:98) from the «Kırşehir» area and another from Yortan (but it is not clear if these are, in fact, separate examples from those already listed); an unpublished example brought to my attention by Pat Getz-Preziosi which has an unknown provenience, and the Guennol figure in the Metropolitan Museum of Art published by P. Harper (1982:3-5). As this manuscript was going to press, a personal communication and sketch was received from M. Korfmann (22.11.83), stating that a torso fragment has been unearthed at Beşiktepe. We are anxious for its publication!

the Late Chalcolithic 3 to the Middle Bronze-Mixed. These figures are of either schist or marble, they are relatively flat with a minimum of modelling; and no clearly defined heads or limbs. These figurines are known for their simple shapes that are generally ovoid, or oblong and sackshaped. Incised areas are generally lacking, but a few members of this class are notched and the exceptions have some peck marks that appear on the lower body of the obverse. The condition is good with the exception of a few patches of a tan encrustation generally on the reverse.

The prototype for pebble figurines has been found in the Aegean at Saliagos (Evans and Renfrew 1968: fig. 88, pl. XLIII.4) and later examples occur in early Cycladic graves (Tsountas 1898: pl. 11, 12). J. Thimme (1965:72) discusses this type in great detail (see also Bent 1884:49).







209. Figurine 713.100 Acropolis trench 7; Complex D, MB.

210. Figurine 741.2 Acropolis trench 7; Complex D, MB.

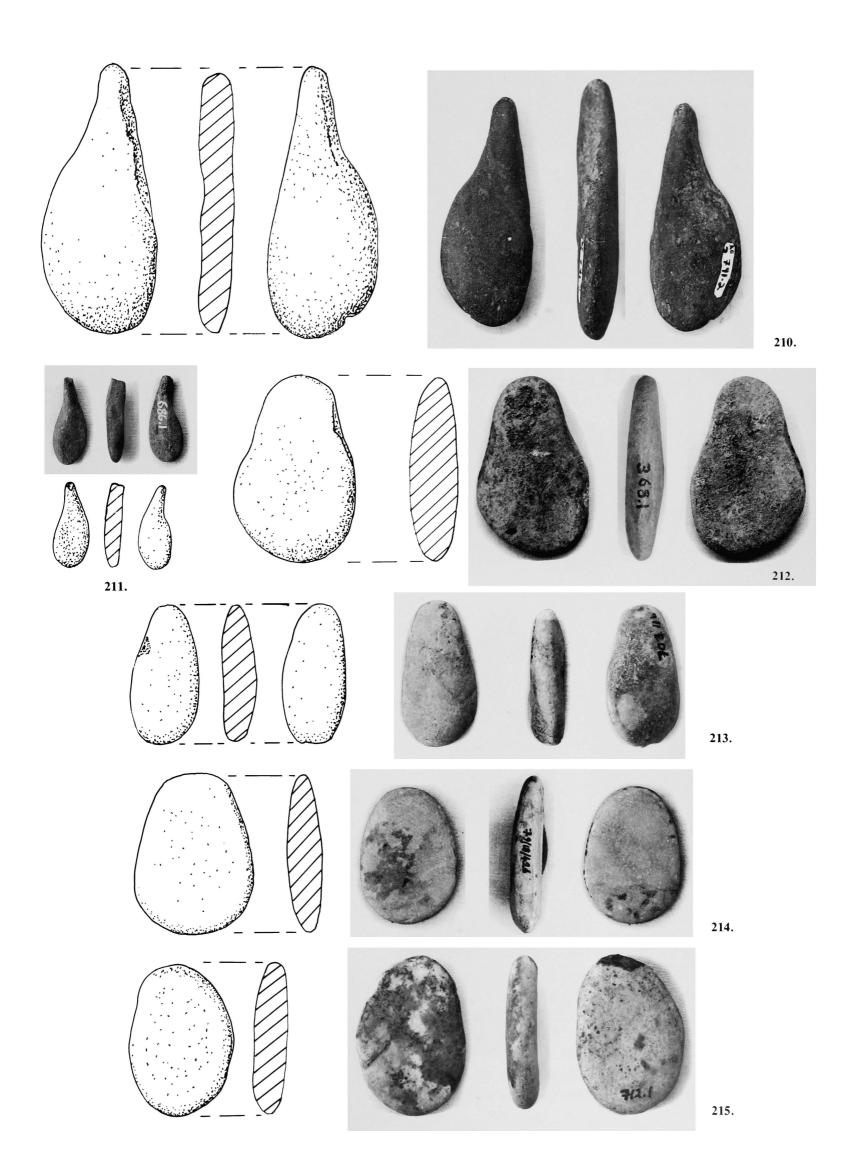
211. Figurine 686.1 Acropolis trench 7; Complex C, MB.

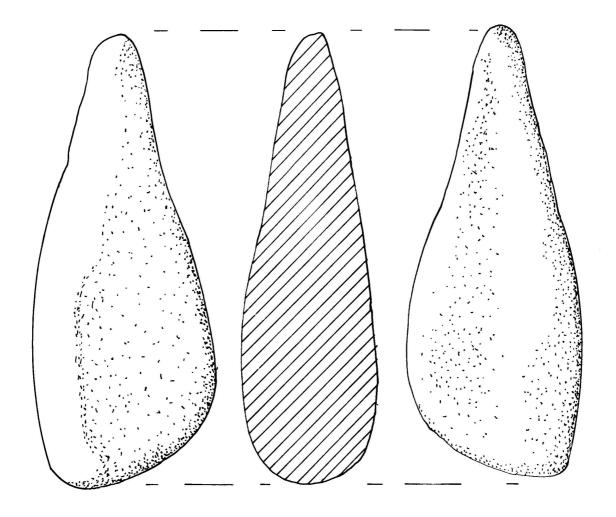
212. Figurine 368.1 Acropolis trench 4; Complexes VI-IV, BA3.

213. Figurine 703.116 Acropolis trench 7; Complex D, MB.

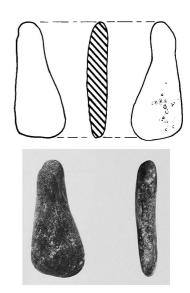
214. Figurine 507.1 Acropolis trench 5; Complex E, BA4.

215. Figurine 712.1 Acropolis trench 7; Complex D, MB.









217. Figurine 1519.10 Pekmez trench 2; Level VIIA, LC3.

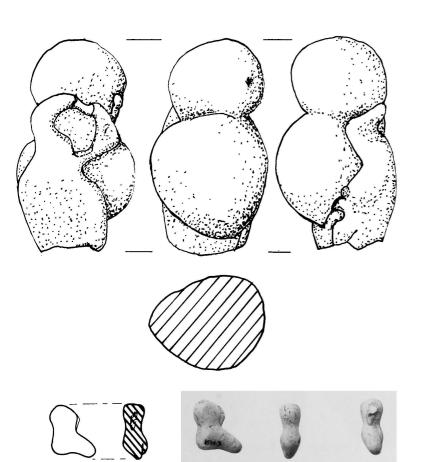
216. Figurine 644.1 Acropolis trench 7; Complex B, MB-Mixed.

Type d) The « Fat Ladies » of Aphrodisias or Figurines of Natural Calcium Carbonate

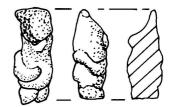
There are nine members of this group and because they are a natural formation, each is different in shape, thus some are more voluptuous and fat than others. The earliest figurine of this type appeared in Pekmez trench 2 in the Late Chalcolithic period at Aphrodisias but their distribution is heavily contracted in Bronze Age 4-Middle Bronze periods, particularly in Acropolis trench 3 (Table 37).

In toto these figurines are manufactured from calcium carbonate which is white and fine-grained. Often the surface is naturally smoothed, and it can carry a gray pearly luster from use or it can be dull.

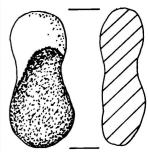
These forms correspond to one found at Saliagos (Evans and Renfrew 1968: pl. XLII) which is discussed in detail by Renfrew (1966a:218), and also one of the same type was found at Melos (Wace 1949:422f.). There is a rather large group of seated fat ladies, examples of which come from Naxos, Athens (Weinberg 1951:121ff.), and Sparta (Zervos 1963: fig. 138). Again, perhaps we should look to Bulgarian and Romanian influences to trace the interrelationships between assemblages of Eastern European contacts to Anatolia and the Aegean (Georgiev 1961:45; Georgiev and Angelou 1957:41f., fig. 60). It is clear that the Aphrodisias fat ladies are variants of a single cultural theme.



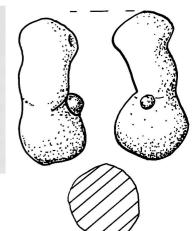














- 218. Figurine 575b.7 Acropolis trench 7; Complex A, MB-Mixed.
- 219. Figurine 335.2 Acropolis trench 4; Complexes III-II, BA4.
- 220. Figurine 8C.1 Acropolis trench 3; Complex Sub I, BA4-MB.
- 221. Figurine 8C.2 Acropolis trench 3; Complex Sub I, BA4-MB.
- 222. Figurine 1516.3 Pekmez trench 2; Level VII, LC4.

Type e) Stalk-headed Figurine

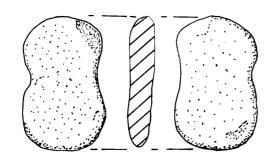
Only one example of this figurine type was unearthed at Aphrodisias. Cat. no. 1524c.1 (Figures 223, 403.7) was found in a Bronze Age 1 context in Pekmez trench 2. This is a simple, flat, vaguely-shaped, pronged-necked figure with sloping shoulders. It measures 0.064 m in height, 0.035 m in width and the section is 0.010 m. Its condition appears to be complete, but abrasive tool marks appear on both the front and the back, and it is encrusted with a brownish deposit on the back.

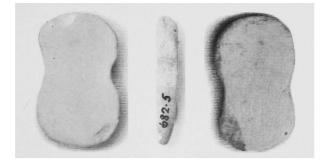
D. French (1969:98, Figure 91, d) calls this type of figurine a « simple type », which he states is common to western and central Anatolia. A stalk-headed type with a rounded body is found at Mersin (Garstang 1953:71, Fig. 39; Level XXIII), but it is a variant of the Aphrodisias shape.

Type f) Figure-8 Figurines

Eight figurines were classed in this stylized type. All of these figures are simply shaped from white marble with a pronounced division between the head and body forming a figure 8. The distribution appears rather late at Aphrodisias, in Bronze Age 4 and Bronze Age 4-Middle Bronze contexts which are attributed to the EB IIIA-EB IIIB; and the beginning of the Middle Bronze Age in Anatolia. Of interest is that they are found only in Acropolis trenches 4 and 7.

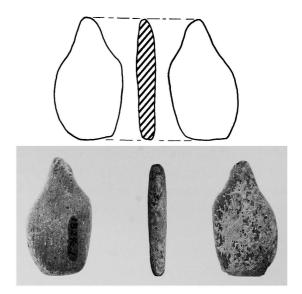
Similar figurine types are found in Troy I contexts (Blegen *et al.* 1950:127, Type 3 G) and they continue through to Troy IV (Blegen *et al.* 1951: Plate 147: no. 36-265).



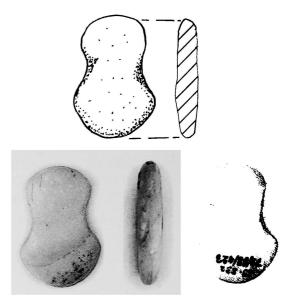


225. Figurine 682.5 Acropolis trench 7; Complex D, MB.

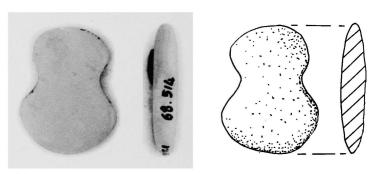
227. Figurine 713.22 Acropolis trench 7; Complex D, MB.



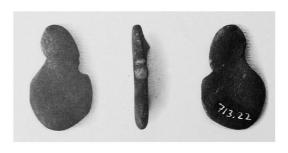
223. Figurine 1524c.1 Pekmez trench 2; Level VI, BA1.

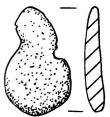


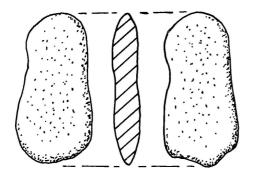
224. Figurine 322.2 Acropolis trench 4; Complexes I-E, BA4-

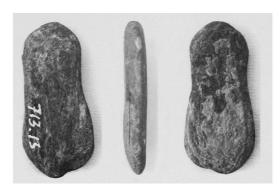


226. Figurine 317.1 Acropolis trench 4; Complex Sub-I, BA4-MB.



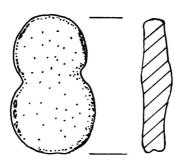




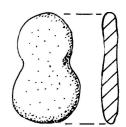


228. Figurine 713.13 Acropolis trench 7; Complex D, MB.







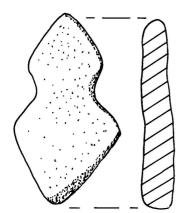


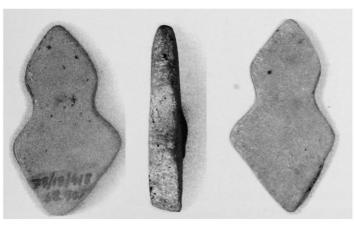
229. Figurine 327.1 Acropolis trench 4; Complexes III-II, BA4-MB.

230. Figurine 333.2 Acropolis trench 4; Complexes III-II, BA4.

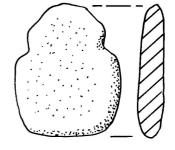
Type g) Notched-waisted Figurines

There are only three members of the notched-waisted group, and they are all dissimilar in shape, but are probably subtypes of the same class. Common to them all is a single notch on either side delineating the waist. *Cat. no.* 702.10 of Acropolis trench 7 from the Middle Bronze period has a form that is also known at Kusura (Lamb 1936a: Fig. 11.7) and at Troy I (Blegen *et al.* 1950: Plate 127, Type 2 G).



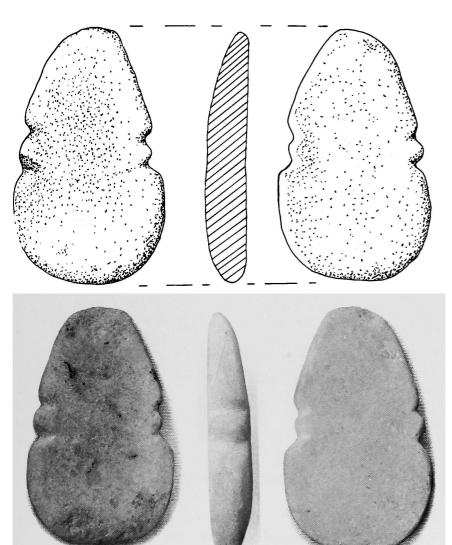


231. Figurine 311.2 Acropolis trench 4; Complexes I-E, BA4-MB.





232. Figurine 702.10 Acropolis trench 7; Complex D, MB.





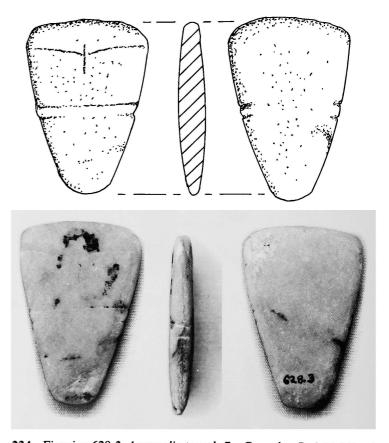
Cat. no. 311.2 (Figures 231, 441.15, 446.30), can be compared to cat. no. 702.10 supra, except that its body is triangular in shape. Variants of this well-established type are found at Troy, Beycesultan and at Kusura, but no direct parallels exist.

Type h) Double-notch Waisted Figurine

The characteristic that is common to the two figurines placed in this category is the double notch on either side delineating the waist.

Cat. no. 628.3 (Figures 234, 482.27) has a stylized incised partial owl face (eyebrows and nose incisions), with the body incised by double bands around the waist or girdle. It was recovered from Acropolis trench 7 Complex B', ascribed to the Mixed-Middle Bronze periods. Exact parallels are lacking for this well-crafted pebble figurine, but it shares characteristics with type c (pebble) and the incomplete owl-faced figurines from Troy.

Cat. no. 686.3 (Figures 233, 478.26) is also from an Acropolis trench 7 context and is dated to the Middle Bronze. The comments, *supra*, apply to this figurine, for it is difficult to find correspondences for its shape. It would appear that it is a rare variant of carved pebble figures.



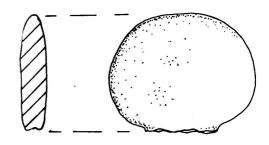
234. Figurine 628.3 Acropolis trench 7; Complex B, MB-Mixed.

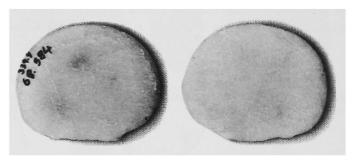
233. Figurine 686.3 Acropolis trench 7; Complex C, BA4-MB.

Type i) Kusura Figurines

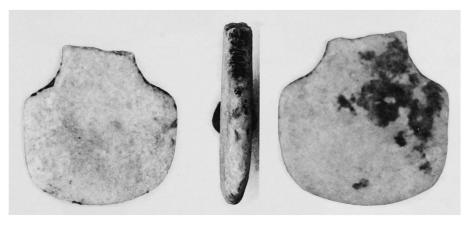
Cat. no. 231.3 (Figure 430.15) was found in Complex II, Room 2 of Acropolis trench 3 and is dated to a Bronze Age 4 context. This disk-shaped fragment was originally classified as a disk in the catalogue. Here, however, we present it as the top part or head of a Kusura type figurine (Lamb 1938: Figure 17,3-4; Plate 84, no. 11). A complete representation of this form is found in Figure 244.

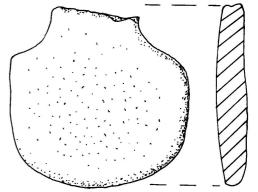
Getz-Preziosi suspects that two other figurines originally placed in the miscellaneous class also belong to this group. The first is cat. no. 339.4 from Bronze Age 4 contexts, Acropolis trench 4 (Figures 235, 437.14, 438.20). The second is cat. no. 7C.3 from Acropolis trench 3 (Figures 236, 431.38, 433.4) of Bronze Age 4-Middle Bronze periods and may also be the base of a Troy I Type 3 I variant (Blegen et al. 1950: Plate 127). Any further analysis of this group would be based on pure speculation.





235. Figurine 339.4 Acropolis trench 4; Complexes II-III, BA4.





236. Figurine 7C.3 Acropolis trench 4; Complex Sub I, BA4-MB-Mixed.

Type i) Owl-faced figurine

In Acropolis trench 7 Complex A, Middle Bronze-Mixed deposits, an owl-faced head fragment was found. Cat. no. 575.1 (Figures 237, 486.16) resembles similar types found in Troy III contexts (Schliemann 1881:334-335, nos. 205, 207). Blegen et al. (1950: Pl. 147, Type 3.H) found these figures associated with Troy I contexts. They appear to enjoy a widespread distribution and are also found at Yortan (Mellaart 1966:134, Figure 40.4-5) as well as at other sites.





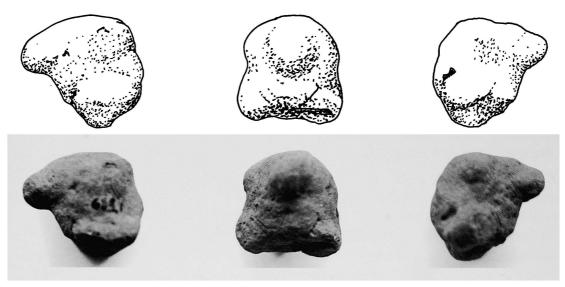
237. Figurine 575.1 Acropolis trench 7; Complex A', MB-Mixed.

Miscellaneous Types

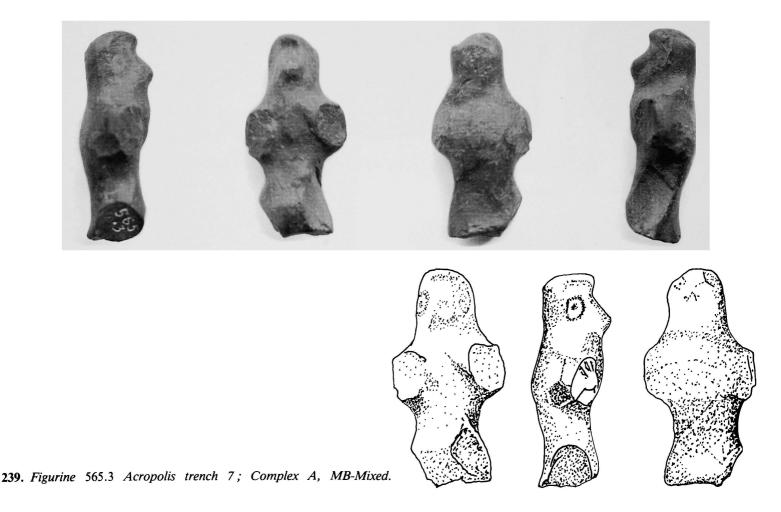
Two pinched ceramic figurines of much interest were recovered from Acropolis trench 7 contexts. Cat. no. 565.3 (Figures 239, 486.8) is painted and ascribed to Middle Bronze-Mixed deposits. The arms and lower body have been broken off, and the paint-condition is poor. The eyes are owl-like - they are in reserve with a circle and dot as the pupil. Over the chest and back is a dark-gray crossed band that has all but flaked away. No direct correspondences can be found for this figure. An incised crossed band is found on a figurine from Kusura

Period B (Lamb 1937:29, Fig. II.2), but there may not be any association between the two.

An animal head with obscure feature, cat. no. 689.1 (Figures 238, 478.11, 485.12), is ascribed to the Middle Bronze period. It fits in well with the class of crude zoomorphic figurines that are well known from the Anatolian Chalcolithic and Bronze Ages. They are found at Beycesultan in the Late Chalcolithic (Lloyd and Mellaart 1962: Fig. F.2, nos. 19,20); Period B at Kusura (Lamb 1937: Fig. II, no. 3); from Troy III (Blegen et al. 1951: Fig. 56); and from Karataş-Semayük and Bağbaşı (Mellink 1970: Fig. 24).



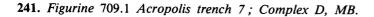
238. Figurine 689.1 Acropolis trench 7; Complex C, MB.

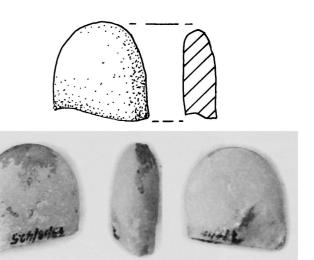


Too Fragmented to Classify

Ten figurines were too fragmented to classify. All of these probably belong to well-defined types. The interested reader should refer to catalogue and illustrations for more information.

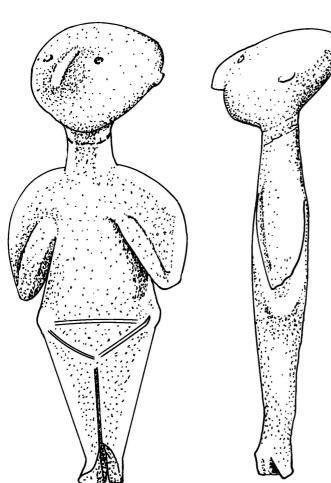
Aphrodisias has witnessed the development of figurative stone sculpture, representing several stylistically distinct schematic ideas which may be peculiar to western Anatolia. Typologically, the ten types substantially differ from one another. What is important is that they seem to reflect independently established ideas — that co-existed and enjoyed parallel developments.





240. Figurine 520.1 Acropolis trench 5; Complex E, BA4-MB.





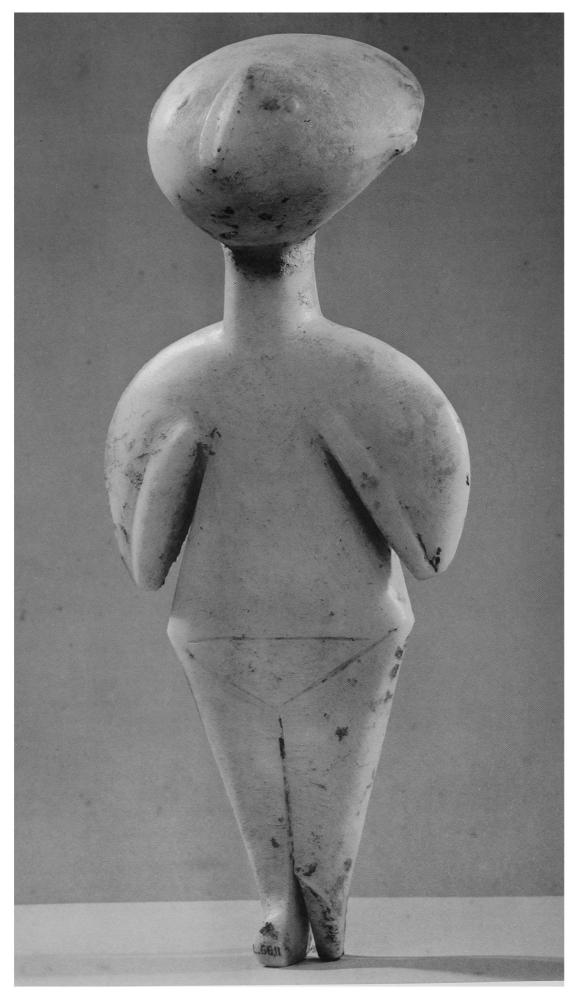
Stone Figurines

by Pat Getz-Preziosi

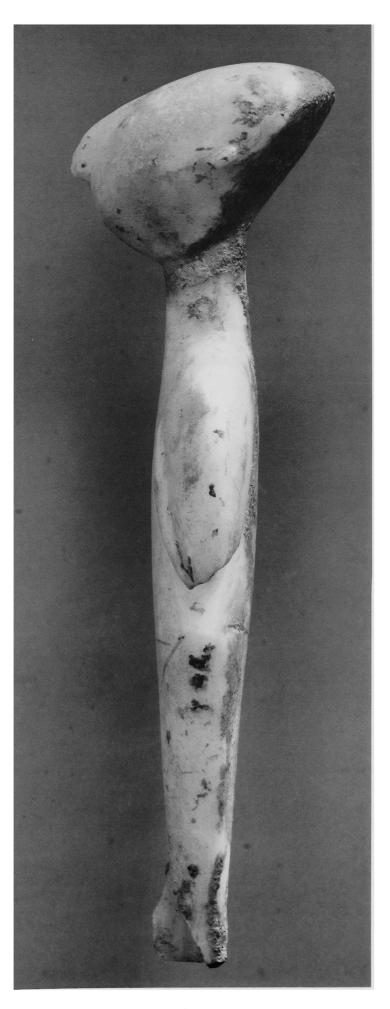
According to the evidence at hand, the occurrence of anthropomorphic figurines at prehistoric Aphrodisias is almost continuous from Late Chalcolithic 1 into the Middle Bronze period.¹²⁴ Only the Late Neolithic (?), Chalcolithic 2 and Bronze Age 2 levels are as yet figurine-free, although further excavation might reveal the presence of such artifacts in these periods as well. For the other phases the frequency of occurrence varies widely, with the greatest concentration having been recovered from Bronze Age 4 and Middle Bronze levels (Table 36). It is perhaps noteworthy that the one trench dug in a cemetery area (Acropolis trench 6) contained no trace of figurines. Although it is unclear what function these small images served, it is significant that they were all found in habitation contexts, a fact consistent with cultural traditions in Anatolia generally.

124. Some of the figurines from Aphrodisias have been previously published. See Kadish 1969: pl. 23, fig. 5; pl. 24, fig. 6; Kadish 1971:131, ill. 8; pl. 29, fig. 33; Joukowsky 1982b.

←242. Drawing of the Kilia figurine, Guennol Collection, fig. 244.



243a. Kilia figurine of the Guennol Collection.



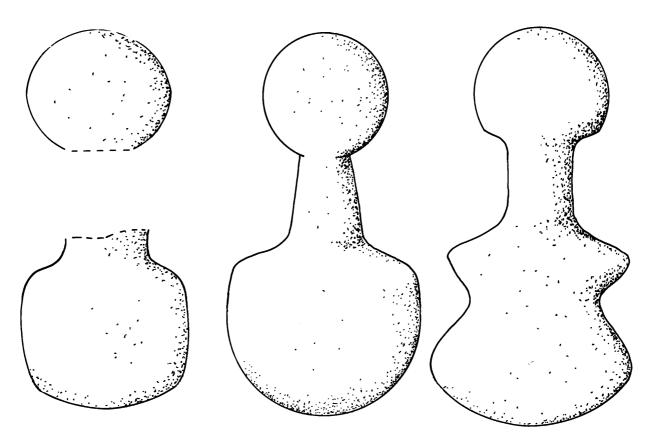
243 b. Kilia figurine of the Guennol Collection.

The figurines from Aphrodisias are made of three basic materials, all locally available: marble (ca. 53 %), mica schist (ca. 29 %), and calcium carbonate (ca. 16 %). Marble and mica schist were both used in the three main periods, in most cases concurrently for figurines of the same type. Calcium carbonate concretions were used as figurines either in an unworked state or with a minimum of working in Late Chalcolithic 4 (Pekmez trench 2, cat. no. 1516.3, Figure 222); Bronze Age 4 (Acropolis trench 4, cat. no. 335.2, Figures 219, 437.5, 438.21); and Bronze Age 4-Middle Bronze Mixed strata (e.g., Acropolis trench 3, cat. no. 8C.1, Figures 220, 431.39, 433.8, Acropolis trench 7, cat. no. 575b.7, Figure 218). 125

With the exception of the two fragmentary Kilia-type figurines recovered in Late Chalcolithic Levels at Pekmez (trench 2, cat. no. 1598a.3, Figures 198, 208, 380.15, 385.51; and cat. no. 1598e2.5, Figures 197, 207, 379.31, 385.47) which, though highly stylized, represent a fully delineated human form, and one or two of the calcium carbonate concretions which were selected for their suggested corpulence, all the figurines from Aphrodisias have simple, more or less flat, schematic shapes, and all but a few of them (Acropolis trench 5, cat. no. 517.1, Figures 203, 451.35, 453.10, Acropolis trench 7, cat. no. 575.1, Figures 237, 486.16; and cat. no. 628.3, Figures 234, 482.27) are entirely devoid of surface markings. In fact, like concretions, most if not all of the schist and many of the marble figurines are simply pebbles that have either been left in their natural state or have been only slightly altered. These tend to be neither bilaterally symmetrical nor are their surfaces well finished. Again, like the concretions, these stones were chosen for their resemblance to an abstraction of the human female form or possibly to traditional figurine types; they probably also had a certain tactile appeal. These 'idol-stones', at the very least, by virtue of their material and minimal workmanship, should be considered local products.

A number of the marble figurines had more attention lavished upon them. Although made from pebbles, also, these show greater symmetry, careful notching or indentation, well-ground edges, and their surfaces were originally well polished (e.g., Acropolis trench 7, cat. no. 686.3, Figures 233, 478.26; Acropolis trench 4, cat. no. 311.2, Figures 231, 441.15, 446.30); cat. no. 333.2, Figures 230, 437.2, 438.24).

125. The use of natural concretions in Anatolia is attested as early as the sixth millennium B.C. at Çatal Hüyük (Mellaart 1965a: ill. 72) and in Bronze Age levels at Sardis (Kadish 1969:56, n. 28).



244. Kusura type figurine; reconstruction.

It would probably be unwise to look for outside influences or origins when dealing with such essentially simple forms, but it is worth pointing out that close parallels can be found for the notch-sided and figure-eight figurines throughout western Anatolia, ranging from Troy to Karataş-Semayük, with distribution further west as well (e.g., Samos, Milojčić 1961:pl. 34.4-6). Moreover, three fragments — two disk-heads (?) and the lower section of a third figurine (Acropolis trench 4, cat. no. 339.4, Figures 235, 437.14, 438.20; Acropolis trench 3, cat. no. 231.3, Figure 430.15) — may belong to figurines of the Kusura type (Figure 1b.3) or one of its variants (e.g., Fig. 1b.4) which were localized in southwestern Anatolia (Höckmann 1977:178). With the exception of one rudimentary notchedshouldered piece of mica schist found in the Late Chalcolithic levels (Pekmez trench 2, cat. no. 1599c.4, Figures 245, 376,7; Joukowsky 1928b:90), the Aphrodisias examples may possibly be later in date than analogous material from excavations elsewhere in Anatolia that is, Bronze Age 3-Middle Bronze in contrast to the usual dating of Bronze Age 1-Bronze Age 2 for the latter.

The most interesting of the figurines from Aphrodisias are the two Kilia-type upper torso fragments. ¹²⁶ The chief characteristics of this curious type are a large three-dimensional head contrasting with a thin, flat neck and body, and legs which sometimes terminate in separated, forward projecting feet. Ears and nose are indicated sculpturally. The eyes are sometimes rendered as raised dots, and the

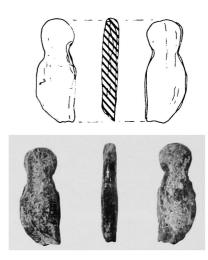
forearms, bent upward from the elbows and separated from the sides of the torso by cuttings, are occasionally set off in low relief (e.g., Fig. 1a.2). On one of the Aphrodisias examples, incisions seem instead to mark off the upper arms (Pekmez trench 2, cat. no. 1598a.3, Figures 198, 208, 380.15, 385.51; and the complete Guennol figurine in Figures 243,a,b). The pubic triangle, leg division, and buttock line are normally incised.

Although details and forms vary slightly from piece to piece, the type is distinctive and may have endured for an unusually long time. The chronological associations of most of the known examples are lost, but the recovery of the two fragments in Late Chalcolithic levels at Aphrodisias not only provides a surprisingly early date for the type, but should put to rest any notion of a real connection with Bronze Age Cycladic figurines (Thimme, ed., 1977:571, no. 560) even though an example from Troy II seems to indicate that the type persisted well into the Bronze Age.

126. For bibliography see Joukowsky 1982b: notes; Harper 1982:3-5 notes. To the known examples may be added: Sotheby Parke Bernet Auction 11/29/1965, nos. 48, 49; Masks and Sculptures from the Collection of Gustav and Franyo Schindler (The Museum of Primitive Art, New York, 1966), nos. 111, 112 (neither illustrated); no. 112 is made of electrum, and both are said to come from Kirşehir in central Anatolia. For other Kilia-type figures with this reputed provenience see O.W. Muscarella ed., Ancient Art: The Norbert Schimmel Collection (1974), no. 8. See notes 117, 119, 120. See AJA, 88 (1984:447, Ill. 3) for a torso from pre-Troy I, Besik-Sivritepe.

The existence of a miniature Kilia figurine of electrum apparently confirms a relatively late terminus for the type. 127 As with the other figurine-types represented at Aphrodisias, the distribution of the Kilia type appears to be primarily a western Anatolian one, with examples found all the way from the Troad to the plain of Elmalı. 128

Indeed, while it is quite possible that virtually all the figurines unearthed at prehistoric Aphrodisias were made in the vicinity of the site, it is important to note that their affinities and parallels are western and not central Anatolian and that this western orientation is entirely consistent with the associations to be made for the ceramic and lithic industries of Aphrodisias discussed in ensuing contributions to this volume.



245. Figurine 1599c.4 Pekmez trench 2; Level VIIIB, LC1.

2. Grindstones

The single largest class of ground stone tools are grindstones. A total of 264 tools were registered, representing 22 % of the ground stone tools. In Table 38, grindstones have a concentrated frequency from the Late Chalcolithic 1-3, and again from Bronze Age 2 through the Iron Age. None were catalogued in either Late Chalcolithic 4 or Bronze Age 1 periods. They peak in the Middle Bronze period where 65 or 25 % such implements were recovered. It is probable that other tools were used in the grinder capacity, but they were too fragmented to place in this class.

Characteristically, these tools are manufactured from a dark gray-black serpentinite or marble. They are heavy, weighing approximately 400 grams or one pound as a minimum weight. The predominant shape they hold in common is that they are all hump-backed; their bases are smoothed and sometimes highly-polished from the crushing and grinding services they performed.

In *Ilios*, Schliemann (1881:441) states that he « could have collected some thousands of them ». The grinders at Aphrodisias find likenesses with those ascribed to Troy III (Schliemann 1881:441, nos. 634 and 632).

In a few instances, pestle fragments were included in this class of objects. One grindstone found in Acropolis trench 4 from Bronze Age 4 contexts is definitely a pestle with a phallic-like appearance. It is cat. no. 339.2 (Figures 437.11, 438.27). In this same class is a pestle, cat. no. 1453.1, Figure 415.13 from Pekmez trench 2, Level III which is placed in a Bronze Age 4-Middle Bronze context. In Ilios, Schliemann comments on objects similar in shape. He places them in Troy II (Schliemann 1881:276, no. 155) and Troy III (Ibid.: 452, no. 683).

^{127.} See note 126.

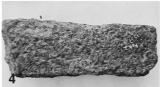
^{128.} The alleged central Anatolian provenience of figures cited in note 19 and another referred to by Joukowsky (1982b: n. 23) has yet to be documented. Thermi on Lesbos has been mentioned as the find-place of a Kilia-type figurine in the Mytilene Museum (Joukowsky 1982b: with n. 22; Mellaart 1966a; fig. 40), but Caskey (1972a:193) implies that this figurine may have come instead from Asia Minor. Cf. note 117.

TABLE 38. FREQUENCY OF OCCURRENCE OF GRINDSTONES

Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	%
Trench																
Pek 1							1	1							2	
Pek 2		8	6	5			3	4	4			4			34	13
Ac. 1-2																
Ac. 3							1	8	15	1					25	9
Ac. 4								26	11	15		5			57	22
Ac. 5										6	4	5			15	6
Ac. 6																
Ac. 7										11	61	29			101	38
Ac. 8													7		7	3
Ac. 9														15	15	6
K-1																
K-2							2	4	2						8	3
Total		8	6	5			7	43	32	33	65	43	7	15	264	
9%		3	2	2			3	16	12	12	25	16	3	6		100













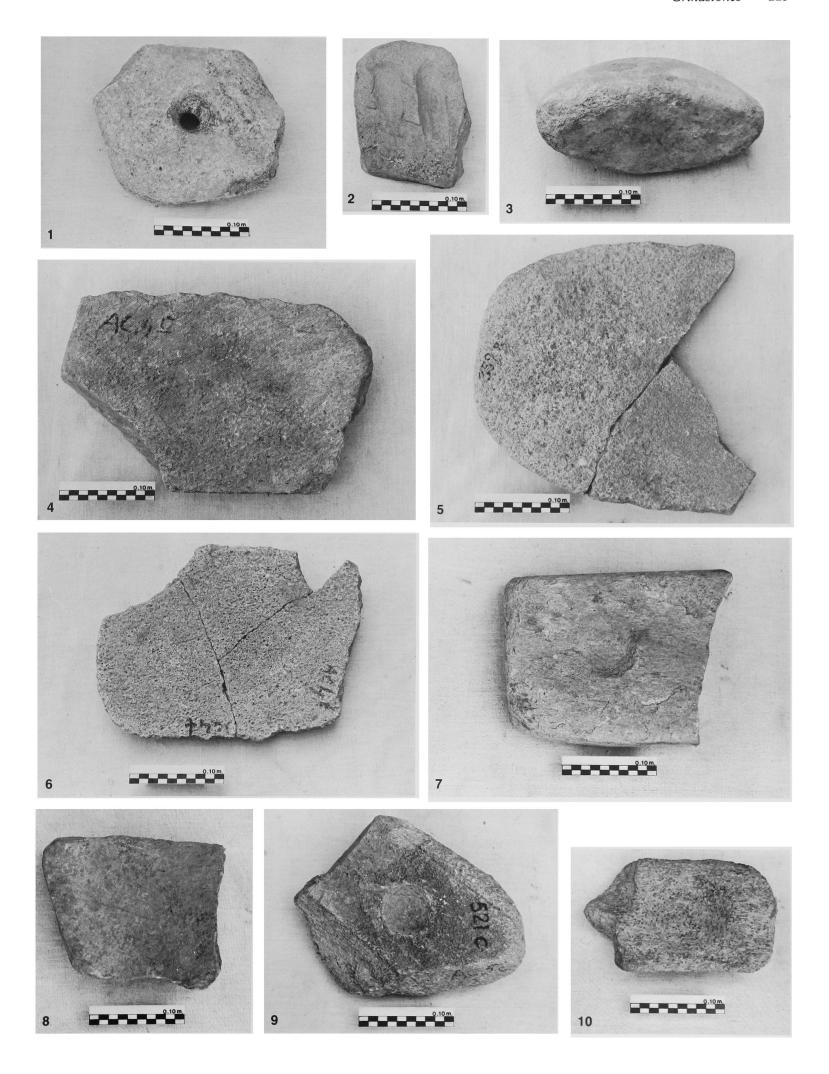


246. Pekmez trench 2; Late Chalcolithic Outsized Ground Stone Tools.

- 1. Pek 2n quern or mortar, Unit 1568
- 2. Pek 2m mortar or pivot stone, Unit 1571
- 3. Pek 2j pivot (?) stone, Unit 1546a
- 4. Pek 2g grindstone, Unit 1533, Level VIIA
- 5. Pek 21 grindstone, Unit 1546a
- 6. Pek 2h grindstone, Unit 1540a, Level VIIB

247. Acropolis trenches 3, 4, and 5; Ground Stone of the Bronze Age.

- 1. 266.3* Acropolis trench 3; Complexes IV-VI
- 2. 352.2 Acropolis trench 4; Complexes IV-VI
- 3. 273.? Acropolis trench 3; Complexes IV-VI
- 4. 3570 Acropolis trench 4; Complexes IV-VI
- 5. 359r Acropolis trench 4; Complexes IV-VI
- 6. 367t Acropolis trench 4; Complexes IV-VI
- 7. 359p Acropolis trench 4; Complexes IV-VI
- 8. 361s Acropolis trench 4; Complexes IV-VI
- 9. 521c Acropolis trench 5; Complex I
- 10. 518b Acropolis trench 5; Complexes D, E, F















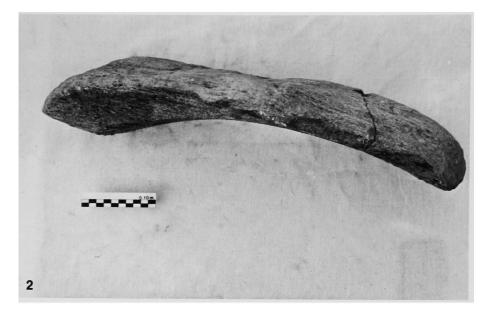










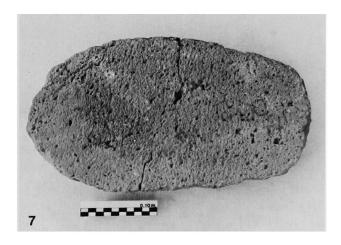














249. Acropolis trench 7; Outsized Ground Stone of the Bronze Age.

- 1. 670v Complex D
- 2. 704hh Complex D
- 3. *73900* Complex D
- 4. 699z Complex D
- 5. 682bb Complex D
- 6. 714jj Complex D
- 7. 700ff Complex D
- 8. 767pp Complex Ia

248. Acropolis trenches 3 and 4; Outsized Ground Stone of the Bronze Age.

- 2. 319e Complexes I and E
- 3. 310c Complexes I and E

- 1. 204.20 Complex II, Rm. 3 4. 323f Complexes II and III 7. 326g Complexes II and III
 - 5. 309d Complexes I and E
 8. 350m Complexes II and III
 6. 319j Complexes I and E
 9. 326k Complexes II and III

10. 350n Complexes II and III

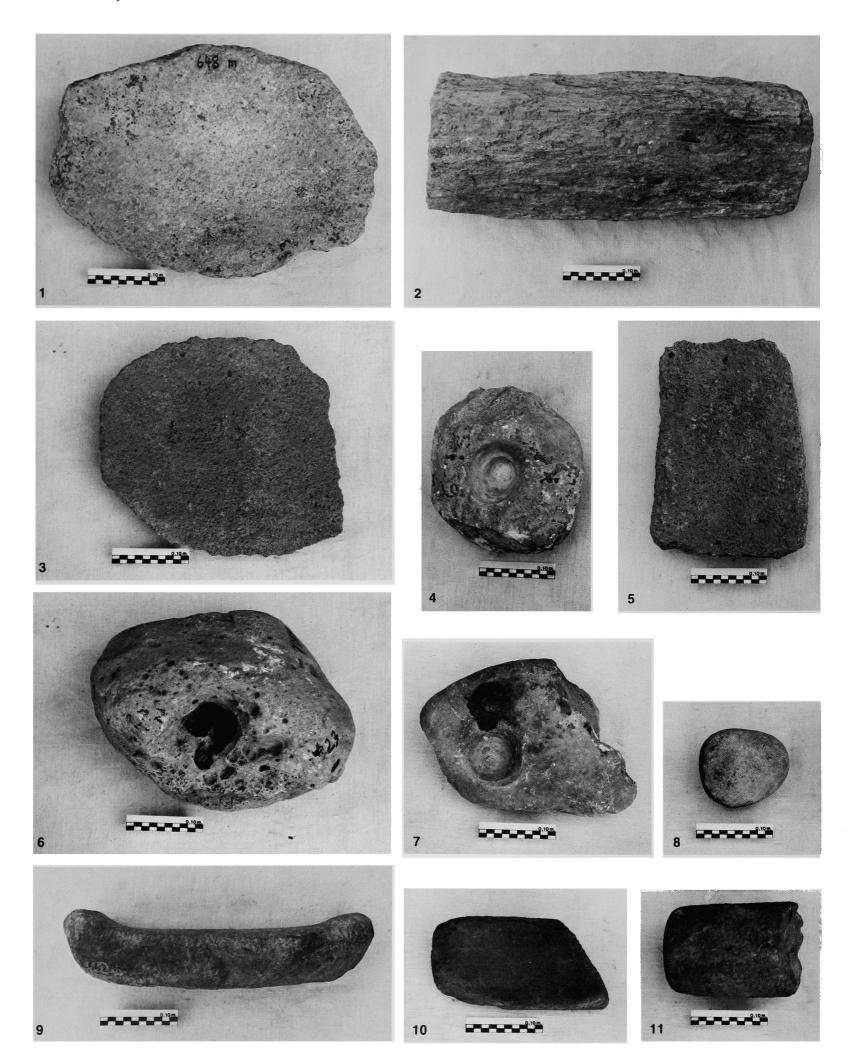
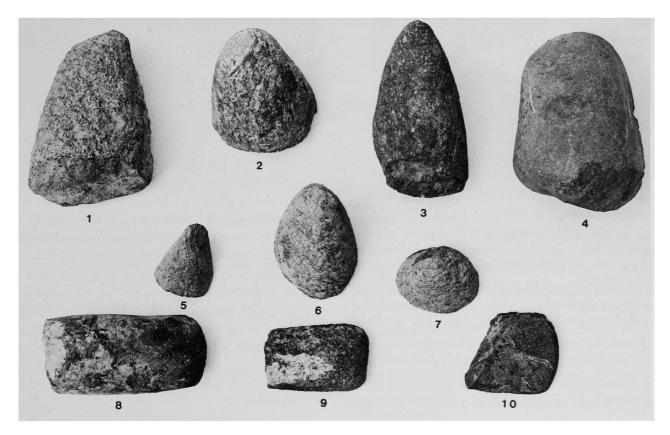


TABLE 39. FR	REQUENCY	OF	OCCURRENCE	OF	AXES
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Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	%
Trench																
Pek 1							1								1	2
Pek 2		6	6	4	1							1			18	34
Ac. 1-2																
Ac. 3									1			1			2	4
Ac. 4								4			2	3			9	17
Ac. 5										1	2	1			4	8
Ac. 6																
Ac. 7										3	4	3			10	19
Ac. 8													2		2	4
Ac. 9														2	2	4
K-1							1								1	2
K-2								3							3	6
Total		6	6	4	1		2	7	1	4	8	9	2	2	52	
%		11	11	8	2		4	13	2	8	15	17	4	4		99



251. Pekmez trench 2; Late Chalcolithic Axe and Hammerstone Fragments.

- 1. 1576.8 hammerstone, Level VIID
- 2. 1568.1 axe fragment, Level VIIC
- 3. 1598f.6 axe, Level VIIIA
- 4. 1566c.1 multipurpose tool, hammer/polisher, Level VIIC
- 5. 1553.4 axe fragment, Level VIIA

- 6. 1597f.1 axe fragment, Level VIIIA
- 7. 1538c.1 axe fragment, Level VIIA
- 8. 1583.1 axe fragment, Level VIID
- 9. 1597f.2 axe fragment, Level VIIIA
- 10. 1563b.1 axe fragment, Level VIIA

250. Acropolis trench 7; Outsized Ground Stone of the Bronze Age.

- 1. 648m Complex B
- 2. 695y Complex C
- 3. 672x Complex C
- 4. 654s Complex C'
- 5. 721kk Complex D
- 7. 628k Complex B'
- 10. 622j Complex B 11. 656t Complex C'

- 6. 6271 Complex B
- 8. *642i* Complex B'
- 9. 662u Complex C'



- 1. 2157.1 adze, Acropolis trench 8; Complex IV, Phase II
- 2. 2160.4 axe fragment, Acropolis trench 8; Complex IV, Phase II
- 3. 4.4.E axe, Acropolis trench 4; mixed contexts, provenance unknown
- 4. 323.4 axe, Acropolis trench 4; Complex Sub I
- 5. 766.7 adze fragment, Acropolis trench 7; Complex I
- 356.1 axe fragment, Acropolis trench 4; Complexes IV-V
- 7. 521.1 axe fragment, Acropolis trench 5; Complex I

- 252. Axes and Adzes of the Bronze Age.
- 8. 301.1 adze, Acropolis trench 4; Post Complexes E and I
- 9. 3201.2a axe fragment, Acropolis trench 9; Complex V
- 353.1 axe fragment, Acropolis trench 4;
 Complexes IV-V
- 11. 335.1 axe fragment, Acropolis trench 4; Complexes II-III
- 12. 303.2 axe fragment, Acropolis trench 4; Post Complexes E-I
- 13. 710.1 adze, Acropolis trench 7; Complexes D-E
- 14. 713.1 axe fragment, Acropolis trench 7; Complexes D-E

- 15. 3192.3b adze, Acropolis trench 9; Complex V
- 16. 651.1 adze, Acropolis trench 7; Complexes C, C', B, and B'
- 17. 7.D.2 axe fragment, unknown provenance
- 712.3 tool fragment, Acropolis trench 7;
 Complexes D-E
- 19. 653.1 adze, Acropolis trench 7; Complexes C, C', B, B'
- 20. 353.2 axe fragment, Acropolis trench 4; Complexes IV-V

3. Axes

Fifty-two axes were recovered representing only 4 % of the ground stone industry. In this category are three common types of tools that we have subdivided on the bases of shape: 1) polyhedral; 2) trapezoidal, and 3) perforated.

Polyhedral and trapezoidal ground stone or pecked stone axes were manufactured from a serpentinite (96 %) which is locally found at Aphrodisias. Perforated axes

were produced from other types of dark hard dense stones that we were unable to identify with known rock deposits in the area. Polyhedral and trapezoidal axes are not highly-polished, but can bear a medium polish. Table 39 indicates their combined frequencies of occurrence.

Both polyhedral and trapezoidal axes make their appearance in Level VIIIA Pekmez trench 2 of Late Chalcolithic 1. Their limited statistics discourage us from

drawing any conclusions about their pattern of development in the Late Chalcolithic. Unfortunately most of these tools are broken. The polyhedral type probably have their most complete example in Pekmez trench 2's Level VIIIA, cat. no. 1598f.6 (Figures 251.3, 379.1). These tools are characterized by being pecked all over; chipping scars occur on all the faces. In Pekmez trench 2, Level VIID of Late Chalcolithic 2, cat. no. 1583.1 (Figures 251.8, 387.3) is typical of the trapezoidal type — with a round flattened butt, a sub-rectangular cross-section, and a convex cutting edge. Careful smoothing is generally present on both sides of the cutting edge. Polyhedral and trapezoidal axes at Aphrodisias are also characterized by no separation between the blade and the poll — the hammer end. The length and proportion of the poll to the overall size of the best-preserved polyhedral could not be determined due to its fragmentary condition, but the trapezoidal type averages 0.087 m in length. One polyhedral model, cat. no. 1598f.6 weighs 355.8 grams and a trapezoidal, cat. no. 1583.1, weighs 297.2 grams. Another trapezoidal, cat. no. 1597f.2 (Figures 251.9, 379.10) weighs 76.6 grams.

All of these types find parallels at Troy. Polyhedrals are found throughout Troy I-IV contexts (Schliemann 1881:237, no. 85 Troy I; p. 569 no. 1281 Troy III; Blegen et al. 1951:Fig. 217 no. 35-64 Troy I; Troy II ibid. Fig. 361 no. 35-443). Trapezoidals are illustrated along with the strata of Troy III and IV (Schliemann 1881:445 nos. 569, 668, 670, and 1279).

The Aphrodisias perforated axes are only three in number and were possibly imported. Two were found in Acropolis trench 4: cat. no. 356.1 (Figures 252.6, 435.9, 436.49) of Bronze Age 3, is succeeded in Complex Sub I of Bronze Age 4-Middle Bronze by cat. no. 323.4 (Figures 252.4, 438.28, 449.1). There is one perforated axe in Acropolis trench 3, also in a Bronze Age context, cat. no. 7D.2 (Figure 431.57). Cat. no. 323.4 finds a corresponding shape both at Troy I (Schliemann 1881:244 no. 92) and at Troy II (Blegen et al. 1951: Fig. 361 no. 36-289). It weighs 291.75 grams. At Kusura, Lamb (1937: Fig. 21 no. 7c) distinguishes between short and long perforated axes. The short type continues into Period C contexts.

4. Adzes

In toto, 22 adzes were catalogued representing 12 % of the ground stone industry. Their tool class frequency of occurrence can be found in Table 40. The most concentrated numbers occur in the Middle Bronze Age period where seven adzes, representing 32 % of the total adzes were found.

Two finely manufactured adzes were recovered from Pekmez trench 2, Level VIIIB of Late Chalcolithic 1 and

Level VIIA of Late Chalcolithic 3. These represent fine tools and are typical of many found at the site. Both are biconvex in section with one face worked and the other flat and rounded. In outline their shape is triangular; the butt end is narrow and smoothed to a rounded shape, the cutting edge straight. The working edge is the width of the blade. Essentially they are monofacial tools — one cutting edge with an arched concavity that served a cutting capacity. We measured edge angles to assess the angle formed by the two faces, taken from points 0.005 and 0.01 m away from the edge on either face. The earlier adze (Late Chalcolithic 1, Pekmez trench 2, Level VIIIB, cat. no. 1599c.7, Figure 376.6) has an edge angle of 42°. The later adze (Late Chalcolithic 4, Pekmez trench 2, Level VIIA, cat. no. 1533.1, Figure 397) has an edge angle of 47 %. No signs of hafting appear — they may have been held in the hand and driven like a chisel or gouge.

These adzes are carefully worked, and highly polished. Their average weight is 70 grams. No real technological difference is apparent between the two. At Beycesultan in Level XXII a comparable adze was found (Lloyd and Mellaart 1962: Fig. F.2.12), and also at Kusura (Lamb 1937: Fig. 23.3a).

Because the stones used for these tools were not locally available, it is probable that they were imports. Further, there does not appear to be homogeneity in the stones utilized — one adze seems to be manufactured from corundum, the other from a dense green-black stone that has yet to be identified. We propose that this is a typical greenstone adze from a type of serpentinite. It is fascinating to note that at Aphrodisias no other tool has the variety of stone types as does the adze - variety of color, of crystalline structure, and of hardness. In Ilios, Schliemann (1881:238) had stones examined and they were reported to be « blue serpentinous rock, green gabbro-rock, black slaty rock, dark-green hornstone, black or gray diorite, jadeite and jade (nephrite). With stones like nephrite and jadeite (not known in any Anatolian context), no wonder Schliemann was excited.

In a similar search for such information, J. Mellaart (1967:21) reported in his study of the Neolithic at Çatal Hüyük that there are two sources of what is known as ordinary greenstone. One of these is located just west of Hacılar and the other is found at Çatal Hüyük itself. As far as we know at present, there are no known sources closer to Aphrodisias than the Hacılar deposits, but an in-depth specialist study will have to be undertaken to ascertain 1) the geologic deposits beyond the Aphrodisias region itself, and 2) confirmed analysis of the materials used for these adzes. There is little question in our minds that these two finely made adzes arrived in their finished condition at Aphrodisias as imports.

Period :	LN(?)	LC1	LC2	LC3	LC4	BAI	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	%
Trench																
Pek 1																
Pek 2		1	2	1								1			5	23
Ac. 1-2																
Ac. 3										1					1	4
Ac. 4										1					1	4
Ac. 5												1			1	4
Ac. 6																
Ac. 7										1	7	1			9	41
Ac. 8													1		1	4
Ac. 9														2	2	9
K-1																
K-2							1	1							2	9
Total		1	2	1			1	1		3	7	3	1	2	22	
970		4	9	4			4	4		14	32	14	4	9		98

TABLE 40. FREQUENCY OF OCCURRENCE OF ADZES

In a few cases, adzes of local manufacture were found. Examples of this include two of mica schist from Pekmez trench 2, Level VIIC of Late Chalcolithic 2, cat. nos. 1568.3 (Figure 390.7); and 1581.16 from Level VIID of the same period. They are very different in form from the two adzes described above, but their fragmented condition precludes any further judgment of a comparative shape-form analysis. At this point, we can only assume that these two adzes were produced at the site itself for this stone type was locally available.

These adzes are probably woodworking tools, used like axes in the char-and-cut method of tree felling. H. Nietsch's study (1939:48-51) mentions that Professor J. Friesen, in experimentation with ground-versus-chipped stone tools used for tree felling, found that polished stone axes are functionally somewhat superior; a tree of 0.17 m in diameter could be felled in seven minutes using a chipped stone axe, and in five minutes using an axe of polished stone. Clark (1945:57-71) confirms these findings. The relatively meager number of adzes would seem to indicate that Aphrodisias was not a place of prolific woodworking industry, unless this activity was carried out by other tools.

The Aphrodisias adzes bear clear resemblances between those that have been recovered from other sites in Late Chalcolithic contexts: at Mersin, greenstone adzes are known in Levels XXVIII-XXV (Garstang 1953:30-31); and the parallels from Beycesultan have already been discussed. From the Bronze Age deposits at Troy, Schliemann published three adzes that resemble our better specimens supra, cat. nos. 1599c.7 and 1533.1 (Schliemann

1881:238, nos. 86, 89 from Troy I and from Troy III, *ibid*.: 445, no. 667). (What Schliemann refers to as an « axe », we consider a class of tools that contains both the axe and the adze). Blegen *et al*. found similar tools in Troy II (1950: Fig. 361, no. 35-286).

5. Whetstones

145 whetstones were found in the prehistoric periods, representing 12 % of the ground stone tools unearthed. In the Middle Bronze period, 31 or 21 % of their class were recovered. This is a high point for the incidence of whetstones. Table 41 shows that most of the tools were concentrated in Acropolis trench 7 where a total of 48 whetstones represented 33 % of the corpus. Nearly 97 % of the whetstones are manufactured from mica schist — a good medium for sharpening, grinding, polishing stone tools and tools manufactured from bone, antler or wood. A fine-grain mica schist of good quality, is readily available locally and there is little question that these tools were produced at the site.

The majority of these tools have no characteristic features except that they are uniformly smooth on one or more faces where they served to grind and polish other tools. Both ends are generally rounded, and the sides are flat or rounded and are either straight or concave from use.

Corresponding tools are not difficult to locate for they are found at Troy (Schliemann 1881:443, no. 645, Troy III. A perforated example is found at Troy I, Blegen *et al.* 1950: Fig. 217, no. 37-294).

Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	9/0
Trench													_			
Pek 1						1	1	1							3	2
Pek 2		10	1	11	2	1	5	5	1			1			37	26
Ac. 1-2																
Ac. 3							3	1	4	2					10	7
Ac. 4								2	2	5					9	6
Ac. 5										7	4	6			17	12
Ac. 6																
Ac. 7										9	27	12			48	33
Ac. 8													7		7	5
Ac. 9														9	9	6
K-1															_	_
K-2								4	1						5	3
Total		10	1	11	2	2	9	13	8	23	31	19	7	9	145	
970		7	0	8	1	1	7	9	5	16	21	13	5	6		100

TABLE 42. FREQUENCY OF OCCURRENCE OF HAMMERSTONES

Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	%
Trench					-						·			-		
Pek 1 Pek 2 Ac. 1-2		5	10	2	1	3	2					1			2 22	3 30
Ac. 3 Ac. 4									1	4					1 4	1 5
Ac. 5 Ac. 6										4					4	5
Ac. 7 Ac. 8									2		9	14	5		25 5	34 7
Ac. 9 K-1 K-2									1					9	9 1	12 1 1
																1
Total %		5 7	10 13	3	1	3	3		5 7	8 11	9 12	15 20	5 7	9 12	74	99

6. Hammerstones

Seventy-four hammerstones have been unearthed representing only 4 % of the ground stone tools. Table 42 presents their frequency of occurrence. All of these tools pose some problems of identification. They do have a resemblance to hammerstones in their attributes of size, weight, and overall shape, and each is characterized by

scars chipped on the ends. Close examination however, reveals a number of possible uses, one of which is a hammer. That these artifacts may have served more than one purpose is suggested in the overlapping and frequent combination of chipped and smoothed surfaces particularly on their edges.

TABLE 43. FREQUENCY OF OCCURRENCE OF POLISHING PEBBLES

Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	%
Trench			,													
Pek 1							2								2	4
Pek 2		7	4	5	2	2		1							21	41
Ac. 1-2																
Ac. 3								1							1	2
Ac. 4								1		1					2	4
Ac. 5										2	1	2			5	10
Ac. 6																
Ac. 7										5	10	3			18	35
Ac. 8													1		1	2
Ac. 9																
K-1																
K-2									1						1	2
Total		7	4	5	2	2	2	3	1	8	11	5	1		51	
970		14	8	10	4	4	4	6	2	15	21	10	2			100

TABLE 44. FREQUENCY OF OCCURRENCE OF SMOOTHED STONES

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	970
Trench										• • •						
Pek 1						1	6	5							12	5
Pek 2		23	11	15	4	4	4	4				1			66	29
Ac. 1-2																
Ac. 3							5	4	5	1	2				17	7
Ac. 4								5	11	10		1			27	12
Ac. 5										7	1	7			15	7
Ac. 6																
Ac. 7										8	41	26			75	33
Ac. 8													8		8	4
Ac. 9														3	3	1
K-1																
K-2	_								1	3					4	2
Total		23	11	15	4	5	15	18	17	29	44	35	8	3	227 ,	
070		10	5	7	2	2	7	8	7	13	19	15	4	1	,	100

Hammerstones appear in Late Chalcolithic 1 and are found throughout all periods except the Bronze Age 3 period. They are manufactured from serpentinite (49 %), marble (42 %), and other hard stones (9 %). It is probable that they were used for crushing or hammering materials that are traditionally softer than their own.

7. Polishing Pebbles

Fifty-one polishing stones were unearthed, 22 % of these appearing in the Middle Bronze period. Although all their surfaces are generally polished and smoothed, these stones have a wide range of shape, size and type of rock used for their manufacture. In shape they may be rounded like a river pebble, cat. no. 1546.10 (Figure

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	970
Trench						-										
Pek 1						1									1	2
Pek 2		6	4	5		2	1					2			20	47
Ac. 1-2																
Ac. 3									2						2	5
Ac. 4								1	1	1					3	7
Ac. 5										2		1			3	7
Ac. 6													1		1	2
Ac. 7										2	7	1			10	23
Ac. 8													1		1	2
Ac. 3																
K-1																
K-2									2						2	5
Total		6	4	5		3	1	1	5	5	7	4	2		43	
070		14	9	12		7	2	2	12	12	16	9	5			100

TABLE 45. FREQUENCY OF OCCURRENCE OF DISKS

394.18); cube-shaped, cat. no. 1598b.11 (Figure 380.11); irregularly flattened, cat. no. 1598f.55 (Figure 379.27); or irregularly-shaped in cross-section cat. nos. 1598f.20 (Figure 379.26) or 1596.1 (Figure 387.18). In size they range from 0.026 to 0.05 m. A dense black-colored fine-grained type of rock is used for 44 % of their manufacture, a « greenstone » and/or serpentinite for 39 % marble 10 %, schist 6 %, and quartz 4 %. The varying shapes of these stones may indicate that they served in different capacities, i.e., as burnishers or game pieces.

8. Smoothed Stones

227 smoothed stones were catalogued representing 19 % of all the ground stone tools classified (the second largest single class after grindstones see Table 35). No specific use or function can be theorized about these tools. Possibly form had something to do with function, almost any of these could have served as weights, jar stoppers, anvil stones for pottery manufacture, or in any number of other use capacities.

This is a class of objects comprised of discoids and pebbles that are a mixture of many shape-forms; triangular, ovoid, triple-faced, and those whose form cannot be determined due to their fragmented condition.

Their shared characteristics include size — they are between 0.042 and 0.051 m in length and about the same in width; and ca. 0.019 m in section. A minimum of

one of their main surfaces and their edges are smoothed. Typically, one surface is heavily encrusted.

Table 44 shows that smoothed stones appear in Level VIIIB of Late Chalcolithic 1 and continue throughout all periods of the site with no exception. They are considered to have been standard tools of the repertoire. 77 % were manufactured from marble, 13 % from schist, 6 % from serpentinite, one was found of calcium carbonate and another of greenstone, and 3 % have not yet been identified. Most of these materials are directly related to the geologic deposits surrounding Aphrodisias (see the geologic map in Figure 10).

9. Disks

Only 43 disks were found in the prehistoric levels at Aphrodisias. 50 % of this class are manufactured from schist, 35 % marble, and 15 % are from other stones. Polished stone disks or discoidals make their appearance at Aphrodisias in Late Chalcolithic 1 Level VIIIB of Pekmez trench 2 and continue to the Late Chalcolithic 4 when none were recovered. They then reappear in the Bronze Age 1 period and continue until the Iron Age. This category includes two types that are based on size. Large disks are characterized by having a diameter range from 0.085 to 0.11 m, and a thickness from 0.020 to 0.030 m. Small disks range from 0.022 to 0.033 m in diameter. Typical of all these disks is that they are slightly asymmetrical; both faces are flat, with one face appearing to show higher polish than the other.

a) Large disks

Both grinding and chipping are associated with the manufacture of these pieces. With the exception of one example, their final form is smoothed and polished. The exception, a white marble disk from Pekmez trench 2, cat. no. 1599c.9, of Late Chalcolithic Level VIIIB (Figure 376.1), should be singled out for special study — for chipping is intense on one edge and there are signs of secondary resharpening, indicating that it may have been used as a cutting or scraping tool.

b) Small disks

Small disks may be left plain or perforated. Perforated stone disks are typical of the Late Chalcolithic object repertoire at Beycesultan (Lloyd and Mellaart 1962: Fig. F.2.6). Their manufacture involved a preliminary chipping and then the polishing of a circular blank to attain a flat wafer-like appearance. When perforated, they were bored bilaterally. Cat. no. 1576.3 (Figure 387.14) shows an uncompleted attempt at drilling from both faces. Those that were perforated may have served in a different capacity than the others.

The function of these small disks is not known; their shape-form may have served for a multiplicity of purposes (such as stoppers, grinding tools, weights, or even gaming pieces).

10. Balls and Bolas

Bolas and balls numbered only 27 or 2 % of the ground stone corpus. The frequency of their distribution is found on Table 46. Their popularity is at its peak in the Middle Bronze period.

Into this group were placed spherical objects of all sizes. Balls, representing 80 % of this artifact class, averaged a diameter of 0.027 m, and bolas, at 20 % or only five in number, ranged in diameter from 0.055 to 0.051 m. Clearly these artifacts had different functions but were placed together for convenience.

Balls are a natural formation of calcium carbonate. They may have served as gaming pieces, toys or had a religious purpose — for they are manufactured of the same material as the fat lady figurines.

Bolas were manufactured from serpentinite and marble. Typical of this group is *cat. no. 1551.4* (Figure 400.3), its surface pock-marked like an orange. Schliemann (1881:442) reports finding bolas in « enormous number » in Troy III and IV (*ibid.*: 442, 236, no. 81) and also Blegen *et al.* (1950: Fig. 363, no. 6.65) report the same thing.

TABLE 46. FREQUENCY	OF	OCCURRENCE	OF	BALLS	AND	BOLAS
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Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	970
Trench																
Pek 1																
Pek 2					3										3	11
Ac. 1-2																
Ac. 3									2		4	1			7	26
Ac. 4								1	2						3	11
Ac. 5										2		3			5	18
Ac. 6																
Ac. 7										2	5				7	26
Ac. 8													1		1	4
Ac. 9														1	1	4
K-1																
K-2				<u>-</u> -												
Total					3			1	4	4	9	4	1	1	27	
0 / ₀					11			4	14	14	33	14	4	4		100

Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	%
Trench																
Pek 1	-						1	1			·				2	40
Pek 2				1	1										2	40
Ac. 1-2																
Ac. 3									1						1	20
Ac. 5																
Ac. 6																
Ac. 7																
Ac. 8																
Ac. 9																
K-1																
K-2																
Total				1	1		1	1	1						5	
07/0				20	20		20	20	20							100

TABLE 47. FREQUENCY OF OCCURRENCE OF BEADS

11. Beads 129

Stone beads are a small artifact class at Aphrodisias, only five being catalogued. Two of these appeared in the Late Chalcolithic levels of Pekmez trench 2: one in Level VIIA and the other in Level VII. Both are flat, thin, small, short disk-shaped beads. They were produced from materials that have not been positively identified but one appears to be of carnelian (or red jasper), while the other is made of a soapy-feeling black stone (steatite?). Their manufacture is crude. The carnelian bead (cat. no. 1533.3, Figure 397.34) is chipped on all of its edges; a perforation that was attempted from one face is left uncompleted. Its transverse section is not symmetrical and the overall shape is flat. The perimeter is roughly and irregularly worked. The black bead (cat. no. 1516.6, Figure 400.20), shows a higher quality of workmanship; its perimeter is well-smoothed and the line of the transverse section squared-off. It is bilaterally drilled and as a result the axis is slightly irregular. The flat surfaces are well finished and highly polished to a glossy luster.

A bead of black marble (cat. no. 1405.1, Figure 369.2), was recovered from Pekmez trench 1, Level VII of the Bronze Age 2 period. A calcium carbonate bead, also registered in Pekmez trench 1, is from Bronze Age 3 (cat. no. 1403.3, Figure 369.1). It is unperforated and

measures 0.011 in diameter. Of the same material is another bead (cat. no. 228.3, Figure 431.42) that is perforated. It belongs to Acropolis trench 3, Complex II, Room 2 of the Bronze Age 4 period.

J. Mellaart provides us with some information as to possible sources of the stones for these beads. In his study of Çatal Hüyük (1967:130-131), he suggests that the Badakhshan Region in Afghanistan is not only a source for steatite and hematite, one of which may be the material used for our black bead, but it is also a source of carnelian. Of course, carnelian, may have been mined in Iran but no exact locations have been ascertained. Few definite conclusions can be offered about known deposits and systems through which these beads may have been exchanged. Such questions must be left open until more extensive research in Anatolia itself is carried out.

12-14. Outsized Tools - mortars, querns and pestles

Thirty roughed-out or outsized ground stone tools were unearthed: three pestles, 20 mortars or querns (Table 48) and seven pivot stones (Table 49). Of the pestles two were found in contexts ascribed to Pekmez trench 2, Late Chalcolithic 3 and Middle Bronze mixed; and one was found in Acropolis trench 7, Middle Bronze-Mixed. Photographs of these implements are shown on Figures 246-250 inclusive. It is natural that marble and schist, readily available nearby, should have been used for their manufacture.

^{129.} In toto, 25 beads appeared in the Pekmez levels, including a bead of an unidentified metal, cat. no. 1516.2 (Figures 400.22, 274.5 of Level VII which was ascribed to Late Chalcolithic 4) and the gold beads (cat. no. 1401.19, Figures 368, 372.2, 374.14) associated with the pithos burial of Pekmez trench 1. These are discussed under metal, infra.

TABLE 48 FREQUENCY OF OCCURRENCE OF MORTARS QUERNS

Period:	I \(\gamma(2) \) I.C1	102	LC3	1 (4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	L.B	IA	TOTAI	9/0
Trench															
Pek 1															
Pek 2		2	1			1		2						6	30
Ac 1-2															
Ac. 3								1						1	5
Ac 4							10	1						11	55
Ac 5															
Ac. 6															
Ac 7										1				1	5
Ac. 8												1		1	5
Ac. 9															
K-1															
K-2															
Total		2	1			1	10	4		1		1		20	
$\sigma.^0$		10	5			5	50	20		5		5			100

TABLE 49. FREQUENCY OF OCCURRENCE OF PIVOT STONES

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	070
Trench													·			
Pek 1																
Pek 2			2												2	29
Ac. 1-2																
Ac. 3									1						1	14
Ac. 4									1	1					2	29
Ac. 5												1			1	14
Ac. 6																
Ac. 7												1			1	14
Ac. 8																
Ac. 9																
K-1																
K-2																
Total			2						2	1		2			7	
0.0			29						29	13		29				100

This industry cannot be ascribed to any definite period on typological grounds. These forms continued, apparently without much change, during the prehistoric deposits — they are all part of the standard equipment of Late Chalcolithic-Bronze Age food production, which shares with other ground stone tools in having a Neolithic ancestry. One common quality of these tools is that they all bear signs of intensive use; cat. no. Pek 2 m (Figure 246.2)

was so used that it was completely worn through. The artifacts in this small collection bear similarity with the standard repertoire of outsized tools for the area as a whole. Certain parallels exist between Aphrodisias' outsized tools and those found at other sites: a saddle quern from Troy (Schliemann 1881:447, no. 678) resembles one from Acropolis trench 7, Complex D, dated to the Middle Bronze Age (cat. no. 704gg, Figures 473.58; 249.10).

15. Miscellaneous Objects

225 objects fell into the miscellaneous category of ground, pecked, smoothed and/or polished stone tools. These represent objects that were 1) singular or unique to the site; 2) groups that fell beyond our classification system; 3) artifacts too fragmented to accurately categorize and/or 4) those that could not be located in the storerooms for documentation. This section will conclude with a brief discussion of a few of these objects that are of special interest. (Stone moulds are discussed under the section dealing with metal.)

a) Maceheads

Three maceheads found at Aphrodisias can be paralleled with those from Troy III (Schliemann 1881:442, no. 635). Cat. no. 320.8 (Figure 446.27) is from Acropolis trench 4 and dates to Bronze Age 4-Middle Bronze Age contexts. This fragmented piece is manufactured from serpentinite. Cat. no. 316.2 (Figure 441.11) is a blue marble macehead, also from Acropolis trench 4 and of the same date. The macehead fragment found in Complex B of Acropolis trench 5 (cat. no. 472.6, Figures 456.8, 459.40) is dated to Middle Bronze-Mixed contexts. It is manufactured from an unidentified green-speckled stone. Lloyd and Mellaart (1962:276, Fig. F 3:2) report a green stone macehead from Level XIV or to Beycesultan E.B.2, Anatolian EB IIIA, which bears a close resemblance. At Kusura, Lamb (1937) found a variety of maceheads. The Aphrodisias types align themselves well with Lamb's (Fig. 22, no. 5).

b) Pecking Tools

One class of objects that were placed with miscellaneous artifacts are what we now consider to be pecking tools. All of these are manufactured from serpentinite. Similar tools were found in Troy (Schliemann 1881:238, no. 88).

No coherent pattern of development can be put forth for the presence of these pecking tools in some trenches and not in others — nor for their disappearance after Late Chalcolithic 1 until the Bronze Age 4 period.

A similar object appeared in Level XXII at Beycesultan (Lloyd and Mellaart 1962: Fig. F.2.7). This level is dated to the EB IIIA according to the Anatolian chronology presented in Table 6, p. 160.

c) A Cult Object?

A single example of a stone « breast », made of calcium carbonate, ¹³⁰ was unearthed in Late Chalcolithic 1, Level VIIIB of Pekmez trench 2 in unit 1599c (cat. no. 1599c.1, Figure 376.2). The photograph of this object shows its overall form which looks like an ovoid breast with a nipple carved at its end. It probably had a cultic purpose of some sort — particularly since it is made of the same material as the fat lady figurines. Comparative material for this type of object is not abundant, and good parallels are lacking.

d) A Spit Support?

A possible spit support (cat. no. 1551.7, Figure 400.1) can be paralleled at Troy III in the Early Bronze Age (Schliemann 1881:436, no. 666). The Aphrodisias example has no side perforation so its function should be questioned. This object may also have served as a weight.

e) Bowls

Six bowl fragments were recovered. The earliest (cat. no. 352.5) was found in Acropolis trench 4 in Complexes VI-IV, dated to the Bronze Age 3 period (or to Anatolian EB IIIA). Two other bowl fragments were from Pekmez trench 2, Level IVa dated to the Bronze Age 4 period. They are cat. nos. 1472.3 and 1455.3 (Figures 412.17 and 413.8 respectively). A fourth fragment (cat. no. 1465.1) was found in the same trench in Level III contexts or Bronze Age 4-Middle Bronze period (Anatolian EB IIIB transition to MB). Dating to the same period are two other fragments, from Acropolis trench 5 (cat. no. 496.1, Figure 455.28), and the other from Acropolis trench 7 (cat. no. 736.102, Figure 472.24). All but one are manufactured from white marble; cat. no. 496.1 is made of greenstone.

Stone bowls are of particular interest — their presence is uncommon in Anatolia. Indeed, no parallels for the Aphrodisias bowls can be found at Troy. At Beycesultan, however, there are two complete examples (Lloyd and Mellaart 1962:276; Plate XXXII:7, 8). The authors (ibid. 276) suggest that at Beycesultan these may have served for cosmetics because small pestles were found associated with them in the Level XVIIb temple, placed in the Anatolian EB II period.

TABLE 50. FREQUENCY OF OCCURRENCE OF MISCELLANEOUS TOOLS (NO BALLS OR BOLAS)

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	%
Trench									_							
Pek 1							2	2							4	2
Pek 2		19	12	15	7	6	3	2	6			9			80	35
Ac. 1-2																
Ac. 3								1	8			2			11	5
Ac. 4								8	1	13					22	10
Ac. 5										4	7	4			15	7
Ac. 6												2		2	4	2
Ac. 7										19	21	16			56	25
Ac. 8													9		9	4
Ac. 9														9	9	4
K-1									1						1	0
K-2		_					7	5	2						14	6
Total		19	12	15	7	6	12	19	18	36	28	33	9	11	225	
970		8	5	7	3	3	5	8	8	16	12	15	4	5		100

TABLE 51. PREHISTORIC APHRODISIAS; DISTRIBUTION OF PECKING TOOLS

TRENCH	Period	Cat. no.	Illustration
Pekmez 1	BA3	1404.9	Figure 374.9
Pekmez 2	LC1	1599c.50	_
Pekmez 2	LC1	1599b.62	
Pekmez 2	LC1	1599a.14	_
Pekmez 2	BA4-MB	1564.1	-
		1543.1	_
Acropolis 3	BA4-MB	212.2	Figure 433.13
Acropolis 4	BA4	331/35.1	Figure 437.3
		335.1	Figures 252.11, 437.20,
			438.25
Acropolis 5	BA4-MB	522.2	Figures 450.17, 452.7
Acropolis 5	MB/MB-Mixed	485.7	Figures 455.27, 459.54

STONE SPINDLE WHORLS

Spindle whorls numbered 227 at prehistoric Aphrodisias and are present from the Late Chalcolithic 1 to the Iron Age. However, only 13 spindle whorls of stone were recovered, representing 6 % of the total. These are charted in Table 52 along with ceramic and the single bone whorl found. (See Table 128 for the frequencies of ceramic spindle whorls. A separate discussion is given to ceramic whorls under miscellaneous ceramics, p. 377ff.).

The earliest stone whorl occurs in Bronze Age 3 contexts. Their distribution is not constant throughout later Bronze Age deposits and their presence is registered in only four of the prehistoric trenches.

A great variety of non-local raw materials were used in spindle whorl manufacture, but the majority of these stone types have yet to be identified. It is probable that stone whorls developed from ceramic types and that they were in use contemporaneously. Whereas the ceramic whorls may be either plain or ornamented, stone whorls at Aphrodisias were undecorated — the stone itself, its polish and shape, lent this tool its aesthetic qualities. In Troy II, a stone spindle whorl was found which Blegen et al. note (1950:373, no. 35-106) was produced from a dark gray-green material. Lamb (1937:50, 51, Fig. 23, no. 5a) writes that one of the Kusura stone artifacts looks like a spindle whorl. It was produced from a « hard black rock... (that) is a rare form ». Schliemann (1881:422) reported that he collected 50 stone spindle whorls at Troy, and Blegen et al. (Ibid.) mention the collection of one in Troy II contexts. Then there seems to have been a gap from Troy III to V, for no stone whorls occur during this interval. The later Early Bronze Age whorls appear to have been made exclusively from pottery — because none of stone are reported again before Troy VI of the Middle Bronze Age (Blegen et al. 1953, Fig. 298, nos. 36-349; 33-74). The impression given from the paucity of evidence at Aphrodisias is that stone whorls were not in common use during any part the Bronze Age.

TABLE 52. FREQUENCY OF OCCURRENCE OF STONE SPINDLE WHORLS

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	%
Trench										•						
Pek 1																
Pek 2																
Ac. 1-2																
Ac. 3								1	3		2				6	50
Ac. 4											2				2	16
Ac. 5																
Ac. 6														2	2	16
Ac. 7												2			2	16
Ac. 8																
Ac. 9																
K-1																
K-2																
Total								1	3		4	2		2	12	
9%								8	25		33	17		17		100

B. CHIPPED STONE

In archaeology, chipped stone analyses are not restricted to traditional factors of manufacture and raw materials, for recent developments in these studies are concerned with a host of other research projects including use-wear analysis and replication studies. The studies presented here are but a first step in determining some aspects of this industry. The sources of information relating to the Aphrodisias chipped stone industry are varied. These consist of a) the search for the sources of the raw materials and b) the artifact study including the catalogue and typology.

Environmental factors have significant implications for the understanding of trends found in artifact repertoires. This is particularly true in the study of chipped stone. For example, obsidian sources exist in areas of volcanic activity such as those found in Central Anatolia, the Lake Van region, and in the Aegean. It is also known that such sources do not exist in Caria. Given these facts and the presence of obsidian at Aphrodisias three questions arise: 1) Where did the obsidian come from? 2) What is its qualitative and quantitative relationship to the chipped stone industry? 3) How was it brought to the site? Our inquiries necessarily have centered around questions one and two.

A summary of Bordaz' (1962) search for flint sources in the Dandalas valley is useful in showing the relationship of raw material source to the site. Flint deposits in the immediate area may not have been mined in antiquity, but at least they were available for exploitation. Bordaz' comments (1962:16-18) are quoted below.

« Sources of flint in the Dandalas valley. The mountains of the Dandalas valley are essentially an area of mica schist with some eroded limestone deposits. Only two localities are known to yield flint, and these are both situated on the last northeastern spur of the Çubuk Dağ in the Maeander valley.

Çakmaksı-Cevizi is a high hill cut to the southwest by a large ravine and located approximately 2.5 km south-southeast of Altağa Çiftliği. It is the last hill overlooking the flat Maeander plains immediately in front of Tepe Hisar (the acropolis of the ancient city of Antiocheia). Numerous fragments of flint were picked up on the surface.

Kaşıkçı Mezarliği. This hill is located immediately to the southeast of the preceding one. Nodules of flint were collected on the surface as well as flakes and fragments of flint, which are much more numerous at this site than at the preceding one. Despite a careful inspection of these two localities, no stone tools were found, and only a few stray, undecorated potsherds were seen. The flint collections made at these two sites resemble rough debitage, without any retouching. One flint strike-a-light of the shape still favored in the area was found on the surface of the second site. Local informants indicate that this flint outcrop was never used to manufacture döven blades, but had been used as a source of strike-a-lights, especially until the end of World War II when flint flaked into convenient shapes was still sold in the local markets.

Kirik. The only other outcrop of siliceous stone occurred at a place called Kirik (Hali Hüseyin), 5 km southeast of Seki at the other end of the Dandalas valley. It is a brown stone with very poor fracture, found on top of a hill in the pine forest zone, about 150 m above the bed of the Deli in Derisi, an intermittent stream. The flaking can hardly be controlled, and no artifacts were found in the area ».

During this survey, Bordaz visited the Tavas region and made the following comment (1962:25).

« The Tavas Region. The source of the flint blades used in the manufacture of the döven (threshing sledge) was always given in Geyre as Tavas in the Tavas plain, a town located about 40 km west of Geyre. The mountains to the east of Tavas are indicated on the geological map as a limestone area, and we planned to extend the survey to this region. The first inquiries made in Tavas indicated that some caves existed in the mountains near Uzunpinar to the southwest, but that there was no evidence of any finds of chipped flints in the area. The döven flints referred to in Geyre were brought to Tavas for sale by döven manufacturers from the Salda region, more than 100 km to the east ».

This modern analogy is useful insofar as it indicates that flint continues to be transported to this area from some distance even though there may be local flint deposits closer at hand.

Before the presentation of the following research, a review of the approaches and history of these studies by various contributors are in order. Only then can a clear picture of the strengths and weaknesses underlying this body of information be placed in its proper context.

Chipped Stone Analysis 1971-1974

A chipped stone study had been superficially worked out by the excavators, plus an extensive survey was undertaken by Brian Hesse in 1971. In this preliminary study the collections from all the prehistoric trenches were divided into five groups. For example, the groups that

directly concerned the Pekmez deposits were Pekmez flint, obsidian, and Pekmez quartz. Each group was then subdivided by kinds of retouch, i.e., purposeful retouch and use retouch. Chipped by-products and cores were also divided into functional types, i.e., cores and waste. Finally the collection was described and photographed. When we arrived at the site, we found all of the pieces individually bagged and placed in storage containers.

Chipped Stone Analysis 1975-1982

In 1977, an assessment of the chipped stone materials was undertaken by S. J. Ehlinger. The results confirmed the necessity for a comprehensive study. A review of the literature revealed that the problems faced by B. Hesse in 1971 were essentially unchanged six years later. Few site reports devoted to prehistoric Anatolia contained more than a cursory description of excavated chipped stone there was no established typology for the Anatolian Chalcolithic. Further it was found that the preliminary study itself was incomplete: that photographs could not be located; that the majority of catalogued pieces had not been labeled or listed in the field notebooks; and that only rough representations of the pieces had been drawn. During my field seasons at Aphrodisias the site's chipped stone was labeled, re-examined, re-measured, photographed, and catalogued, and drawings were made of hundreds of representative pieces. (Although it was generally not logged in the field notebooks, we assumed the excavators had kept all the chipped stone found during the course of excavation). The ultimate goal was to determine the character of the chipped stone industry, to identify its components, and to interrelate these factors to the cultural assemblage as a whole.

From 1977 to 1981 S.J. Ehlinger and J. Léon Leurquin (1981-1982) worked at the site, sifted through previous reports, studied the assemblages, and drew the chipped stone. As part of a thorough review and comprehensive analysis of the excavated prehistoric evidence, S.J. Ehlinger (1980) completed the comprehensive study of the chipped stone from Pekmez trench 2 in a work entitled Aphrodisias in South Western Turkey; The Chipped Stone Industry during the Late Chalcolithic Period. J. Léon Leurquin (1982) presented the analysis of the Aphrodisias Bronze Age chipped stone industry in a work entitled Industrie lithique du site antique d'Aphrodisias, Turquie. In 1983, J. Léon Leurquin combined these two previous studies for this volume.

Any typological study is differentiated by a number of factors. In the catalogue, the purpose of the information given is explicit so that it can be used for comparison with material from other sites. Thus, the descriptive catalogue of chipped stone presents the catalogue number and tool function and/or shape; length, width and thickness measurements in meters; type of stone and, whenever applicable, the location, amount and type of retouch. Definitions of tools and the typology are found in the following pages — a trench-by-trench and period discussion of tools with special features can also be found.

In 1981, M. James Blackman of the conservation Analytical Laboratory of the Smithsonian Institution in Washington D.C., (The National Museum of American History and Technology), agreed to analyze the Late Chalcolithic obsidian by neutron activation. This study follows the typological analysis — its results are of great importance for the understanding of Aphrodisias' place in a wider cultural horizon.

Chipped Stone Analysis

by Jeannine Léon Leurquin

In the artifact Catalogue, representative pieces of the lithic industry have been described according to area, trench, complex or level and unit. In addition to these tools, large numbers of blank products and waste were recovered. It would be difficult to acquire a realistic introduction to the chipped stone industry of Aphrodisias without first examining the raw materials of the total assemblage — including tools, waste and blank products in relation to each trench, complex or level.

Raw Material

The types of stone that are most representative of the lithic industry in prehistoric Aphrodisias are flint, chert, quartz, and finally, obsidian. The predominant raw material in use is a flint-chert, which is generally gray, brown or white in color, but veined flints also occur. Deposits of these raw materials have been located in the 1982 reconnaissance of the Dandalas Valley. 131 A miscellaneous stone type, resenite, is also worked; beds of this raw material are natural deposits in the valley. A plentiful supply of quartz is found near the site in the Baba Dağ mountain range. Types include opaque quartz, milky quartz, veined quartz, hyalin quartz, citrine quartz and rock crystal. In the Chalcolithic period the majority of quartz is unmodified, in the Bronze Age much of it has been worked for tool use. Obsidian is of particular interest because of the absence of sources in SW Anatolia. The neutron activation analysis, which follows, discusses its provenience for the Pekmez trench 2 Chalcolithic periods. The question as to whether there are different sources in the Bronze Age periods, however, must remain a question until this analysis is undertaken.

Following the order of the Catalogue (Pekmez trench 1, Pekmez trench 2, Acropolis trenches 1-9, Kuşkalesi trenches 1 and 2), each trench discussion will be preceded by two tables of frequency in relation to raw materials. The first table gives the frequency of occurrence of tool types and blank products, and the second table gives the frequency of occurrence for tools, blank products and waste.

Pekmez Trench 1

A total of 39 tools were recovered from Pekmez trench 1. The frequency of occurrence of tools according to raw materials is 75 % flint and 25 % obsidian. Debitage products including cores, flakes, blades, plus waste (unshaped spalls and lumps) consist of 43 % flint and chert, and 57 % quartz.

TABLE 53. PEKMEZ TRENCH 1; LEVELS IX-VI
INCLUSIVE
DISTRIBUTION OF CHIPPED STONE TOOLS AND BLANK
PRODUCTS ACCORDING TO RAW MATERIALS

LEVELS	IX-VII	VI
FLINT-CHERT		
Blade tools		
Sickle	1	2
Blank products		
Blade core	1	
Flake	1	3
QUARTZ		
Blank products		
Blade core	_	1
Flake Blade	1	l i
		1
OBSIDIAN		
Blade tools		
Notched, retouched blade		1
Sickle	_	1

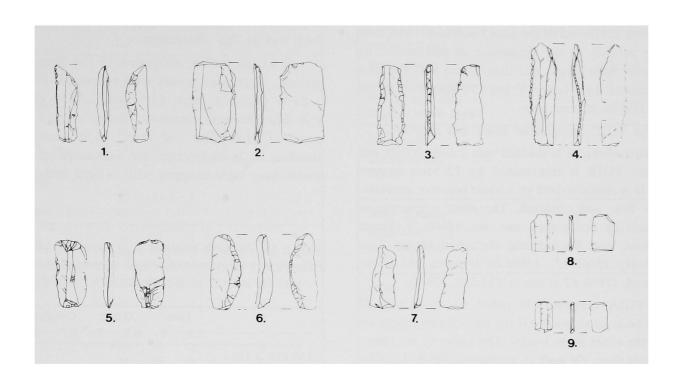
TABLE 54. PEKMEZ TRENCH 1; LEVELS IX-VI INCLUSIVE FREQUENCY OF OCCURRENCE OF RAW MATERIAL ACCORDING TO TOOLS, BLANK PRODUCTS AND DEBITAGE

	Flir	nt	Quai	tz	Obsid	ian
	B.P.	T.	B.P.	T.	B.P.	T
LEVELS IX-VII	2	1	2			
Total	2	1	2			
070	40	20	40			
Level VI						
	3	2	2			2
Waste	10		14			
Lump			1			
Total	13	2	17			2
970	39	4.5	52			4.5

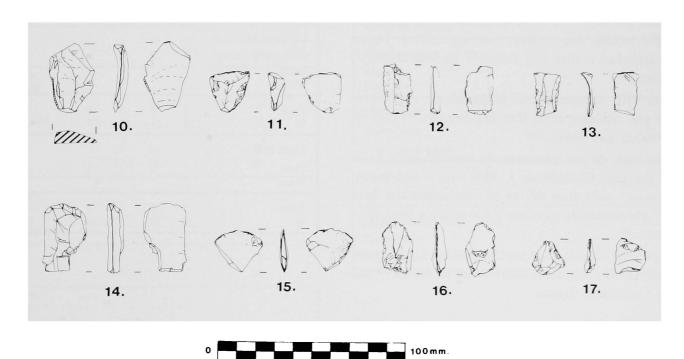
Nota bene: Abbreviation: B.P. = Blank Products
T. = Tools

For Levels IX-VII, blank products includes cores, flakes and blades; for Level VI only cores and flakes.

Level VIII B



Level VIIIA





Level VIIIB

- 1. 1599b.38 sickle fragment
- 2. 1599b.37 retouched blade fragment
- 3. 1599b.43 sickle fragment
- 4. 1599c.10 sickle fragment
- 5. 1599b.39 endscraper on a
- retouched blade
- 6. 1599c.45 blade blank
- 7. 1599c.43 crested blade
- 8. 1599c.40 blade blank
- 9. 1599b.42 bladelet fragment

253. Pekmez trench 2; Levels VIIIB-VIIIA, LC1, Chipped Stone. Level VIIIA

- 10. 1598f. 18 retouched flake
- 11. 1598f.17 sidescraper
- 12. 1598a.8 notched blade fragment
- 13. 1598a.4 retouched blade fragment
- 14. 1598f.28 composite tool
- 15. 1598f.4 retouched flake
- 16. 1598e3.9 notched flake
- 17. 1598d.1 retouched flake

Pekmez Trench 2

The earliest levels of Pekmez trench 2, Levels VIIIC-VII, have been attributed to the Late Neolithic(?) and Late Chalcolithic periods. In our discussion of this trench, we will begin with these levels, and then follow with the later level subdivisions, i.e., Levels V and IV, belonging to the Early and Middle Bronze ages.

In Level VIIIC no chipped stone was recovered.

Late Chalcolithic 1 is divided into Levels VIIIB and VIIIA. Level VIIIB is represented by 12 tools or tool fragments. It is characterized by a blade industry manufactured from flint and obsidian. The most representative pieces include an endscraper, cat. no. 1599b.39 (Figure 253.5), sickles, and backed and retouched blades. Cat. nos. 1599b.38, 1599b.43, 1599c.10 (Figures 253.1,3,4), 1599b.37, and 1599b.42 (Figures 253.2,9, 378.2).

Level VIIIA contains 149 pieces of which only 57 pieces have been catalogued. Of the tools found, 50 % are flakes and the other 50 % blades. The majority are manufactured from flint. Of note is a composite tool, (cat. no. 1598f.28, Figure 253.14), and several retouched pieces.

Late Chalcolithic 2 is divided into Levels VIID and VIIC. In Level VIID, 41 pieces were recovered: 32 % or 13 of these are tools and 68 % or 28 are blank products. Tool types include one scraper, (cat. no. 1581.8, Figure 255.4), retouched blades and flakes, 132 backed blades, 133 and sickles. 134

Level VIIC includes a total of 60 pieces: 22 of these are flint and obsidian tools that are scrapers, 135 and retouched flakes and blades. 136

Flake tools do not dominate the assemblage of Level VIIB of the Late Chalcolithic 3. This level is represented by 51 pieces: only four of the 42 catalogued are flake tools: 137 the remaining nine are blade tools, among them 21 scrapers. 138

Level VIIA, also in the Late Chalcolithic 3, has a total of 54 pieces: six tools are manufactured on blades ¹³⁹ and four are reknapped flakes.

Level VII, attributed to Late Chalcolithic 4, is represented by 32 chipped stones: six are blade tools and three are flake tools. No obsidian is recorded from this level.

Level VI represents the Bronze Age 1 period. Only five of the 20 pieces recovered are tools. One obsidian flake was in this assemblage.

In Levels V-IVa, attributed to the Bronze Age 2-3 periods, 58 chipped stones were recovered. Raw material is 54 % flint and chert, 35 % quartz, 7 % obsidian and 4 % miscellaneous materials. Blank products are composed of 51 % flint and chert, 46 % quartz and 3 % obsidian. It is of interest that non-modified flakes and blades have been knapped with a hard striker.

TABLE 55. PEKMEZ TRENCH 2; LEVELS V, IV INCLUSIVE FREQUENCY OF OCCURRENCE OF RAW MATERIAL ACCORDING TO TOOLS, BLANK PRODUCTS, AND DEBITAGE

	Fli	nt	Qua	rtz	Obsid	lian	Mis	sc.
	B.P.	T.	B.P.	T.	B.P.	T.	B.P.	T.
LEVELS V-IVe								
Flake	2	8	1	4		1		
Waste	10		9		1			
Total	12	8	10	4	1	1		
%	33	22	27	12	3	3		
LEVELS IVd, c, b								
Core, blade, flake, Blade	3	4	5	1				
Waste			1					
Total	3	4	6	1				
970	22	29	42	7				
Level IVa								
Core	1	2		3		1		1
Waste	2							
Total	3	2		3		1		1
%	30	20		30		10		10

^{132.} Cat. no. 1581.7 (Figure 255.5)

^{133.} Cat. no. 1576.7 (Figure 255.3)

^{134.} Cat. no. 1581.4 (Figure 255.1); Cat. no. 1581.5 (Figure 255.2)

^{135.} Cat. no. 1546a.100 (Figure 255.12)

^{136.} Cat. no. 1563a.100 (Figure 255.10); Cat. no. 1561.1 (Figure 255.9)

^{137.} Cat. no. 1547.100 (Figure 256.1)

^{138.} Cat. no. 1546.1 (Figure 256.3); Cat. no. 1546.2 (Figure 256.5)

^{139.} Cat. no. 1533.6 (Figure 256.7)

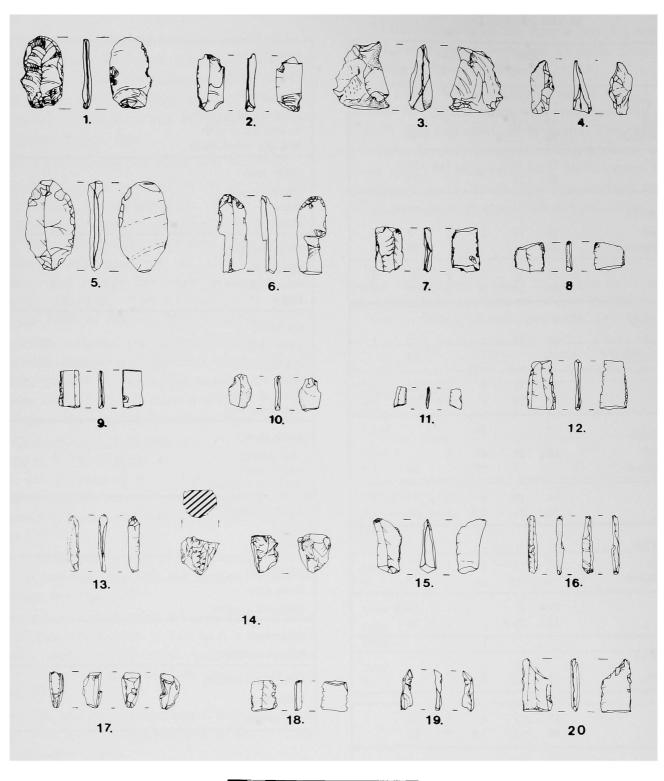
TABLE 56. PEKMEZ TRENCH 2; LEVELS VIIIB-VI ONLY¹⁴⁰ FREQUENCY OF OCCURRENCE OF RAW MATERIAL ACCORDING TO CATALOGUED AND UNCATALOGUED TOOLS AND BLANK PRODUCTS

Flint Obsidian Misc. B.P. Т. B.P. T. B.P. LEVEL VIIIB Catalogued Not catalogued Total LEVEL VIIIA Catalogued Not catalogued **Total** LEVEL VIID Catalogued Not catalogued Total 2.5 2.5 LEVEL VIIC Catalogued Not catalogued Total 9% 6.5 1.5 LEVEL VIIB Catalogued Not catalogued Total 52.5 25.5 9% LEVEL VIIA Catalogued Not catalogued Total 7.5 9.5 LEVEL VII Catalogued Not catalogued Total % LEVEL VI Catalogued Not catalogued Total %

TABLE 57. PEKMEZ TRENCH 2; LEVELS V-IV INCLUSIVE DISTRIBUTION OF CHIPPED STONE TOOLS AND BLANK PRODUCTS ACCORDING TO RAW MATERIALS

LEVELS	V-IVe	IVd, c, b.	IVa
FLINT-CHERT			
Flake tools			
Denticulated scraper		1	
Scraper on a core	1		1
Multiple mixed burin			1
Blade tools			
Double scraper		1	
Spike	,		1
Sickle	6		2
Blank products			
Blade core		1	1
Core fragment	2	2	
Flake			
QUARTZ			
Flake tools			
Angle piercer	1		1
Beak			1
Burin on a break	1		_
Composite tool			1
Blade tools			
Axis piercer		1	
Angle burin	1		
Burin on a notch	1		
Blank products			
Blade		4	
Flake	1		1
OBSIDIAN			
Flake tools			
Burin on a notch			1
			-
Blade tools			
Retouched blade	1		
MISCELLANEOUS			
Flake tools			
End scraper			1

^{140.} Some of the blank products (B.P.) in Pekmez trench 2 were not catalogued while others were. This chart defines the number of catalogued and uncatalogued chipped stone, including blank products and tools for this trench. No other charts of this type are given for the other trenches.



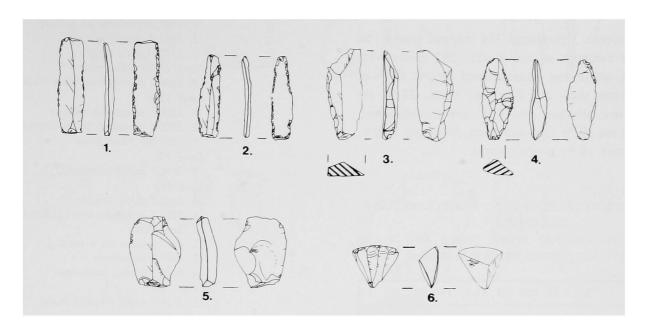
0 100 mm.

- 1. 1597f.5 composite tool
- 2. 1598e1.4 blade fragment
- 3. 1598e3.8 waste flake
- 4. 1598f.5 waste flake
- 5. 1598f.19 sidescraper on a flake
- 6. 1598a.2 blade blank

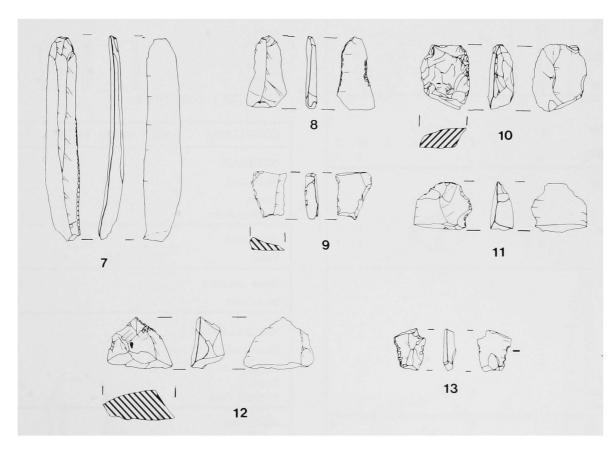
254. Pekmez trench 2; Level VIIIA, LC1: Chipped Stone.

- 7. 1598c.3 sickle fragment
- 8. 1598c.11 retouched blade fragment
- 9. 1598f.30 bladelet fragment
- 10. 1598f.12 notched flake
- 11. 1598a.16 notched blade fragment
- 12. 1598c.14 sickle fragment
- 13. 1598c.1 burin spall
- 14. 1598b.9 pyramidal blade core
- 15. 1598a.50 sickle fragment
- 16. 1598c.6 burin spall
- 17. 1598f.7 bi-polar bladelet core
- 18. 1598e2.2 retouched blade fragment
- 19. 1598c.5 pointed flake
- 20. 1598e3.1 retouched blade fragment

Level VIID



Level VIIC





255. Pekmez trench 2; Levels VIID-VIIC, LC2: Chipped Stone.

- Level VIID
- 1. 1581.4 sickle fragment
- 2. 1581.5 sickle fragment
- 3. 1576.7 backed blade
- 4. 1581.8 sidescraper on a flake
- 5. 1581.7 retouched flake
- 6. 1578a.1 pyramidal core fragment
- Level VIIC
- 7. 1571.1 retouched blade
- 8. 1568.2 notched blade
- 9. 1561.1 retouched blade
- 10. 1563a.100 retouched blade
- 11. 1566.100 notched flake
- 12. 1546a.100 scraper on a flake
- 13. 1566.101 notched flake

Acropolis Trench 3

Acropolis trench 3 produced 358 chipped stones: 66 tools displayed evidence of use marks, 292 pieces were blank products, waste and undetermined pieces. 53 % of the chipped stone tools are flint and chert, 29 % are quartz, 10 % are obsidian and 8 % are miscellaneous. Blank products are 29 % flint and chert, 59 % are quartz, 2 % obsidian and 10 % miscellaneous.

TABLE 58. ACROPOLIS TRENCH 3; COMPLEXES XII-I INCLUSIVE

DISTRIBUTION OF CHIPPED STONE TOOLS AND BLANK PRODUCTS ACCORDING TO RAW MATERIAL

COMPLEXES	XII-X	IX-VIII	VII	VI-V	IV	Ш	II	I
FLINT-CHERT Flake tools								
Denticulated scraper Piercer Retouched flake Notched flake	1				1		2 1 1	
Denticulated flake Scraper Composite tool		<u> </u>			2		_ 1	1
Blade tools								
Notched scraper Sickle Knife element			2	2	1 4	2	10 1	2 1
Blank products								
Flake core Blade core Core fragment Flake Blade	4 2	1	1	2 1	1 6 2 4	1 1	2	1
QUARTZ								
Flake tools End scraper Piercer Beak		1	1		1 2	1	1	
Burin Notched flake Denticulated flake Composite tool	1	2	1			1	1 1 2	
Blade tools End scraper Point(?)					1	1		
Blank products			_				·	
Flake core Blade core	1				1			
Core fragment Flake Blade	10	1 1	3	2	1 5	1	1 6	

256. Pekmez trench 2; Levels VIIB-IVa inclusive, LC3-BA3: Chipped Stone.

Level VIIB

- 1. 1547.100 scraper on a flake
- 2. 1539.4 composite tool
- 3. 1546.1 sickle blade
- 4. 1547.102 flake core
- 5. 1546.2 denticulated blade fragment

Level VIIA

- 6. 1525.1 scraper on a flake
- 7. 1533.6 retouched blade fragment
- 8. 1538.100 waste flake

Level VII

9. 1516.5 sickle fragment

Level IVa:

- 10. 1452.6 sickle fragment
- 11. 1452.7 composite tool; endscraper-denticulated flake
- 12. 1457.2 burin on a notch
- 13. 1463.2 endscraper
- 14. 1512.1 double endscraper

Level IVb:

15. 1524.5 angle dihedral burin

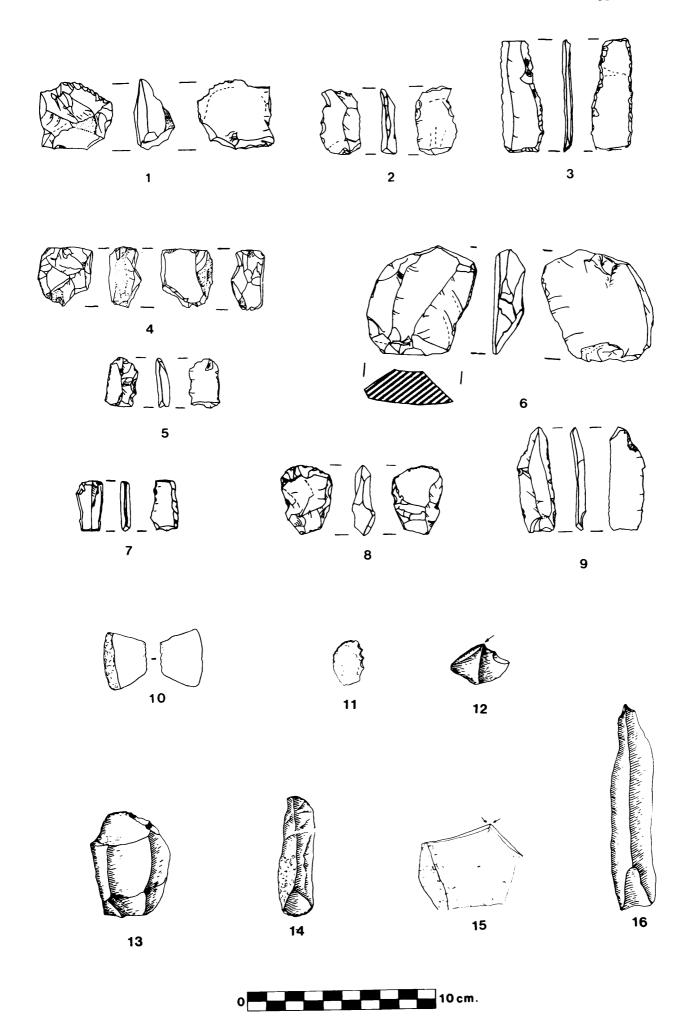
Level V-IVe:

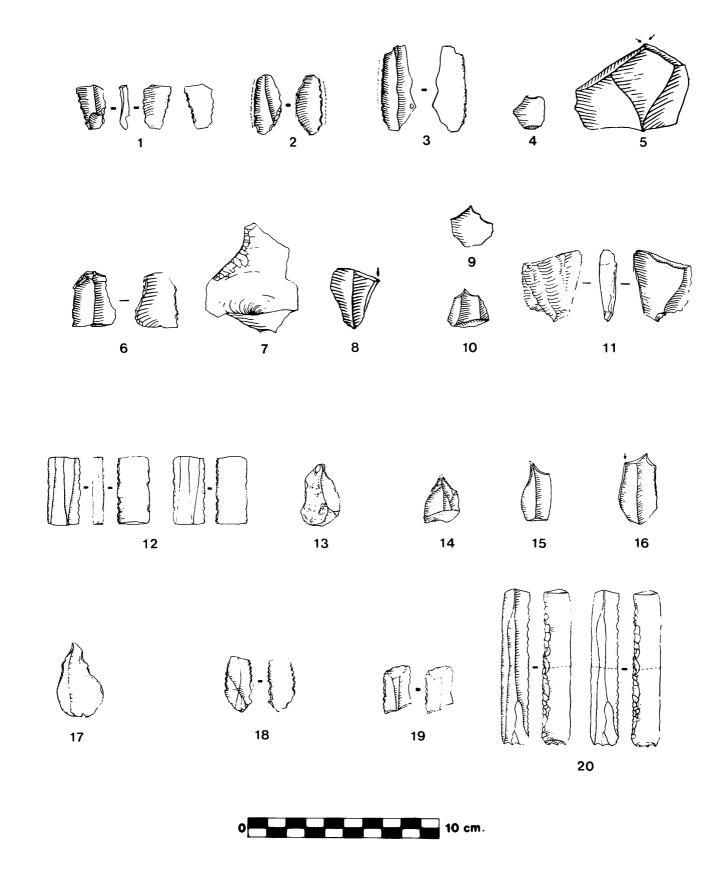
16. 1462.1 axis piercer

TABLE 58: CONTINUED

COMPLEXES	XII-X	IX-VIII	VII	VI-V	IV	III	II	I
OBSIDIAN								
Flake tool								
Piercer								1
Notched flake					1			
Blade tools								
Sickle	3						1	1
Blank products								
Blade core	1						1	
MISCELLANEOUS								
Flake tools								
Piercer	1							
Burin					2			
Notched flake	1							
Blade tools								
Sickle	1							
Use marks		,						
Flake		1						
Blank products								
Flake core							3	
Blade core					2			
Core fragment			1		2		1	
Flake					2	1	1	

_





- 1. 244.2 sickle fragment, Complex II, Room 3
- 2. 246.16 sickle element, Complex II, Room 3
- 3. 242.4 sickle fragment, Complex II, Room 3
- 4. 242.3 angle piercer, Complex II, Room 3
- 5. 242.2 angle dihedral burin, Complex II, Room 3
- 6. 263.2 notched scraper, Complex IV
- 7. 263.9 lateral sidescraper, Complex IV
- 8. 258b.1 burin on a break, Complex IV

- 257. Acropolis trench 3: Chipped Stone.
- 9. 263.3 axis piercer, Complex 4
- 10. 263.5 axis piercer, Complex IV
- 11. 263.6 composite tool: beak-flat-faced burin, Complex IV
- 12. 218.3 sickle fragment, Complex I
- 13. 227.1 composite tool: beak-denticulated-retouched flake, Complex II, Room I
- 14. 225.3 axis piercer, Complex II, Room 2
- 15. 231.8 angle piercer, Complex II, Room 2
- 225.5 composite tool: angle piercer-burin on a notch-denticulated flake, Complex II, Room 2
- 17. 231.11 composite tool: beak-denticulated flake, Complex II, Room 2
- 18. 220.2 sickle fragment, Complex II, Room 2
- 19. 223.5 sickle fragment, Complex II, Room 2
- 20. 231.9 sickle fragment, Complex II, Room 2

TABLE 59. ACROPOLIS TRENCH 3; COMPLEXES XII-I INCLUSIVE
FREQUENCY OF OCCURRENCE OF RAW MATERIAL ACCORDING TO TOOLS, BLANK PRODUCTS AND DEBITAGE

	Fli	nt	Qua	artz	Obsid	lian	Mis	c.
	B.P.	Т.	B.P.	Т.	B.P.	T.	B.P.	Τ.
COMPLEXES X	KII-X							
Tools Waste	6 7	1	11 24	1	1 1	3	5	3
Total %	13 20.6	1 1.6	35 55.6	1 1.6	2 3.2	3 4.8	5 7.9	3 4.7
COMPLEXES I	X-VIII							
Tools Use marks	1		2	3				1
Waste	5		25					
Total %	6 16.2		27 73	3 8.1				1 2.7
COMPLEX VII								
Tools Waste	1	2	3	2			1	
Lump	1		11 1					
Total %	2 9.9	2 9.9	15 68	2 9.9			1 4.5	
COMPLEXES V	/I-V							
Tools	3	2	3				•	
Waste Lump	3		3 2		1		1	
Total %	6 33	2 11	8 44		1 5.5		1 5.5	
COMPLEX IV								
Tools Waste Undetermined	13 15	8	7 21 25	5	1	1	6	2
Total %	28 25.5	8 7.3	53 48.2	5 4.5	1 0.9	1 0.9	12 10	2 1.8
COMPLEX III								
Tools Waste	2 2	2	2 5	2			1	
Total %	4 25	2 12.5	7 43.7	2 12.5			1 6.3	
COMPLEX II						_		
Tools Waste Undetermined	3 21	16	7 18 7	6	1	1	5 6	
Total	24 26.8	16 17.6	32 35	6 6.6	1	1	11 12	
COMPLEX I Tools Waste	2	4	2			2		
Total	2 20	4 40	2 20			2 20		

Acropolis Trench 4

Acropolis trench 4 contained 653 chipped stones: 126 are tools, five other pieces have use marks, 522 pieces consist of blank products and waste. The percentages of raw materials used for tools is 35 % flint and chert, 56 % quartz, 6 % obsidian, and 3 % miscellaneous. Blank products and waste are composed of 26 % flint and chert, 71 % quartz, 1 % obsidian and 2 % miscellaneous.

TABLE 60. ACROPOLIS TRENCH 4; COMPLEXES IV-I INCLUSIVE

DISTRIBUTION OF CHIPPED STONE TOOLS AND BLANK PRODUCTS ACCORDING TO RAW MATERIAL

COMPLEXES	IV	III	II	Sub-I	I	Post-I	Mixed
FLINT-CHERT							
Flake tools							
Scraper	2		1				
Double piercer						1	
Notched flake				1		1	1
Composite tool							3
Blade tools							
Composite tool	1						
Bifacial piece	1						
Sickle	5	3	10	6	2	1	
Knife	2	1	1				
Use marks							
Flake		1					
Blade				1			
Blank products							
Flake core			2				
Blade core	1	2					
Core fragment	5		4	2			
Flake	6	4	6	1			
Plunging blade				1			

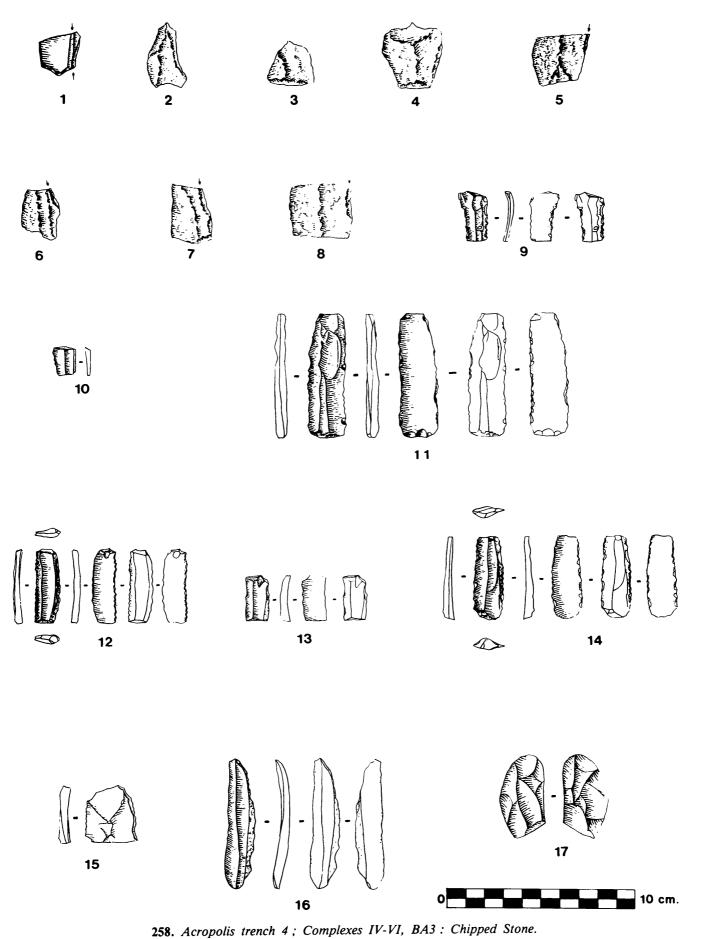
TABLE 60: CONTINUED

COMPLEXES	IV	III	II	Sub-I	I	Post-I	Mixed
QUARTZ							
Flake tools							
Scraper	2	2	1	4	1		
Piercer	4		2	11	2		Ì
Beak		1	1	3	1		
Burin Notched flake	4 2	1 2	1				
Denticulated flake	2	2	1	1			
Composite tool		4	•	2	1		
Blade tools							
Piercer	2			3	1		
Beak				1			
Burin	1						
Retouched blade	1				1		
Denticulated blade				1			
Composite tool					1		
Use marks							
Notched piece Blade		1	1	1			
Diaue			1	1			
Blank products							
Flake core		2	1		1		
Blade core		1	1	1			
Core fragment	4		1		1		
Flake Blade	13 6	8 2	20	11 1	8		
OBSIDIAN							
Flake tools							
Piercer		1					
Blade tools							
Retouched blade		1		1			
Microlith					1		
Sickle		2		1			
Knife					1		
Use marks							
Blade					1	1	
Blank products							
Blade core					1		
MISCELLANEOUS						 	
	•						
Flake tools							
Notched flake Burin	1		1				
Blade tools				.			
Composite tool	1						
Sickle	1		1				
Blank products						-	
Core						2	
Flake						1	
<u> </u>							

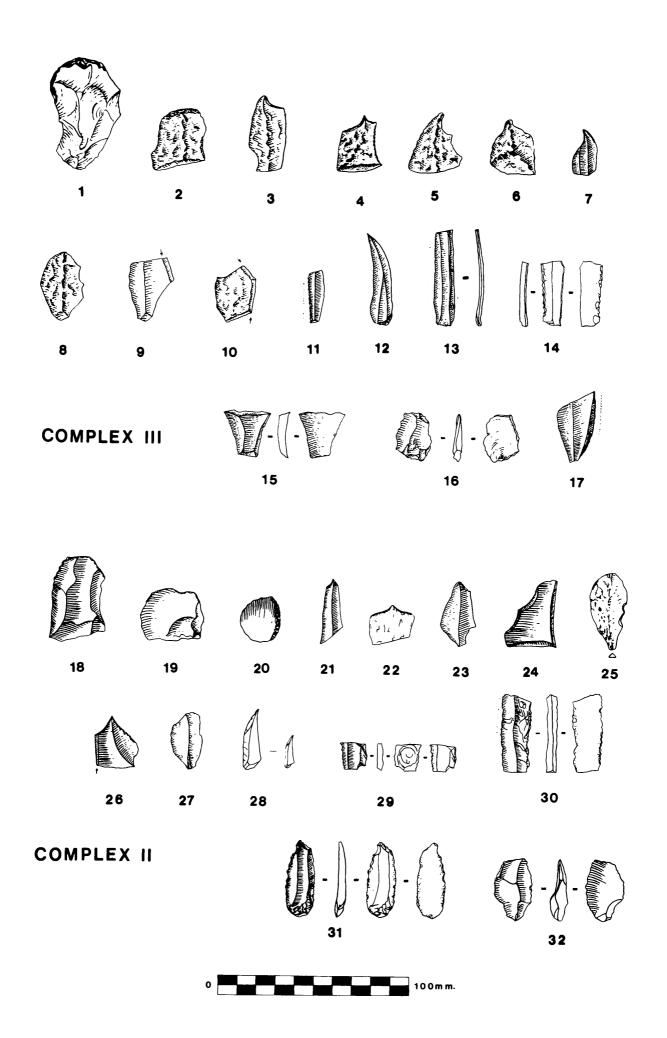
TABLE 61. ACROPOLIS TRENCH 4; COMPLEXES XII-I INCLUSIVE

FREQUENCY OF OCCURRENCE OF RAW MATERIAL ACCORDING TO TOOLS, BLANK PRODUCTS AND DEBITAGE

	Fl	int	Qu	artz	Obsi	dian	Misc.		
	B.P.	т.	B.P.	T.	B.P.	T.	B.P.	T.	
COMPLEXES I	V-VI								
Tools	12	11	21	17		2		3	
Waste Undetermined	21		57 7				3		
Ondetermined									
Total	33	11	85	17		2		3	
970	21.4	7.2	55.3	11		1.3	1.9	1.9	
COMPLEX III									
Tools	6	4	13	10		2			
Use marks		1		1					
Waste Undetermined	12		11 -						
		_							
Total	18	5	27 42.7	11 17.6		2 3.1			
970	28.7	7.9	42./	1/.0		5.1			
COMPLEX II									
Tools	12	13	23	6		1		1	
Use marks Waste	21		26	1					
vv aste	21		-20						
Total	33	13		7		1		1	
070	31.7	12.5	47.1	6.7		1		1	
SUB-COMPLEX	I								
Tools	3	7	13	27		1			
Use marks		1							
Waste Undetermined	24		120 32				3		
Lump			32 1						
	27			27					
Total %	27 11.6	8 3.5	166 71.6	27 11.6		1 0.4	3 1.3		
	11.0	3.3	, 1.0	1110					
COMPLEX I									
Tools	3	2	12	10	1	2	3		
Use marks Waste	24		33		1		3		
Total %	27 28.5	2 2.1	45 47.4	10	2	2	6 6.3		
-70	20.3	<u> </u>	4/.4	10.5	2.1	2.1	0.3		
POST-COMPLE	ΧI								
Tools		3							
Use marks	_					1			
Total		3				1			
⁰ / ₀		75				25			
MIXED									
Tools		4							
Undetermined			2						
Total		4	2						
%		60	40						



- 1. 357.25 composite tool: multiple burin on truncation-retouched blade
- 2. 363.2 axis piercer
- 3. 369.9 angle piercer
- 4. 357.28 heavy piercer
- 5. 351.11 burin on a break
- 6. 359.19 burin on a break
- 7. 369.11 burin on a break 8. 369.10 burin on a break
- 9. 357.30 sickle fragment
- 10. 357.31 sickle fragment
- 11. 351.12 sickle element
- 12. 357.27 sickle fragment
- 13. 369.7 sickle element
- 14. 359.18 sickle fragment
- 15. 369.6 backed blade
- 16. 370.1 sickle element
- 17. 357.26 bifacial piece



Acropolis Trench 5

A total of 225 chipped stone were found in Acropolis trench 5; 101 of these are tools and 124 are blank products. The tools are 61 % flint and chert, 29 % quartz, 8 % obsidian and 2 % miscellaneous. Blank products are 46 % flint and chert, 48 % quartz, 2 % obsidian, and 4 % miscellaneous.

TABLE 62. ACROPOLIS TRENCH 5; COMPLEXES Ic-a INCLUSIVE

DISTRIBUTION OF CHIPPED STONE TOOLS AND BLANK PRODUCTS ACCORDING TO RAW MATERIALS

COMPLEXES	Ic	I	F	Е	D	С	В	B'	Α	Mixed	
FLINT-CHERT											
Flake tools											
	1										
Retouched flake Notched flake						1 2	1	1			
Composite tool						2	1	1			
Knife				1			1				
Blade tools											
Multiple burin				1							
Notched blade			1								
Truncated blaide		1									
Composite tool	_	_				1	_				
Sickle	2	3	2	2	16	14	1				
Knife Saw						2					
Jaw	-										
Use marks											
Blade		1									
Blank products											
Flake core								1			
Blade core		1		1		1			1		
Flake	1	2		1	8	2	2	1		1	
Blade	1					1					

259. Acropolis trench 4; Complexes III-II, BA4: Chipped Stone.

Sione.	
Complex III ·	Complex II:
1. 333.12 endscraper	18. 322.13 notched scraper
2. 347.3 notched scraper	19. 318.10 composite tool
3. 327.4 beak	20. 323.26 overhang scraper
4. 350.12 composite tool	21. 317.12 spike
5. 350.13 composite tool	22. 320.22 axis piercer
6. 339.7 beak	23. 318.6 beak
7. 347.2 angle piercer	24. 320.29 denticulated flake
8. 334.8 denticulated flake	25. 318.9 denticulated scraper
9. <i>326.1</i> burin	26. 318.11 composite tool
10. 333.18 multiple mixed burin	27. 319.7 retouched flake
11. 334.7 sickle fragment	28. 319.8 retouched bladelet
12. 333.16 truncated blade	29. 317.9 sickle fragment
13. 333.19 sickle fragment	30. 320.20 sickle fragment
14. 350.5 sickle fragment	31. 324.4 composite tool
15. 350.14 retouched blade	32. 317.10 utilized blade fragment

fragment 16. 339.8 blade element 17. 325.3 sickle element

COMPLEXES	Ic	I	F	Е	D	С	В	B'	Α	Mixed	
QUARTZ Flake tools Notched scraper Piercer Angle burin Notched flake Composite tool	1	2 1 1			1	4		2		1	
Blade tools Piercer Angle burin Retouched blade Notched blade Sickle Knife		1 1	1	1	1	1 2 1	1	1			
Undetermined Piercer					1						
OBSIDIAN Blade tools Spike Backed bladelet Notched blade Sickle Saw	1	1	1				1 1		1		
Use marks Blade		1									
Blank products Flake				1							
MISCELLANEOUS Flake tools Multiple piercer				1							
Blade tools Truncated blade		1									
Blank products Core fragment Flake					1	1 7					

TABLE 63. ACROPOLIS TRENCH 5; COMPLEXES Ic-a **INCLUSIVE**

FREQUENCY OF OCCURRENCE OF RAW MATERIAL ACCORD-ING TO TOOLS, BLANK PRODUCTS AND DEBITAGE

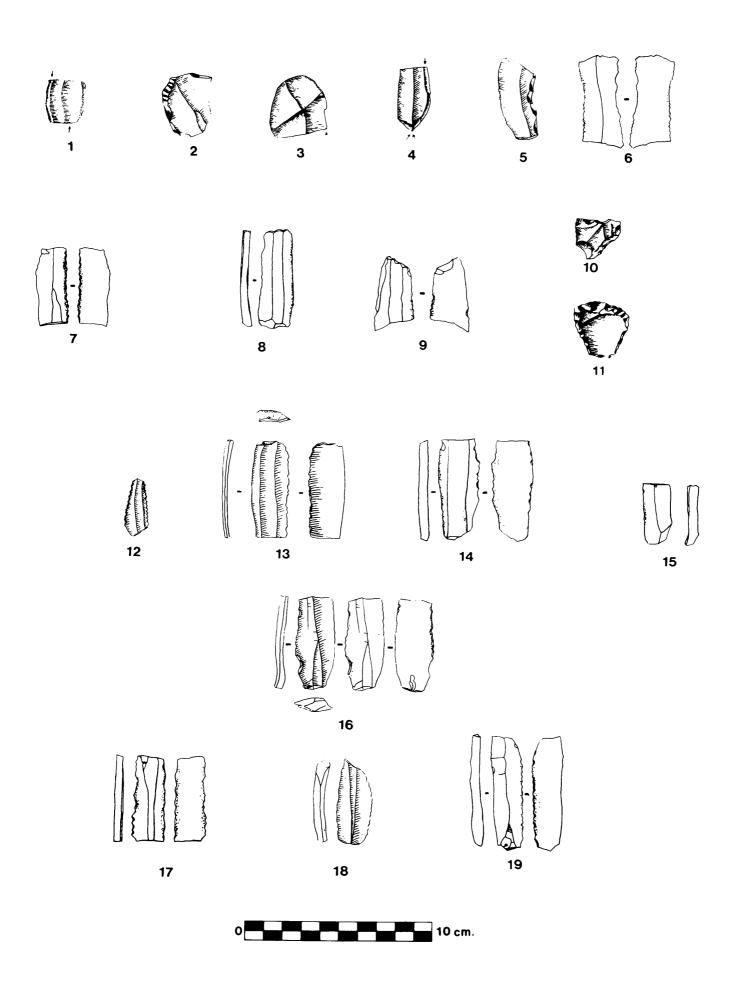
	Fl	int	Qu	artz	Obsi	dian	Mis	sc.
	B.P.	T.	B.P.	T.	B.P.	T.	B.P.	Т.
COMPLEX Ic								
Tools	2	3	1	2		1		
Waste	1		1					
Total	3	3	2	2		1		
%	27	27	18	18		10		
COMPLEX I								
Tools	2	4	4	7	1	1		1
Use marks Waste			4			1	1	
Undetermined			1			1		
Total	2	4	9	7	1	2	2	2
0%	7.4	14.8	33.3		_	7.4	3.7	3.7
COMPLEX F								
Tools		3	2	1		1		
Waste		-	1	_		-		
Total		3	3	1		1		
970		38	38	12		12		
COMPLEX E							-	
Tools	2	6	1	1	1	1		1
Waste Undetermined		3	1		1			
						-		
Total %	2 28	9 33	2 11	1 6	2 10	1 6		1 6
-								
COMPLEX D Tools	0	17	,	_				
Waste	8 7	17	1 1	5			1 1	
Total	15	17						
%	37	41	2 5	5 12			2 5	
COMPLEX						· ,		
COMPLEX C	4	21	1.4	0			•	
Waste	4 12	21	14 7	8			2	
Total	14	21	21	0				
Total %	16 23.6	21 30.9	21 30.9	8 11.7			2 2.9	
								
COMPLEX B Tools	3	4	7	1		2		
Waste	3	7	5			4		
Total	6	4	12	1		2		
%	24	16	48	4		8		
COMPLEX B'								
Tools	3	3	2	5				
Waste	5		1					
Total	8	3	3	5				
%	42	16	16	26				

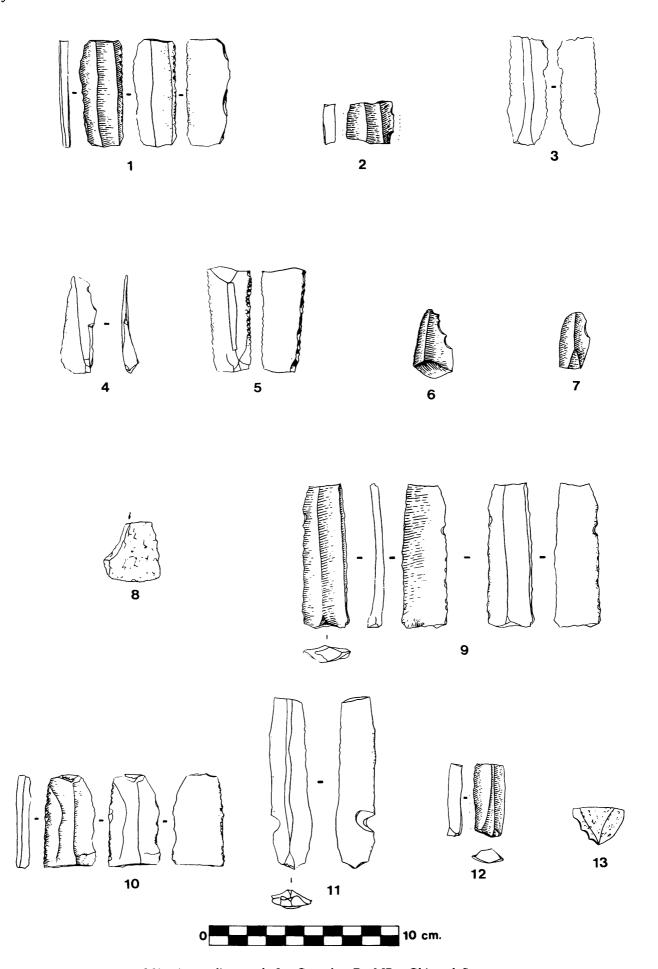
	Fli	nt	Qu	artz	Obsi	dian	Misc.
	B.P.	T.	B.P.	T.	B.P.	T.	B.P. T.
COMPLEX A							
Tools	1					2	
Waste			1				
Total	1		1			2	
970	25		25			50	
MIXED							-
Tools	1			1			
Waste			3				
Total	1		3	1			
%	20		60	20			

260. Acropolis trench 5; Complexes Ib-Ia, D, E, F, BA4-MB:

- Chipped Stone 1. 511.7 prismatic blade core 2. 507.13 backed blade 3. 507.12 composite tool: burin on a break-retouched flake 4. 507.11 multiple mixed burin 5. 507.14 backed blade 6. 507.15 sickle fragment
- 7. 511.6 sickle fragment 8. 516.12 sickle fragment 9. 521.5 sickle fragment 10. 515.6 truncated blade
- 11. 528.6 overhanging scraper 12. 500.16 composite tool: sickle element-axis piercer 13. 496.2 sickle fragment 14. 496.3 sickle fragment 15. 496.4 sickle fragment 16. 496.5 sickle fragment 17. 497.3 sickle fragment 18. 497.4 sickle element

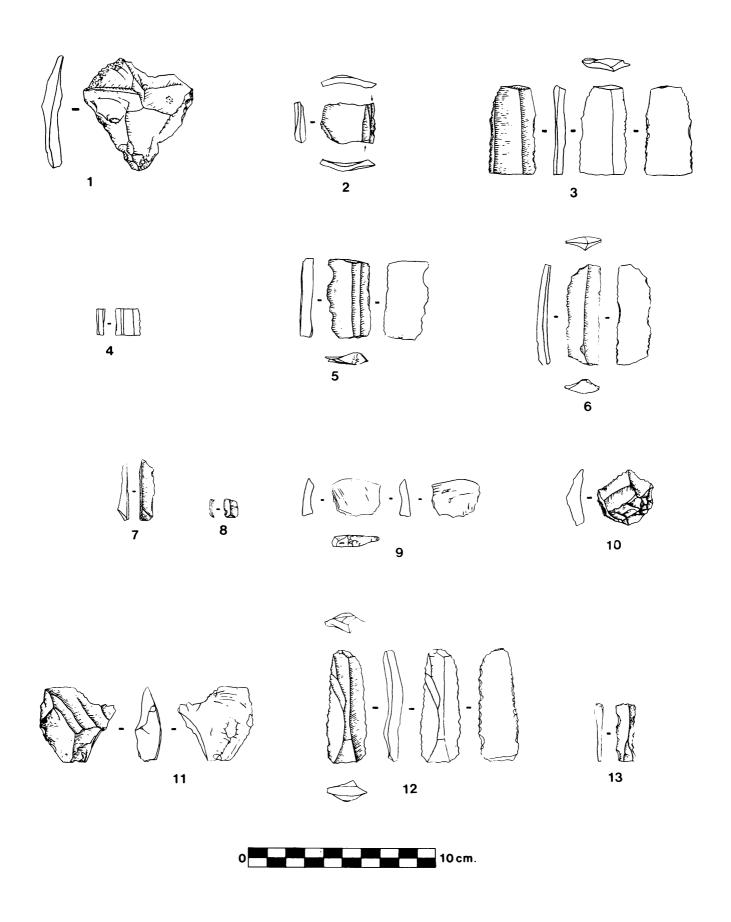
19. 500.20 sickle fragment





- 1. 497.5 sickle fragment
- 2. 500.21 sickle fragment
- 3. 500.22 sickle fragment
- 261. Acropolis trench 5; Complex D, MB: Chipped Stone.
- 5. 500.24 sickle fragment
- 6. 495.1 composite tool: beakdenticulated blade
- 7. 496.6 notched blade
- 8. 500.26 burin on a break
- 9. 486.5 sickle fragment
- 10. 488.2 sickle element 11. 493.12 sickle fragment
- 12. 485.11 sickle fragment 13. 485.16 saw

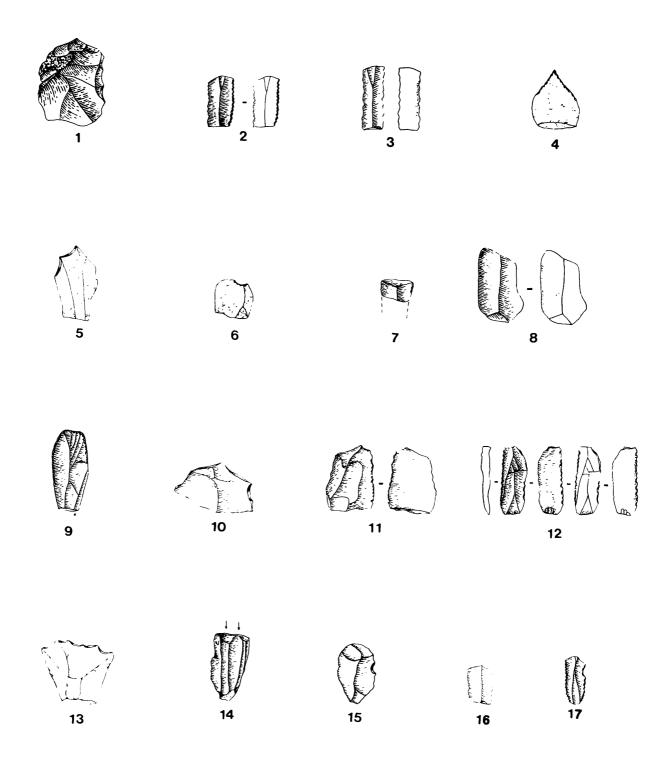
4. 500.23 sickle element



262. Acropolis trench 5; Complexes C-A, MB-Mixed: Chipped Stone.

- 1. 491.7 notched flake
- 2. 485.12 composite tool: double burin-truncated blade
- 3. 485.13 sickle fragment
- 4. 482.2 sickle fragment

- 5. 485.14 sickle element
- 6. 485.15 sickle fragment
- 7. 456.5 sickle fragment
- 8. 459.1 notched blade
- 9. 465.1 backed flake
- 10. 455.27 composite tool: endscraper-spikeretouched and notched flake
- 11. 467.3 notched flake
- 12. 464.4 sickle fragment
- 13. 464.5 sickle fragment





Acropolis Trench 6

Acropolis trench 6 and its extension where Iron Age wares were recovered contained ten chipped stones: of these, eight are tools and two show evidence of use marks. Five chipped stones are of flint and chert, four pieces are quartz and one piece is obsidian. No Frequency Table is included for trench 6 because there were so few chipped stone pieces recovered.

TABLE 64. ACROPOLIS TRENCH 6; LEVELS 3, 4 AND IIID DISTRIBUTION OF CHIPPED STONE TOOLS, AND BLANK PRODUCTS ACCORDING TO RAW MATERIAL.

LEVELS	4	3	IIID
FLINT			
Flake tools			
Retouched flake			2
Blade tools			
Sickle			4
QUARTZ			
Flake tools			
Beak	2		
Use marks			
Prism	1	1	
OBSIDIAN			
Blade tools			
Sickle			1

Acropolis Trench 7

There were 802 chipped stones recovered from Acropolis trench 7. Included in the assemblage are 162 tools and 637 blank products. Tool percentage by raw material is 55 % flint and chert, 18 % quartz, 17 % obsidian and 10 % miscellaneous. Blank product percentage according to raw material is 28 % flint and chert, 62 % quartz, 2 % obsidian and 8 % miscellaneous.

263. Acropolis trench 7; Complexes I-E: Chipped Stone.

Complex I

- 1. 763.14 denticulated scraper
- 2. 727.1 sickle fragment
- 3. 766.21 sickle fragment
- 4. 766.22 axis piercer
- 5. 773.1 double piercer
- 6. 762.16 notched flake
- 7. 773.2 retouched flake
- 8. 781.6 sickle fragment

Complex E

- 9. 736.103 composite tool: endscraper-burin on a break
- 718.21 composite tool: axis piercer-retouched, notched blade fragment
- 11. 718.22 composite tool: axis piercer-notched-retouched flake
- 12. 718.25 sickle element
- 13. 718.28 denticulated scraper
- 14. 718.30 pyramidal blade core
- 15. 723.30 notched flake
- 16. 718.34 sickle fragment
- 17. 723.31 sickle fragment

TABLE 65. ACROPOLIS TRENCH 7; COMPLEXES Ib-a INCLUSIVE
DISTRIBUTION OF CHIPPED STONE TOOLS AND BLANK PRODUCTS ACCORDING TO RAW MATERIAL

COMPLEXES	Ib	Ia	Е	D	С	C'	В	B'	A1	A2	A
FLINT-CHERT							· · ·				
Flake tools											
Scraper Retouched flake Notched flake Denticulated flake Lateral scraper Composite tool		1	2 2 1	2	1		1	1	1		1
Blade tools											
Scraper Retouched blade Notched blade Composite tool Knife Sickle		8	1 3 3	1 1 32	2	2	1 11	3	1		
							- 11				
Tool on thin slab Denticulate				1							
Blank products Flake core Blade core Flake Blade Microburin			3	2 9 7 8 1	1 3		1	1 1 1		1	
Use marks Blades				1				1			
QUARTZ Flake tools Scraper Piercer Beak Burin Notched flake Denticulated flake Composite tool		1	1 1 1	4 1 1		1	2	1	1	3	
Blade tools Piercer Beak Burin		1	2	2	2						
Blank products Blade core Flake Blade	9	3	3 9 1	24	2	2	1 4	2	2		
OBSIDIAN Flake tools											
Piercer Notched flake Denticulated flake Composite tool			1	3 1 1							
Blade tools Retouched blade Truncated blade Composite tool Sickle		2	1 1 1 4	4							

TABLE 65: CONTINUED.

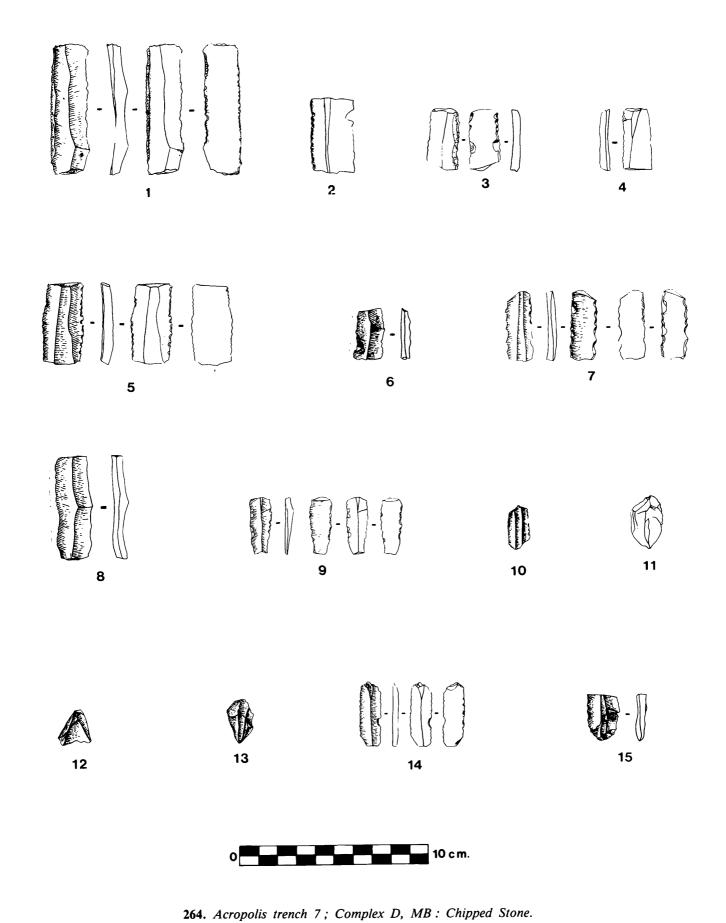
COMPLEXES	Ib	Ia	E	D	С	C'	В	B'	Al	A2	A
Core tools Composite tool				1							
Use marks Flake Core fragment			1	3							
Blank products Blade core Bladelet				1 2	2		1				
MISCELLANEOU Flake tools Scraper Piercer Notched flake Denticulated flake Composite tool Knife				2		1		1 1 1	1		
Blade tools Retouched blade Knife Sickle				1 1			1			1	1
Use marks Blade						1					
Blank products Flake core Blade core Flake	1	1	1	1 2 3		3					

Table 66. Acropolis trench 7; Complexes Ib-a inclusive
Frequency of occurrence of raw material according to tools, blank products and debitage

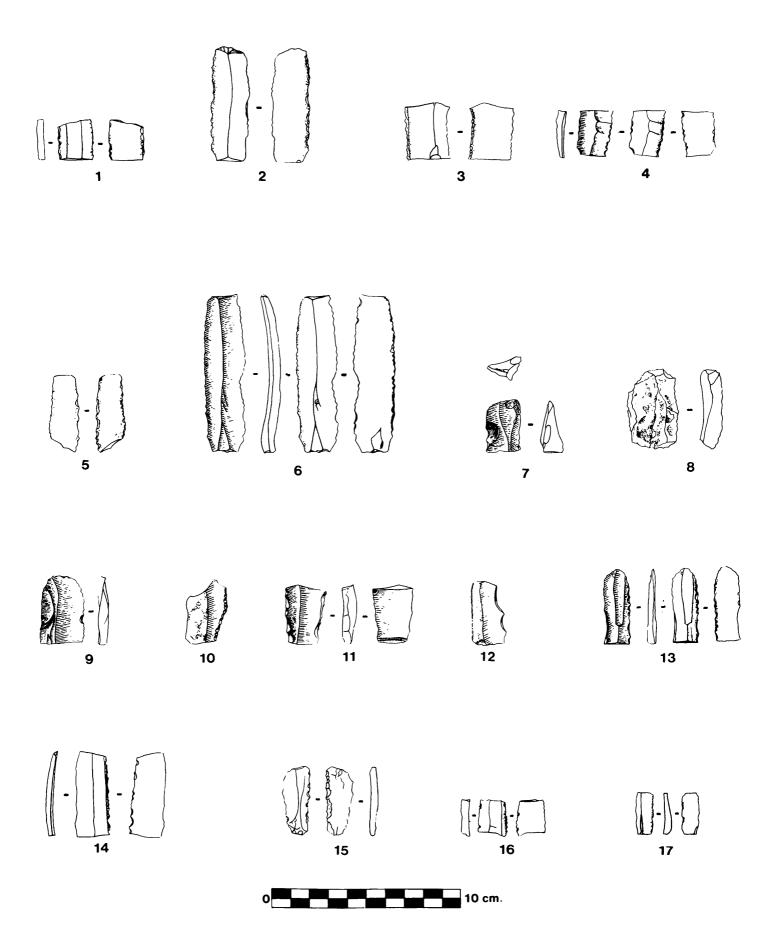
ı	Fli	int	Qua	ırtz	Obsi	idian	M	isc.
	B.P.	T.	B.P.	T.	B.P.	T.	B.P.	T.
COMPLEX	Ib							
Tools	1		9					
Waste	6		14					
Lump							1	
Total	7		23				1	
970	23		74				3	
COMPLEX	Ia							
Tools	6	6	14	3		3	1	
Waste	21		50		2		5	
Total	27	6	64	3	2	3	6	
970	24.3	5.4	57.6	2.7	1.8	2.7	5.4	
COMPLEX	E							
Tools	6	13	13	6	3	7	1	
Use marks		1				1		1
Waste	25		72				4	
Undetermine	ed		3					
Total	31	14	88	6	3	8	5	1
%	20	9	57	3.8	1.5	5	3.2	0.5

TABLE 66: CONTINUED.

	Fl	int	Qua	artz	Obsi	dian	M	isc.
	B.P.	T.	B.P.	т.	B.P.	T.	B.P.	T.
COMPLEX	D							
Tools	27	41	24	9	2	13 3	6	5
Use marks Waste	49	1	6 131		6	3	31	
Total	76	42	161	9	8	16	37	5
%	21.45	11.80	45.4	2.5	2.25	4.5	10.45	1.45
COMPLEX	С							
Tools	4 1	3	2 5	3				
Waste								
Total %	5 28	3 17	7 38	3 17				
	<u> </u>							
COMPLEX Tools	C'	3	2		1			1
Use marks		3			•			1
Waste	2		2	_				
Total	2 17	3 25	4 33		1 8			2 17
						-		17
COMPLEX							_	
Tools Use marks	2	14 1	7	3			3	1
Waste	3		10					
Total	5	15	17	3			3	1
970	11	34	38	7			7	3
COMPLEX	В′							
Tools Waste	4 4	4	3	4				3
Lump	7		1					
Total	8	4	4	4				3
70	36	17	17	17				13
COMPLEX	A2							
Tools	2		_				2	2
Waste	1	·	2					
Total %	3 34		2 22				2 22	2 22
			- <u></u> -					
COMPLEX Tools	AI	2	2			1		1
Waste	5		16			1		•
Total	5	2	18			1		1
970	19	7	66			4		4
COMPLEX	A							
Tools Waste	9	2	4					1
			·					
Total	9 56	2 12.5	4 25					1 6.5
								0.5



- 1. 709.4 sickle element
- 2. 712.12 sickle fragment
- 3. 713.105 sickle fragment
- 4. 713.107 sickle fragment
- 5. 713.106 sickle fragment
- 6. 724.1 sickle fragment
- 7. 717.19 sickle fragment
- 8. 726.1 sickle fragment
- 9. 739.103 sickle fragment
- 10. 682.107 spike
- 11. 682.108 double beak
- 12. 713.110 utilized blade core fragment
- 13. 746.1 retouched blade fragment
- 14. 713.114 composite tool : piercerretouched and notched blade
- 15. 713.115 sickle fragment

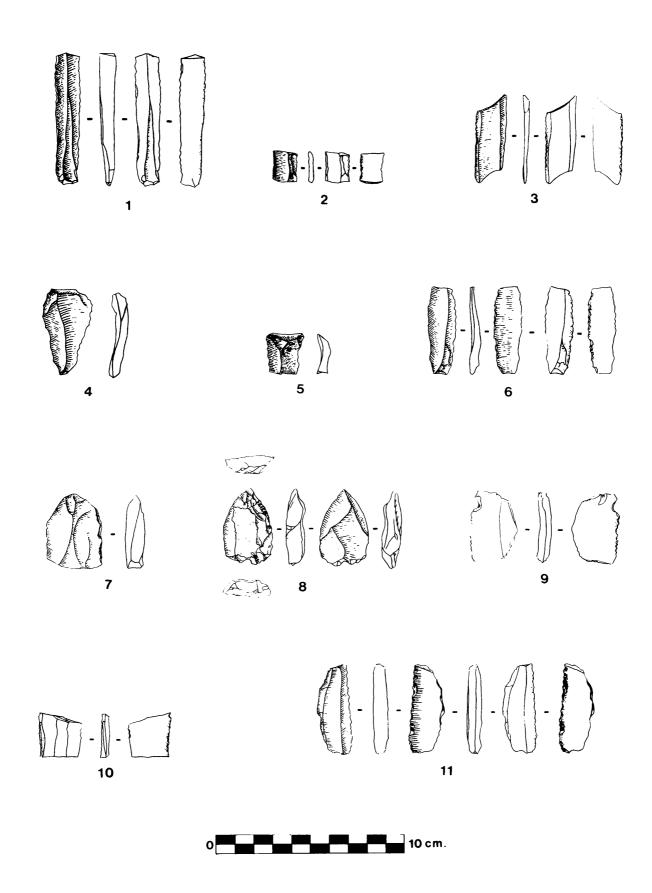


265. Acropolis trench 7; Complexes D and C, MB: Chipped Stone.

- 1. 701.15 sickle fragment
- 2. 702.28 sickle element
- 3. 703.17 sickle fragment
- 4. 703.18 sickle fragment
- 5. 704.5 sickle element
- 6. 704.6 sickle fragment
- 7. 653.6 notched blade, Complex C
- 8. 685.6 endscraper, Complex C
- 9. 705.14 endscraper
- 10. 744.1 backed blade
- 11. 739.101 backed blade
- 12. 713.101 composite tool:

denticulated-retouched blade

- 13. 670.11 sickle element
- 14. 682.106 sickle fragment
- 15. 698.104 sickle element 16. 699.6 sickle fragment
- 17. 700.18 sickle fragment



266. Acropolis trench 7; Complexes C-B'. B, MB-Mixed: Chipped Stone.

- 1. 652.3 sickle fragment
- 2. 715.42 sickle fragment
- 3. 677.10 sickle fragment
- 4. 715.39 backed flake
- 5. 715.40 utilized plunging blade
- 6. 715.43 sickle fragment
 - 7. 651.3 endscraper
- 8. *623.26* sidescraper
- 9. 649.16 sickle element
- 10. 651.2 sickle fragment
- 11. 659.2 sickle element

Acropolis Trench 8

A total of 145 chipped stones have been recovered from Acropolis trench 8. Of these, 61 are tools, four more pieces have use marks, and 84 are blank products. Tool percentage according to raw material is divided into 70 % flint and chert, 20 % quartz, 7 % obsidian and 3 % miscellaneous. Blank product percentages are 62 % flint and chert, 32 % quartz, 2 % obsidian, and 4 % miscellaneous.

Table 67. Acropolis trench 8; Phases I-III INCLUSIVE

DISTRIBUTION OF CHIPPED STONE TOOLS AND BLANK PRODUCTS ACCORDING TO RAW MATERIAL

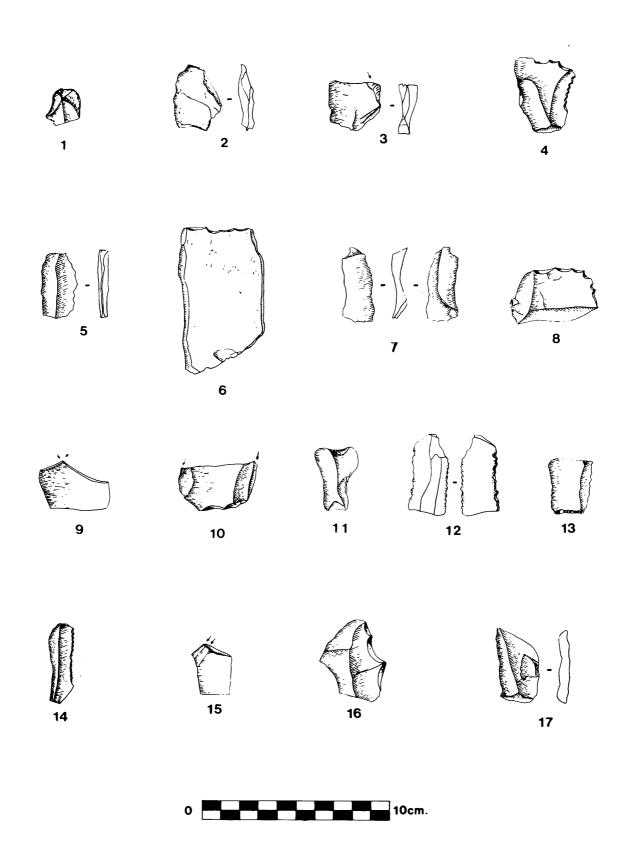
PHASES	III	II	I
FLINT-CHERT			
Flake tools			
Scraper	1		2
Piercer	3		1
Burin	2	2	4
Notched flake Denticulated flake	2	1	2 1
Composite tool	1	2	1
Bifacial piece	1		
Knife		1	
Blade tools			
Notched scraper			1
Burin	3	2	1
Truncated blade		1	
Knife Sickle	2	1	5
Sierie			
Core tools			
Spike			1
Tool on thin slab		,	
Denticulate	1		
Blank products			
Blade core	2	7	3
Flake	2	1	4
Blade		2	4
QUARTZ			
Flake tools			
Carinated scraper	1		
Piercer	1		1
Burin	1		1
Blade tools			
Piercer		1	
Burin on break		1	
Retouched blade Denticulated blade		1	1
Deliticulated blade		-	

PHASES	III	II	I	
Blank products				
Flake			3	
Blade	1	1	1	
Use marks				
Prism		2	1	
OBSIDIAN				
Blade tools				
Piercer	1			
Sickle		1	1	
Blank products				
Bladelet			1	
Use marks				
Core fragment			1	
MISCELLANEOUS				
Flake tools				
Lateral scraper	1			
Blade tools				
Burin	1			
Blank products				
Blade core			1	

TABLE 68. ACROPOLIS TRENCH 8; PHASES I-III INCLUSIVE

FREQUENCY OF OCCURRENCE OF RAW MATERIAL ACCORDING TO TOOLS, BLANK PRODUCTS AND DEBITAGE

	Fli	nt	Qua	rtz	Obsi	dian	Mi	sc.
	B.P.	T.	B.P.	T.	B.P.	T.	B.P.	Т
PHASE III								
Tools	4	14	1	3		1		2
Waste	8		1					
Total	12	14	2	3		1		2
%	35	41	6	9		3		6
PHASE II								
Tools	10	10	1	3		1		
Use marks				2				
Waste			8					
Total	10	10	9	5		1		
0%	29	29	26	13		3		
PHASE I								
Tools	11	19	4	3	1	1	1	
Use marks				1		1		
Waste	19		12		1		2	
Total	30	19	16	4	2	2	3	
970	40	25	22	5	2	2	4	



267. Acropolis trench 8; LB: Chipped Stone.

- 1. 2182A.16 notched scraper
- 2. 2190.2 double piercer
- 3. 2182A.17 burin on a break
- 4. 2207.1 composite tool : denticulated-retouched flake
- 5. 2201.12 utilized blade
- 6. 2193B.3 denticulated piece (thin slab)
- 7. 2197.1 sickle fragment
- 8. 2041.1 denticulated scraper
- 9. 2089.10 dihedral burin
- 10. 2003.2 double burin on a break
- 11. 2002.1 notched flake
- 12. 2015.1 sickle fragment
- 13. 2038.1 sickle fragment
- 14. 2099.4 sickle fragment
- 15. 2124A.1 flat-faced burin
- 16. 2167.8 composite tool: denticulated-notched flake
- 17. 2160.15 utilized blade fragment

TABLE 69. ACROPOLIS TRENCH 9; PHASES I AND II **COMBINED**

DISTRIBUTION OF CHIPPED STONE TOOLS AND BLANK PRODUCTS ACCORDING TO RAW MATERIAL

FLINT-CHERT							
Flake tools	-	Blade tools					
Scraper	12	Burin	3				
Piercer	2	Retouched blade	3				
Burin	2	Notched blade	2				
Notched flake	7	Composite tool	3				
Composite tool	2	Sickle	7				
Retouched flake	1		·				
Knife	2						
Sickle	1						
Slab tools		Blank products					
Burin	2	Core flake	1				
Sickle	1	Blade core	30				
Sickic	•	Slab	1				
		Flake	15				
		Blade	3				
	OUA	ARTZ					
	QUA						
Flake tools		Blade tools					
Scraper	1	Scraper	2				
Notched flake	1	Burin	3				
Composite tool	1	Notched blade	1				
		Sickle	1				
		Blank products					
		Blade core	6				
		Flake	8				
		Blade	2				
	OBSI	DIAN					
Flake tools		Blade tools					
Denticulated scraper	1	Retouched blade	2				
<u>.</u>		Notched blade	1				
		Sickle	1				
Use marks		Blank products					
Blade	3	Bladelet	1				
N	MISCELL	ANEOUS					
Flake tools		Blade tools					
End scraper	1	Sickle	1				
Denticulated scraper	1	DICKIC	1				
Composite tool	1						
Use marks							
Blade	1						

Acropolis Trench 9

A total of 273 pieces have been recovered from Acropolis trench 9. Seventy-six of these are tools and four additional pieces have use marks. There are 197 blank products. The percentage of tools according to raw material is divided into 68 % flint and chert, 13 % quartz, 11 % obsidian, and 8 % miscellaneous. The raw materials of the blank products are 66 % flint and chert, 27 % quartz, 2 % obsidian, and 5 % miscellaneous.

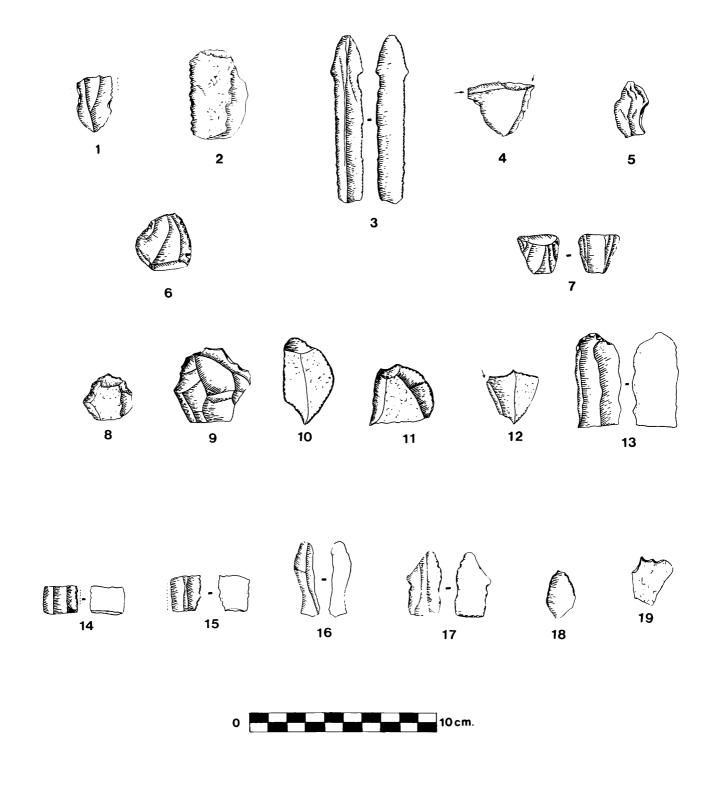
TABLE 70. ACROPOLIS TRENCH 9; PHASES I AND II FREQUENCY OF OCCURRENCE OF RAW MATERIAL ACCORD-ING TO TOOLS, BLANK PRODUCTS AND DEBITAGE

	Fli	nt	Qua	artz	Obsid	lian	Mis	sc.
	B.P.	T.	B.P.	T.	B.P.	T.	B.P.	T.
Tools Use marks	50	52	16	10	2	5	5	5
Waste	81		37		2		4	
Total	131	52	53	10	4	8	9	6
970	48	19	19	5	1	3	3	2

268. Acropolis trench 9; IA: Chipped Stone.

- 1. 3000.4 denticulated scraper
- 2. 3007.2 denticulated scraper
- 3. 3008.1 overhanging scraper
- 4. 3012.3 subcircular scraper
- 5. 3088B.3 carinated scraper
- 6. 3090A.11 carinated scraper
- 7. 3007.1 angle piercer
- 8. 3025.1 multiple mixed burin
- 9. 3113.1 burin on a break
- 10. 3196.4 dihedral burin
- 11. 3201B.21 dihedral burin
- 12. 3041.1 notched flake
- 13. 3068A.8 composite tool: multiple burin-denticulated blade fragment
- 14. 3136.2 composite tool: dihedral burinretouched blade
- 15. 3202.6 composite tool : circular scraper-angle piercer
- 16. 3090B.1 retouched flake
- 17. 3113.2 tanged, retouched blade fragment
- 18. 3179A.12 utilized flake
- 19. 3194A.B backed blade
- 20. 3187A.1 composite tool: burin on a break-
- 21. 3201A.14 sickle fragment
- 22. 3201B.1 sickle element
- 23. 3149A.B utilized blade core fragment
- 24. 3201A.B composite tool: beak-piercer
- 25. 3207.1 sickle fragment





269. Kuşkalesi trenches 1 and 2: Chipped Stone.

Kuşkalesi trench 1

- 1. 66.243 sickle fragment
- 2. 66.443 sickle element
- 3. 66.326 retouched blade
- 4. 66.439 multiple mixed burin
- 5. 66.448 notched flake
- 6. 66.438 composite tool: burin on a breakscraper
- 7. 66.449 prismatic blade core

Kuşkalesi trench 2

- 8. 7.18 denticulated scraper
- 9. 7.19 denticulated scraper
- 10. 7.20 composite tool: shouldered scraperretouched flake-beak
- 11. 7.21 composite tool: carinated scrapernotched flake
- 12. 7.22 composite tool: burin on a notchmultiple piercer
- 13. 7.23 composite tool: endscraper-sickle
- 14. 7.24 sickle fragment
- 15. 7.25 sickle fragment
- 16. 7.28 sickle fragment
- 17. 7.30 retouched blade
- 18. 7.33 spike
- 19. 7.34 angle piercer

Kuşkalesi Trench 1

Kuşkalesi trench 1 has a total of 30 chipped stone pieces. Of these 18 are tools and 12 are blank products. The tools are divided into 62 % flint and chert, 16 % quartz and 22 % obsidian. Blank product raw materials include 42 % flint and chert, 42 % quartz and 16 % obsidian.

TABLE 71. KUŞKALESİ TRENCH 1 ; LEVELS 10-2
INCLUSIVE 141
DISTRIBUTION OF CHIPPED STONE TOOLS AND BLANK
PRODUCTS ACCORDING TO RAW MATERIAL

LEVELS	10-9	7	5	2
FLINT-CHERT				
Flake tools				
Multiple burin	1			
Notched flake Composite tool	1 1			1
Knife	1			1
Blade tools				
Scraper	1			
Retouched blade			1	
Sickle		2	1	
Blank products				
Flake			1	
QUARTZ				
Flake tools				
Notched flake	1			
Blade tools				
Burin	1	1		
Blank products				
Flake core		1		
Flake	1	1		
OBSIDIAN				
Blade tools				
Sickle	1			3
			<u></u>	
Blank products				
Blade core	1			
Blade			1	

^{141.} This chipped stone study was completed before the final draft of the Kuşkalesi trenches was finished. The reader should note that Levels 5 and 2 are not prehistoric, but are mixed deposits. For completeness, Mme Léon Leurquin has enclosed their statistics here.

TABLE 72. Kuşkalesi trench 1; Levels 10-2 inclusive Frequency of occurrence of raw material according to tools, blank products and debitage

	Fli	nt	Qua	artz	Obsi	dian
LEVELS 9-10	B.P.	T.	B.P.			
Tools		5	1	2	1	1
Waste	2					
Total	2	5	1	2	1	1
970	17	42	8	17	8	8
LEVEL 7						
Tools		2	2	1		
Lump			1			
Waste	2		1			
Total	2	2	4	1		
07/0	22	22	45	11		
LEVEL 5						
Tools	1	2			1	
Total	1	2			1	
970	25	50			25	
LEVEL 2						
Tools		2				3
Total		2				3
070		40				60

Kuşkalesi Trench 2

From Kuşkalesi trench 2, a total of 296 chipped stone pieces were excavated. Of these 48 are tools and 248 are blank products. The percentage of tools according to raw material is 50 % flint and chert, 48 % quartz and 2 % miscellaneous. Blank products are comprised of 17 % flint and chert, 82 % quartz and 1 % miscellaneous. No obsidian was found in this trench.

TABLE 73. KUŞKALESİ TRENCH 2; LEVELS 10-6
DISTRIBUTION OF CHIPPED STONE TOOLS AND BLANK
PRODUCTS ACCORDING TO RAW MATERIAL

LEVELS	10	9	8	7	6
FLINT-CHERT					
Flake tools					
Scraper				2	
Piercer			1		1
Notched flake					1
Composite tool				2	
Knife					1
Sickle					1

TABLE 73: CONTINUED

LEVELS	10	9	8	7	6
Blade tools					
Notched scraper					1
Retouched blade Composite tool				1 2	
Sickle				7	3
Slab tools					
Spike			= =		1
Blank products					
Blade core				1	1
QUARTZ					
Flake tools					
Notched scraper			1		
Piercer				5	
Beak Burin			1	1	
Retouched flake				1	
Notched flake				1	
Denticulated flake Flake				1	
Composite tool			1	1	1
Blade tools				=	
Burin on break				1	
Retouched blade				8	
Notched blade	1				-
Blank products					
Blade core	1	1	3		1
Flake Blade		1	5		1
MISCELLANEOUS					
Flake tools					
Composite tool					1

TABLE 74. KUŞKALESİ TRENCH 2; LEVELS 10-6 INCL. FREQUENCY OF OCCURRENCE OF RAW MATERIAL ACCORDING TO TOOLS, BLANK PRODUCTS AND DEBITAGE

	Fli	nt	Qua	artz	Misc.	
	B.P.	T.	B.P.	T.	B.P.	T.
LEVEL 10						
Tools			2			
Waste			1			
Total			3	1		
%			75	25		
LEVEL 9						
Tools			2			
Waste			1			
Total			3			
70			100			

TABLE 74: CONTINUED

	Fli	Flint			Misc.		
	B.P.						
LEVEL 8							
Tools	2	1	10	3			
Waste	3						
Lump			1				
Total	5	1	11	3		-	
%	25	5	55	15			
LEVEL 7							
Tools	1	14	29	17			
Waste	20		115				
Total	21	14	144	17	-		
%	11	7	73	9			
LEVEL 6							
Tools	1	9	8	2		1	
Waste	15		34		3		
Total	16	9	42	2	3	1	
970	22	12	57	3	4	2	

THE LITHIC INDUSTRY

Nuclei

Few nuclei are recovered from the Late Chalcolithic levels from Pekmez trench 2. Those that were found (including two obsidian blade cores and a few flake cores) were knapped by direct percussion.

The majority of Bronze Age 2 nuclei are pyramidal and prismatic blade cores with one or two striking platforms (percussion debitage). Pressure and percussion debitage is recognized only on one exhausted obsidian pyramidal blade core. Ground stones may have served as hammers — the evidence suggests that these were the tools used for knapping.

Bronze Age 3 nuclei are characterized by globular flake cores, plus pyramidal and prismatic blade cores with one or two striking platforms. These are flaked by percussion. Only one flint nucleus, an exhausted blade core, demonstrates both pressure and percussion debitage.

Bronze Age 4 Middle Bronze nuclei are represented by globular flake and prismatic blade cores with two striking platforms. Of particular interest are three big resenite nuclei with scars of large removals. Similar types of nuclei are present in the Late Bronze and Iron Age deposits of Acropolis trenches 8 and 9. The chipped stone industry recovered from these two trenches strongly indicates that they were disturbed deposits.

Debitage

The table of frequency presents the divisions of flakes, blades and waste for each trench. The majority of flakes range from 20 to 40 mm in length and width respectively. The frequency of blade blanks is not as representative as are flakes. Unfortunately, the unit excavation method did not allow the excavators to recognize the location of possible workshops — because the units were either so small or so awkwardly placed that possible activity areas were fragmented, or overlooked. Excavation of such areas must be undertaken delicately, with small tools. This does not seem to have been the standard procedure of work at prehistoric Aphrodisias.

Lithic Tool Kit

Tools have been classified into 12 traditional groupings according to their morphological, technical and functional characteristics. Different types of blank groups I-XII include: I endscrapers; II piercers; III burins; IV notched and denticulated pieces; V-retouched tools; VI scrapers/racloirs; VII truncated tools; VIII composite tools; IX bifacial tools; X knives; XI arrowheads; and XII sickles. For the following discussion, we are using the aforementioned Roman numerals, succeeded by the subclass in Arabic numerals, and then small alphabetic designations as: (a) = flake; (b) = blade; (c) = bladelet; (e) = nucleus.

Group I Endscrapers

The standard length and width for this tool group is between 20 and 40 mm. The exception is a single endscraper from Acropolis trench 4 of Bronze Age 4, cat. no. 333.12 (Figure 259.1). Eleven types of endscrapers are listed below:

- 1. Single endscraper: this is a tool with its short edge retouched to a more or less circular shape; one or two of its other edges can also bear the same type of retouch
- 2. Single endscraper on a retouched flake or blade: the edge retouch is different from the retouch on its short edge.
- 3. Carinated scraper: the shape of this implement resembles the hull of a ship.
- 4. Denticulated scraper: a series of contiguous notches create the front.
- 5. Circular scraper: a circular or semicircular shape with retouch present on all or almost all edges.
- 6. Notched scraper: one or two edges are notched.
- 7. Overhanging scraper: the front overhangs the remainager of the implement.
- 8. Thumb nail scraper: small end scraper in the shape of a thumb nail.

- 9. Shouldered scraper: the front of this tool is shaped like a shoulder.
- 10. Scraper on a core.
- 11. Double end scrapers: these have two fronts.

Endscrapers represent only 2.9 % of the retouched pieces for the Pekmez trench 2 Late Chalcolithic and Bronze Age 1 levels. Type I.2(b), cat. no. 1599b.39 (Figure 253.5) of Level VIIIB is a blade with one denticulated edge; type I.1(a), cat. no. 1547.100 (Figure 256.1, 395.5) is found in Level VIIB; and type I.4(a), cat. no. 1497.101 (Figure 404.2) is found in Level VI.

From the Bronze Age 2 levels, three endscrapers have been recovered. Type I.6(a), cat. no. 8.2 is found in Kuşkalesi trench 2; it has a circular front with signs of small removals and a unilateral inverse clactonian notch. Type I.9(a), cat. no. 66.356 from Kuşkalesi trench 1 is a fragmented piece. Type I.10 (?), cat. no. 1566c.100 (Figure 391.10), from Pekmez trench 2 is a very crude piece.

Four types of endscrapers have come to light in the Bronze Age 3 pottery levels:

- 1) Type I.1(a) has small lamellar removals, cat. no. 367.1.
- 2) Type I.4(a), cat. no. 367.2 found in Acropolis trench 4, has a carinated and semicircular shape.
- 3) Type I.6(b), cat. no. 263.2 (Figure 257.6) found in Acropolis trench 3 exhibits semi-abrupt retouch on the front and asymmetric use retouch notches on both edges.
- 4) Type I.11(b), cat. no. 1512.1 (Figure 256.14) from Pekmez trench 2 is a unique endscraper in this collection for it has both distal and proximal fronts that exhibit small removals.

Four types of endscrapers have been encountered in the Bronze Age 4 levels:

- 1) Type I.1(a), cat. no. 1463.2 (Figure 256.13); I(b), cat. no. 705.14 (Figure 265.9). These were found in Pekmez trench 2 and in Acropolis trenches 3, 4 and 7. They exhibit small removals and retouch on the front and one or two of their edges are either partially or entirely retouched.
- 2) Type I.3(a), cat. no. 718.19 from Acropolis trench 7 has retouched edges.
- 3) Type I.4(a), cat. no. 318.9 (Figure 259.25). One was recovered from Acropolis 4; another from Kuşkalesi trench 2 (Figure 269.8) which is retouched on both its edges and notches.
- 4) Type I.7(a), cat. no. 528.6 (Figure 260.11), a veined flint implement from Acropolis trench 5 contrasts sharply with the remaining endscrapers. Its material suggests that it is an import.

In the Middle Bronze deposits, only one endscraper, type I.1(a), Cat. no. 685.6 (Figure 265.8) was recovered from Acropolis trench 7; both its front and edges have

small removals. In Acropolis trench 8 in the Late Bronze Age levels, three types of endscrapers were found: carinated, denticulated and notched. These represent 9 % of the retouched pieces. Finally, in Acropolis trench 9, levels ascribed to the Iron Age, 16 endscrapers were catalogued. With the exception of a single endscraper, cat. no. 3192, they have all been manufactured using flake blanks (types I.1, I.3, I.4 and I.5 respectively, and circular and semicircular scrapers I.6). These endscrapers alone account for 22 % of the retouched pieces.

Group II Piercers

Piercers or awls are implements characterized by having narrow elongated points that have been obtained by notches and retouch. They are generally flakes of very small dimensions. Their standard lengths range between 20 and 40 mm.

- 1. Spike
- 2. Beak
- 3. Single piercer
- 4. Heavy piercer
- 5. Double piercer
- 6. Multiple piercer

Three axis piercers on flakes were recovered in the Late Chalcolithic levels of Pekmez trench 2 (LC1, LC3 and LC4). 142 The points of these tools were obtained either by notch or retouch, type II.3(a). In the Bronze Age 2 deposits, axis and angle piercers, type II.3(a), are present in Acropolis trench 3; their points were obtained by notch or inverse retouch. One spike on a blade fragment, type II.1(b), is from Pekmez trench 2. Beaks formed by a notch, type II.2(a), are present in both Kuşkalesi trenches and Acropolis trench 6. Also from Kuşkalesi trench 2 is one heavy piercer on a thick flake, type II.4(a). Most of the piercers found in Bronze Age 3 levels, (Kuşkalesi trench 2, Pekmez trench 2, Acropolis trench 3) are axis and angle piercers, type II.3(b); The points of these tools are obtained by notch or retouch. One heavy piercer, type II.4(a) was unearthed in Acropolis trench 4.143

In the Bronze Age 4 levels, 16 axis and angle piercers have been recovered from Pekmez trench 2 and Acropolis trenches 3 and 4. The points of these implements are obtained by either notch or retouch. Axis and spikes, type II.1(a), 144 angle piercers are also present in the Bronze Age 4 Middle Bronze levels of the Acropolis trenches.

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142. Cat. no. 1599c.101 (Figure 378.14);
Cat. no. 1563.103 (Figure 395.16).

143. Cat. no. 357.28 (Figure 258.4).

144. Cat. no. 225.3 (Figure 257.14);
Cat. no. 231.8 (Figure 257.15);
Cat. no. 320.22 (Figure 259.22);
Cat. no. 242.3 (Figure 257.4);
Cat. no. 347.2 (Figure 259.7).
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Three others tools are double piercers, one of these is a double spike, type II.5(a), and the other are multiple piercers, type II.6(a). Piercers represent 15 % of the retouched tools of the Late Bronze Age deposits in Acropolis trench 8, and 3 % of the Iron Age deposits of Acropolis trench 9. In these assemblages are spikes on flakes, thin slabs, axis and angle piercers.

Group III Burins

Most burins are made on flakes, but burins on a break are generally manufactured on blade fragments. The length of these tools usually ranges between 20 and 40 mm. This group has seven subdivisions:

- 1. Dihedral burin
- 2. Burin on a break
- 3. Burin on a truncation
- 4. Burin on a notch
- 5. Flat faceted burin
- 6. Multiple burin
- 7. Multiple mixed burin

Only two burins on a break were recovered in the mixed deposits of the Bronze Age 4 Middle Bronze Age of Acropolis trenches 5 and 7. These are small pieces that are 20 mm or less in length. It is curious that 25 % of the burin class is represented in Acropolis trench 8 — this is the highest percentage of all the retouched pieces and all types are well represented. In Acropolis trench 9, deposits of all types are found with the exception of the burin on a notch. They represent the fourth highest percentage, 12.5 %, when combined with the composite tools. One piece of particular interest, cat. no. 3201B.21 (Figure 268.11), is a dihedral burin on a thin slab. It is found in Acropolis trench 9 and ascribed to Phase II.

Group IV Notched and Denticulated Tools

Notched and denticulated implements are manufactured on flake, blade and bladelets. One implement, *cat.* no. 2193B.3 (Figure 267.6) was manufactured on a thin slab. These tools can be subdivided into two main groups:

- 1. Notched pieces manufactured on a flake, blade or bladelet.
- 2. Denticulated pieces made on a flake, blade or thin slab (these are implements with a minimum of two contiguous notches breaking into one of the edges).

In the Late Chalcolithic levels, 13 notched pieces with a lateral notch, Type IV.1(a,b,c), are present. Most of these tools range between 20 and 40 mm in length. Clactonian notches, notches with use, and retouched pieces are present in the Bronze Age levels. The notches are mostly lateral although some of them are transverse. Notched pieces represent 7.5 % of the Acropolis trench 8 lithics and 19.4 % of the lithics from Acropolis trench 9.

Denticulate tools, type IV.2, are made on flakes or blade fragments. Of interest is one piece from Acropolis trench 8, Phase I, manufactured on a thin slab. These implements are represented in Bronze Age 4 Middle Bronze levels. Acropolis trench 8 has 7.5 %, and Acropolis Trench 9 has 1.4 % of these tools.

Group V Retouched Tools

This group contains flakes, blades, blade fragments and bladelets with backed, continuous, partial and nibble retouch. This category of implements is not representative, although they are present in all trenches and in all levels and complexes at prehistoric Aphrodisias. In Acropolis trench 8 they represent 2 % of the tools, and in Acropolis trench 9 the retouched blades alone represent 5.5 % of the total.

Group VI Scrapers « racloirs »

Only six scrapers are found in the prehistoric deposits (Late Chalcolithic 2, Bronze Age 3, Bronze Age 4 Middle Bronze and Late Bronze). They can be divided simply as follows:

- 1. Single, lateral scrapers (a) with marginal short and scalariform retouch. 145
- 2. Double scraper (a) Cat. no. 1598f.19 (Figure 254.5).
- 3. Transverse scraper (a) a crude piece with abrupt retouch from Acropolis trench 8 Complex A-4, Phase I, cat. no. 2201.13.

Group VII Truncated Pieces

Truncated implements might be described as blade fragments with a transverse-concave truncation, double truncation, or with a transverse-lateral truncation. A few of these tools are also marginally retouched. He Eight tools were recovered: one in Late Chalcolithic 2; two in Late Chalcolithic 3; one in BA1; three in BA3; and one in BA4. Of the total tools of Acropolis trenches 8 and 9 they represent 2 % and 4.1 % respectively.

Group VIII Composite Tools

This is an important group of tools in the lithic collection of prehistoric Aphrodisias. Composite tools comprise implements that contain two or sometimes three different tool types. They are manufactured on flakes, blades and thin slabs. The principal tool types include: endscrapers and burins, 147 endscrapers and denticulated

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145. Cat. no. 1598f.17 (Figure 253.11);

Cat. no. 1581.8 (Figure 255.4);

Cat. no. 263.9 (Figure 257.7);

Cat. no. 623.26 (Figure 266.8).

146. Cat. no. 515.6 (Figure 260.10).

147. Cat. no. 1598f.28 (Figure 253.14);

Cat. no. 736.103 (Figure 263.9).
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flakes ¹⁴⁸ endscrapers and notched pieces, ¹⁴⁹ endscraper-piercers and notched pieces, ¹⁵⁰ piercers and denticulated, ¹⁵¹ piercers and sickles, ¹⁵² burins and piercers, ¹⁵³ burins and notched pieces, ¹⁵⁴ burins and notched tools, ¹⁵⁵ burins and truncated blades, ¹⁵⁶ burin-piercer-denticulated tools, ¹⁵⁷ and denticulated and retouched tools. ¹⁵⁸ Composite tools represent 7.5 % of the lithics of Acropolis trench 8 deposits, and 12.5 % of the tools associated with Acropolis trench 9.

Group IX Bifacial Tools

Two bifacial tools are associated with Acropolis trench 4: one was found in Complexes VI-IV, cat. no. 357.26 (Figure 258.17), and one in a mixed deposit (not catalogued). Both are manufactured on blades. The purpose of these tools is uncertain, but it is possible that they served as chisels.

Group X Knives

A few of the crudely knapped pieces, catalogued as utilized or backed flakes or blades, may be considered knives. A. Ronen (1976:91), defines these tools as « a flake with one edge blunted for holding the opposite edge being left sharp for cutting ». They are found in all Acropolis trenches, 159 with the exception of trenches 4 and 6.

Group XI Arrowheads

148. Cat. no. 1452.7 (Figure 256.11).

One pointed tanged flake, cat. no. 3090B.1 (Figure 268.16) recovered from Acropolis trench 9 was considered by the excavators to have been an arrowhead. A large removal on one edge as well as the thickness of the piece, leaves us with some suspicion as to its function.

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149. Cat. no. 318.10 (Figure 259.19).
150. Cat. no. 350.12 (Figure 259.4);
     Cat. no. 718.21 (Figure 263.10);
    Cat. no. 718.22 (Figure 263.11);
    Cat. no. 718.14 (Figure 472.8);
     Cat. no. 455.27 (Figure 262.10).
151. Cat. no. 231.11 (Figure 257.17);
     Cat. no. 350.13 (Figure 259.5);
     Cat. no. 495.1 (Figure 261.6).
152. Cat. no. 324.4 (Figure 259.31);
    Cat. no. 500.16 (Figure 260.12).
153. Cat. no. 277.1 (Figure 257.13);
    Cat. no. 263.6 (Figure 257.11).
154. Cat. no. 318.11 (Figure 259.26).
155. Cat. no. 357.25 (Figure 258.1).
156. Cat. no. 485.12 (Figure 262.2).
157. Cat. no. 225.5 (Figure 257.16).
158. Cat. no. 713.101 (Figure 265.12).
159. Cat. no. 279.9 (Acropolis 3);
    Cat. no. 2160.15 (Figure 267.17);
    Cat. no. 507.13 (Figure 260.2);
    Cat. no. 3179 A.12 (Figure 268.18);
    Cat. no. 715.39 (Figure 266.4);
    Cat. no. 3194 A.B (Figure 268.19).
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In this report, it is classified as a retouched tool. The classification of some of the tanged blade fragments is not possible due to their fragmented condition.

Group XII - Sickles

Sickle elements and fragments are the most important group of tools unearthed at Aphrodisias. In the presentation of the chipped stone, we have followed J. Tixier's (1963) system of placing them at the end of the tool type discussion.

Sickle elements are those tools with truncated ends. Only one edge has signs of knapped denticulation or use denticulation and sheen. The opposite edge bears no denticulation, but it can be backed. Some pieces have only one truncated extremity and their opposite end is natural. Several of these blades were set into wood or bone, (shaped like the modern sickle) and used in reaping grains. Tools with both edges denticulated and one extremity truncated and the other fractured, or those with both extremities fractured are generally classed as blade or sickle fragments.

Sickle elements are generally manufactured on blades that are triangular or trapezoidal in section, but flakes and thin slabs are also used. Singular elements *per se* are rare in occurrence when compared with other tool classes. Large sickle blades with distal and proximal sections, measuring 100 to 200 mm, are rarely found. Two deserve mention. One, *cat. no. 1571.1* (Figure 255.7), from Pekmez trench 2 Level VIIC, bears partial denticulation but no sheen. The other, from Acropolis trench 5, *cat. no. 493.12* (Figure 261.11) is denticulated with sheen.

Principal characteristics of the sickle elements at Aphrodisias include the following:

- 1. One edge roughly backed
- 2. Rough truncation
- 3. Denticulations

Denticulations vary from crest to crest, about 1 to 2 mm; they include inverse denticulations, use denticulations and use marks. All three characteristics occur throughout the prehistoric deposits. In this study it has not been possible to isolate these factors for a meaningful analysis. As a general rule, silica sheen is found on a large part of one or both surfaces. This does not apply to sickle fragments, to broken blades with one or both edges denticulated, or to those with inverse denticulations, use denticulations or use marks. Some of the blade fragments are characterized by being roughly truncated at one end with an oblique or rectilinear hinge fracture at the other end. In some cases this oblique fracture is pronounced. A few of the blade fragments have a double fracture, (i.e., rectilinear or oblique hinge fracture, or rectilinear-oblique/ oblique-hinge fracture, and so on).

This group of tools throughout the prehistoric periods does not have uniformity of length, width or thickness measurements. Small sickle elements measuring between 20 and 40 mm are found from the Late Chalcolithic to Middle Bronze deposits. In Bronze Age 2 to Bronze Age 4-Middle Bronze inclusive, small sickle elements are found associated with lithics measuring between 40 to 60 mm with the mean length ca. 55 mm. The widths vary between 10 and 25 mm with the average measuring 14 mm. Thicknesses are not constant; they vary between 3 and 11 mm with the average thickness measuring between 4 and 5 mm.

Cananean debitage is found in the Acropolis deposits on tools that are so-called « Cananean blade » types. These tools are well-known for their distribution throughout the Near East, beginning in the Neolithic period and continuing through both the Chalcolithic and Bronze Ages. René Neuville (1930:199-221) first defined them as « blades with median ridges removed before the breaking off of the piece ». Characteristically, they are trapezoidal in section. This feature has been discussed by many authors including J. Cauvin (1968:182-184). This type of blade, manufactured from imported flint, has also been found at Byblos in Lebanon. Sickles exhibiting these characteristics were unearthed in deposits from Aphrodisias in Bronze Age 4 and Middle Bronze contexts.

F. Hours (1979) has recovered cores that are associated with these blades in the excavations of Saida Dakerman in Lebanon. Hours (1979:59), writes of the unique characteristics of such products and their debitage, « The side-face is more or less rectilinear and the edges are parallel due to the additional preparation of the butt, which is almost as large as the blade itself; it is always faceted and is either plain or convex. The bulb is short and projects, but the distal end is always bent. To obtain very flat blades it is necessary to remove this end. The flint is generally prepared as a group whose elements measure tenths of centimeters in length; it is then broken into slabs allowing the knapped products an approximate measurement of 10 mm. Both dorsal surfaces, the inverse and the upper ones of the flint's bench, constitute the core's edges. Blades are knapped gradually from one edge to another. The marks of the knapped blade form a ridge on the next blade to be struck. According to the position of the percussion point and the progressive knapping, the blades will have one or two dorsal ridges and the section will be different ».

Cananean debitage is present only in Acropolis trenches 5 and 7. In Acropolis trench 5, nine pieces were recovered: one in Complex I in the Bronze Age 4 - Middle Bronze deposits; five in Complexes D in Middle Bronze and E in Bronze Age 4 - Middle Bronze respectively; and three in Complexes C and A which are associated with

Middle Bronze and Middle Bronze-Mixed contexts respectively. 160 These are found on sickle fragments, that are trapezoidal in section. Their widths vary from 19 to 25 mm, with an average of approximately 21 mm. Five pieces were recovered in Acropolis trench 7 in Complexes E-D and C-A belonging to Bronze Age 4 - Middle Bronze and Middle Bronze Mixed periods. 161 There are also blade fragments with widths between 17 and 25 mm. The nine sickle fragments from Acropolis trench 8 comprise 40 % of the retouched pieces in that trench. In length they are between 31 and 42 mm, and in width between 14 and 22 mm. These pieces are characterized by unilateral and inverse denticulation, edges with use denticulations or use marks, single rectilinear or oblique fracture, bi-fracture, or fracture and truncation.

Eleven pieces have been unearthed in Acropolis trench 9. One of these is a sickle element on a thin slab with unilateral flat denticulations. The remaining pieces are small fragments. Of interest is a composite tool, cat. no. 3178A.1 (Figure 268.20), which is a burin on a break plus a sickle element on thin slab. In Kuşkalesi trench 1 Level 7, assigned to the Bronze Age 4, is a sickle element on a thin slab, cat. no. 66.443 (Figure 269.2); it has visible denticulations and rough backing on its other edges.

« Blade » Elements

The term « blade » elements is used for those pieces or knife elements that are identical to sickle elements; basically they bear the same morphological characteristics but do not carry sheen. A large number of similar blades have been found at Byblos, (J. Cauvin 1968:74), but there they were theorized to have been unused sickle elements.

Saw Fragments

Only two saw fragments were unearthed, and those in Acropolis trench 5 in the Bronze Age 4 Middle Bronze Age periods. *Cat. no. 485.16* (Figure 261.13) and *cat. no. 454.6* bear deep denticulations and have thus been differentiated from sickle and blade fragments.

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160. Cat. no. 521.5 (Figure 260.9);
Cat. no. 496.3 (Figure 260.14);
Cat. no. 496.5 (Figure 260.16);
Cat. no. 497.5 (Figure 261.1);
Cat. no. 500.21 (Figure 261.2);
Cat. no. 500.22 (Figure 261.3);
Cat. no. 485.13 (Figure 262.3);
Cat. no. 485.14 (Figure 262.5);
Cat. no. 486.5 (Figure 261.9).

161. Cat. no. 703.16;
Cat. no. 701.15 (Figure 265.1);
Cat. no. 703.17 (Figure 265.3);
Cat. no. 651.2 (Figure 266.10).
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Conclusions

Our study of the prehistoric Aphrodisias field records and the ceramic analysis has brought about the definition of several cultural periods extending from the Late Neolithic to the Iron Age — yet no chipped stone artifacts were recovered from the Pekmez trench 2 Test Trench C, in the level tentatively assigned to a Late Neolithic(?) deposit. The percentages given in the tables for the periods throughout the earlier part of this study must, at this point, be taken at their face value.

In the Late Chalcolithic 1 and 2 periods, sickles manufactured on thinner blanks occur, and also on thicker blanks. And there are some laterally notched pieces. But there are no tools manufactured on thin slabs in these periods. In the deposits of Pekmez trench 2, the percentage of blades indicates their importance up to the Late Chalcolithic 3 period. It is difficult to determine, however, if this is a significant indicator because the excavated area of this trench was so limited.

In the Bronze Age, pieces with both lateral and transverse notches are numerous, along with a few piercers. The presence of these piercers is not surprising. It has been suggested that this implement was used for drilling and boring — in Turkey¹⁶² as well as in Europe and the Near East. There are no spikes or beaked piercers in the earlier periods, but these tools are well-represented from Bronze Age 3 through to the Late Bronze Age. The Middle Bronze Age and Late Bronze periods appear to be characterized by the use of larger implements; this is particularly true of the Acropolis trench 8 deposits.

Sickles are the most representative group among the chipped stone types. This suggests, of course, that agriculture was one of the principal activities of the ancient Aphrodisians. The chipped stone industry, including notched and denticulated pieces, also suggests woodworking — this is evidenced in the ground stone industry by axes and adzes. Traditionally, burins relate to a bone industry.

There are some questions about this tool assemblage that beg for answers. What is the cultural provenience of the blades with « Cananean debitage »? Recently these tool types have been recognized in the Neolithic of Greece. 163 What is the source of the veined flint that appears in these deposits? What is the origin of some of these tools — the sickles from Acropolis trench 4, 164 the

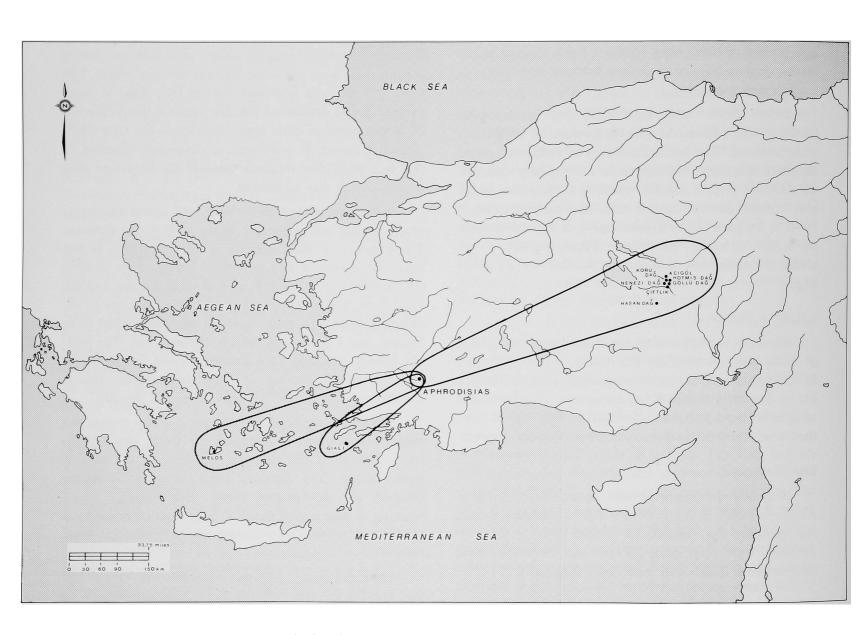
^{162.} See G. Arsebük (1974:149-159), the Tülintepe excavations.

^{163.} This idea was verbally transmitted by Angela Ninozi-Deroche, (Thèses de Doctorat de 3ème Cycle, Paris X, Nanterre University) who is concerned with the Neolithic period in Greece. The Neolithic Greek development appears to be synchronous with some areas of Anatolia.

^{164.} Cat. no. 359.18 (Figure 258.14) and cat. no. 370.1 (Figure 258.16).

scraper from Acropolis trench 5 (cat. no. 528.6, Figure 260.11), and the truncated blade from Acropolis trench 5 (cat. no. 515.6, Figure 260.10)? What is the origin of the tools which are in complete contrast to the Aphrodisias prehistoric lithic kit? Since they are of superior quality,

they appear to have been manufactured elsewhere and imported to Aphrodisias as finished products. Because of these questions, this study of the chipped stone at Aphrodisias must be considered a preliminary assessment.



270. Sources and dispersal of Aphrodisias Late Chalcolithic obsidian (Adapted by Mary G. Winkes).

THE PROVENIENCE OF OBSIDIAN ARTIFACTS FROM LATE CHALCOLITHIC LEVELS AT APHRODISIAS

by M. James Blackman

Over the last decades, provenience studies of obsidian artifacts have been given much attention for their use in monitoring and testing models of long range exchange. The provenience determinations, based on matching chemical or physical properties of geological source samples and archaeological artifacts, have become progressively more sophisticated as more precise analytical techniques are applied and as more comprehensive sampling of the source areas are available. Even so, not all obsidian sources in Western Asia have been located nor have all the known sources been adequately sampled.

Dixon (1977) in reviewing old world obsidian studies through the early 1970's concluded that the Aegean region obsidian sources, on the islands of Melos, Giali, and Antiparos, had all been located and sampled. Aspinall et al. (1972) demonstrated that not only could the sources on each of these islands be distinguished from one another, but that the data from neutron activation analysis allowed the Melos obsidian to be separated into two source groups, at Adhamas (Melos A) and Dhemenegaki (Melos D).

Dixon's review of the literature for the Central Anatolian Region (Figure 270), however, lead him to believe that other sources, in addition to the important ones at Acıgöl (1e-f) and Çiftlik (2b), and the apparently unutilized sources at Hasan Dağ (1h) and Kulaklıkepez (4f), might exist. Yellin and Perlman (1977) confirmed the presence of these additional sources, expanding the known Central Anatolian source groups to ten (Table 75). Analysis of artifacts from sites in Israel, however, showed that as many as five additional sources may remain to be located.

Little is known of the provenience of obsidian from archaeological sites in western Turkey, and what is known is based primarily on early optical emission spectroscopic analysis of very few samples. Renfrew and Dixon (1977) include most of southwestern Turkey in their Konya interaction zone. An interaction zone is defined as « the area within which sites, within the time-range considered, derive 30 % or more of their obsidian from the same specific source » (Renfrew and Dixon 1977:147). The Konya interaction zone, which remains unchanged from about 7500 to 3000 B.C., derives 30 % or more of its obsidian from the Acıgöl (1e-f) source and includes the sites of Hacılar, Çatal Hüyük and Mersin. Gale (1981:49), using mass spectroscopy, reexamined one of the Hacılar artifacts originally assigned to Acıgöl by Renfrew et al. (1966:69) and concluded that it was actually from the Melos D source. Gale further documented the presence of Çiftlik (2b) obsidian at Çatal Hüyük. Clearly, in light of the expanded number of potential sources from Central Anatolia and the penetration of Melian obsidian into the interior at about 5200 B.C., the pattern of obsidian exchange in Western Asia Minor needs to be reexamined using more precise analytical techniques.

It is within this framework that the obsidian from the Late Chalcolithic Levels (about 4360 to 2800 B.C.) at Aphrodisias must be considered. Aphrodisias is located about 575 km west of the Central Anatolian source region, about 450 km east of the sources on Melos, and about 240 km from the Giali source (Figure 270). Overland routes

TABLE 75. CHIPPED STONE OBSIDIAN ANALYSIS GEOLOGICAL SOURCE GROUPS

CENT	RAL ANATO	LIAN REGIO	Ň
Location	Renfrew et al. (1968)	Yellin and Perlman (1977)	Blackman (1984)
1. Göllü Dağ	(2b) Çiftlik	GLD-A	
2. <i>id</i> .	id.	GLD-B	Göllü
3. <i>id</i> .	id.	GLD-C	
4. Hötmis Dağ	(1e-f) Acıgöl	HTMS-A	Hötmis II
5. <i>id</i> .	id.	HTMS-B	Hötmis III
6. <i>id</i> .	id.	HTMS-C	Hötmis I
7. Koru Dağ		KRUD	Koru
8. Nenezi Dağ		NNZD	
9. Hasan Dağ	(1h)		Hasan
10. Kulaklikepez	(4f)		_
	AEGEAN R	EGION	
Location		Aspinal et al. (1972)	
1. Melos		Melos A	
2. Melos		Melos D	
3. Giali		Giali	
4. Antiparos		Antiparos	

bringing obsidian into the area from the Central Anatolian source region have existed from Neolithic times. The flood plain of the Maeander River also provides ready access to the coast and a route for Aegean obsidian to penetrate the interior of western Anatolia. Inclusion of Late Chalcolithic Aphrodisias in the Konya interaction zone would place the site within an obsidian exchange network going back well into the Neolithic. If, however, Aphrodisias obsidian were of Aegean origin, then contact, at least through trade, would be established with the Aegean world and some degree of continuity between the Late Chalcolithic and Classical Greek periods would be indicated.

Twenty-three obsidian artifacts from Late Chalcolithic 1 through the Early Bronze Age at Aphrodisias were submitted for analysis (Table 76). Three of the pieces, cat. nos. 1568.103, 1577.101, and 1598f.42, were chert. The remaining 20 obsidian artifacts were analyzed using instrumental neutron activation at the National Bureau of Standards 10 MW research reactor. The artifacts were cleaned with distilled water, dried at 105 degrees C for 24 hours, and samples taken by wrapping each artifact in

TABLE 76. APHRODISIAS OBSIDIAN LATE CHALCOLITHIC 35 % C.A. / 65 % MELOS

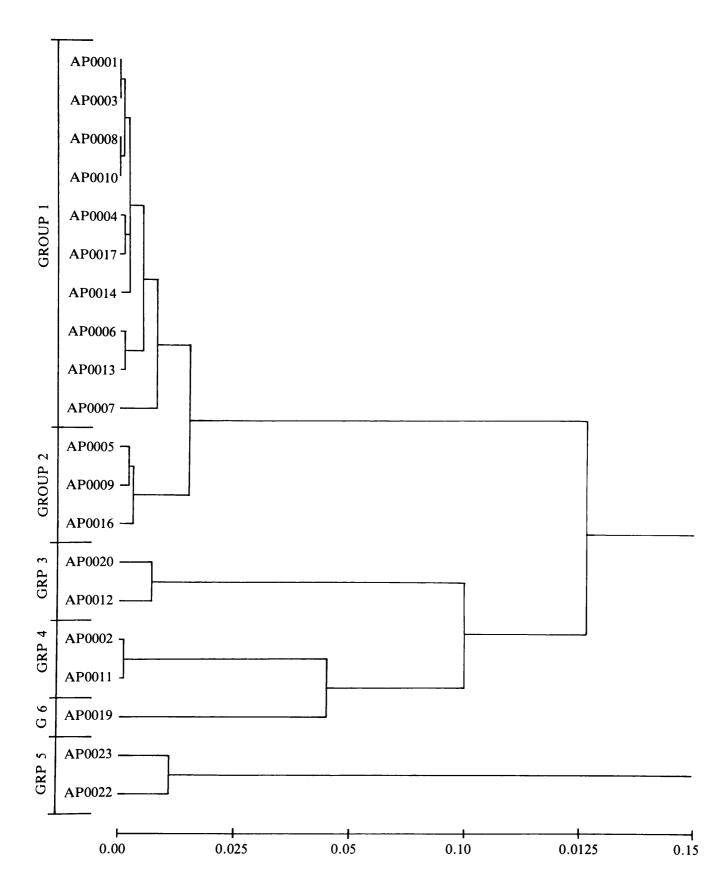
Bronze Age 1 (ca. 28	300 2600 B.G	C.) — Obsidian Central Ai	
1531	APO012	Göllü Dağ « '	
Late Chalcolithic 4 (2	909 2763 B.G	C.) — No obsid	ian
Late Chalcolithic 3 (31		-	
100 % Melos	35 2 505 2 101,		
1519.101	APO005	Melos D	blade
1525.104	APO013	Melos A	flake
1533.106	APO017	Melos A	
1533.106	APO009	Melos D	
Late Chalcolithic 2 (33	95 3135 B.C.)	— Obsidian ~	10 % —
43 % C.A 57 % Me			
	APO014	Melos A	
1563a.101	APO010	Melos A	chips
1568.102	APO023	Koru Dağ	
1571.2	APO006	Melos A	blade
		Nenezi Dağ	core
	APO022	Koru Dağ	
1593.2	APO004	Melos A	blade
Late Chalcolithic 1 (43	60 - 3395 B.C.) — Obsidian ~	4 %
43 % C.A. 57 % Me			
1598a.4	APO008	Melos A	blade
1598e2.6	APO007	Melos A	flake
1598f.7	APO019	Unknown	
		(C. Anatolian	?)
1598f.23		Melos A	
1598f.30		Melos A	blade
	APO020	Göllü Dağ	
1599b.42	APO002	Nenezi Dağ	blade

clean plastic sheeting and striking off approximately 10 mg flakes with an alumina pestle. The chips were further reduced to a medium sand size, rewashed and dried. One-hundred mg of each sample was used in the analysis. Samples, replicates of the standard, NBS SRM1633 coal flyash, and two check standards were irradiated for eight hours at a flux of 5 × 10¹³ n/cm² sec and counted twice. Following a six-day decay, the samples were counted for two hours each using an intrinsic germanium detector (FWHM at 1333 Kev Co60 of 1.71 Kev) and data collected on an 8192 channel multi-channel analyzer. The samples were then allowed to further decay for an additional three weeks and recounted for four hours each using the same system. Table 77 presents a summary of the elements sought and quantified.

The elemental concentration data for 19 elements were then used as input in an hierarchical aggregative clustering program. The clusters formed, presented as dendrograms plotted as a function of dissimilarity, were produced by « nearest neighbor » distance calculations on a mean character difference matrix (Bieber et al. 1976). The consistency of the clusters were checked by comparing the group mean and standard deviation.

TABLE 77. EXPERIMENTAL PARAMETERS

Ele-	Nuclide	γ-ray	Number	Conc.	in	Elements
ments	analyzed	energy	count	SRM		used in
						cluster
Na	Na-24	1369	1	0.32	. %	*
K	K-42	1525	1	1.61		
Ca	Sc-47	159	1	4.70		
Sc	Sc-46	889	2	27.0	ppm	*
Cr	Cr-51	320	2	131	ppm	
Fe	Fe-58	1099 &	2	6.20		*
		1292	_			
Co	Co-60	1173 &	2	41.5	ppm	
		1333				
Zn	Zn-65	1115	2	213	ppm	*
As	As-76	559	1	61.0	ppm	*
Br	Br-82	554	1	8.6	ppm	
Rb	Rb-86	1077	2	125	ppm	*
Sb	Sb-122	564	1	6.9	ppm	
Sb	Sb-124	1690	2	6.9	ppm	*
Cs	Cs-134	796	2	8.6	ppm	*
Ba	Ba-131	496	1,2	2700	ppm	
La	La-140	1596	1	82.0	ppm	*
Ce	Ce-141	145	2	146	ppm	*
Nd	Nd-147	91	1,2	64.0	ppm	*
Sm	Sm-153	103	1	12.9	ppm	*
Eu	Eu-152	1408	2	2.5	ppm	*
Gd	Gd-153	103	2	11.2	ppm	*
Tb	Tb-160	298	2	1.9	ppm	
Yb	Yb-169	177	2	6.4	ppm	
Yb	Yb-175	396	1	6.4	ppm	*
Lu	Lu-177	208	1	1.0	ppm	
Hf	Hf-181	482	2	7.9	ppm	*
Ta	Ta-182	1221	2	1.8	ppm	*
Th	Pa-233	312	2	24.8	ppm	*
U	Np-239	106	1	11.6	ppm	*



271. Cluster Dendrograms of Aphrodisias Obsidian Artifacts.

TABLE 78. APHRODISIAS OBSIDIAN CONCENTRATION DATA

Sample	Nd	Sm	Eu	Tb	Yb	Lu	Hf	Ta	Th	U
		AP	HRODISIAS	OBSIDIAN	GROUP 1:	MELOS "A"	GROUP			
APO 001	15.8	2.53	.437	.487	2.29	.391	3.54	.899	14.0	4.7
APO 003	15.2	2.44	.432	.428	2.26	.374	3.50	.853	13.8	4.7
APO 004	14.1	2.59	.435	.406	2.22	.376	3.47	.916	13.9	3.4
APO 006	14.6	2.52	.429	.531	2.23	.399	3.53	.945	13.8	4.29
APO 007	13.6	2.45	.432	.396	2.18	.389	3.38	.818	13.4	4.7
APO 008	14.3	2.48	.440	.431	2.22	.365	3.48	.818	13.8	4.7
APO 010	14.4	2.50	.424	.435	2.32	.397	3.57	.915	14.2	4.9
APO 013	14.8	2.51	.434	.570	2.40	.407	3.71	.907	14.2	4.84
APO 014	14.6	2.45	.434	.423	2.29	.369	3.60	.935	13.9	4.9
APO 017	14.9	2.47	.442	.420	2.31	.400	3.58	.850	13.7	3.82
MEAN	14.6	2.49	.434	.453	2.27	.387	3.54	.885	13.8	4.54
STD DEV	.6	.09	.005	.058	.06	.015	.09	.047	.3	.52
		APHRO	DISIAS OBS	IDIAN GRO	UP 2: MEL	os "d" sou	IRCE GROU	P		
APO 005	13.9	2.50	.434	.509	2.19	.348	3.74	.837	13.0	3.7
APO 009	14.4	2.46	.443	.426	2.28	.361	3.66	.840	13.1	4.5
APO 016	13.6	2.56	.451	.447	2.29	.377	3.62	.819	13.0	3.50
MEAN	14.0	2.51	.443	.461	2.25	.362	3.67	.832	13.0	3.39
STD DEV	.4	.05	.009	.043	.06	.015	.06	.011	.1	.5:
		APHROI	DISIAS OBS	IDIAN GROU	JP 3 : NENE	ezi dağ sot	URCE GROU	J P		
APO 002	19.2	2.95	.494	.500	2.52	.358	4.16	1.66	28.0	9.3
APO 011	18.4	3.01	.534	.527	2.52	.351	4.20	1.75	28.1	9.49
MEAN	18.8	2.98	.514	.514	2.52	.355	4.18	1.71	28.1	9.40
		APHROI	DISIAS OBS	IDIAN GROU	JP 4 : GÖLI	LÜ DAĞ SOU	JRCE GROU	P		
APO 012	13.7	2.60	.111	.575	2.46	.355	3.02	2.27	22.1	10.3
APO 020	13.8	2.66	.148	.510	2.39	.365	3.13	2.16	23.0	8.6
MEAN	13.8	2.63	.130	.543	2.43	.360	3.08	2.22	22.6	9.40
		APHRO	DISIAS OBS	SIDIAN GRO	UP 5 : KOR	u dağ sou	RCE GROU	P		
APO 022	14.9	n.d.	.921	4.36	n.d.	4.43	3.46	33.9	n.d.	
APO 023	13.8	3.46	n.d.	1.00	4.21	.624	4.45	3.37	35.9	11.9
MEAN	14.4	3.46	n.d.	.961	4.29	.624	4.44	3.42	34.9	11.9
	API	HRODISIAS	GROUP 6:	UNCLUSTER	ED SAMPL	E OF UNKN	OWN PROV	ENIENCE		
APO 019	20.4	3.65	.459	.584	2.25	.337	3.21	2.42	28.5	7.3

The Aphrodisias obsidians formed five distinguishable clusters of two or more samples, labeled 1 through 5 in Figure 271, while a single sample failed to cluster with any of the other samples. Groups 1 and 2 show major differences in Scandium, Iron, and Cobalt, but are otherwise quite similar (Table 78). Groups 3, 4, and 5 may be differentiated by their Scandium, Iron, Tantalium, Thorium and rare earth element contents (Table 78). The isolated sample, AP0019, contains very high concentrations of Arsenic, Cesium, Barium, and Scandium. Although only a single analysis, past experience has shown that samples with such distinctive concentration values nearly always are later confirmed as separate sources (Blackman 1984). This sample has therefore been given a separate group status as Group 6. Table 78 provides a list of all the elemental concentration data for the Aphrodisias obsidian samples.

Data were available for comparison from a number of sources in each of three potential source regions — the

Aegean region, the Central Anatolian region, and the more remote Eastern Turkey — Socialist Soviet Republic region (E.T.S.S.R.). The Aegean and Central Anatolian sources are listed in Table 76. In addition, the important sources at Nemrut Dağ on Lake Van, the Zırnaki Tepe Source, Perlman and Yellin (1977), possibly the 3a source of Renfrew et al. (1968), and Renfrew et al.'s 1g source of unknown provenience were included from the E.T.S.S.R. Region. Each of these sources is readily distinguishable from one another by the clustering program.

When the Aphrodisias obsidians and the source samples were clustered together (Figure 272), the Group 1 and 2 samples from Aphrodisias clustered closely with the Melos A and Melos D sources, respectively. Group 3 samples clustered with the Central Anatolian source at Nenezi Dağ; Group 4 samples with the Central Anatolian Source at Göllü Dağ (Renfrew's 2b); and Group 5 samples formed a less tight cluster with the Central Anatolian source at Koru Dağ. The single sample of Group 6 did

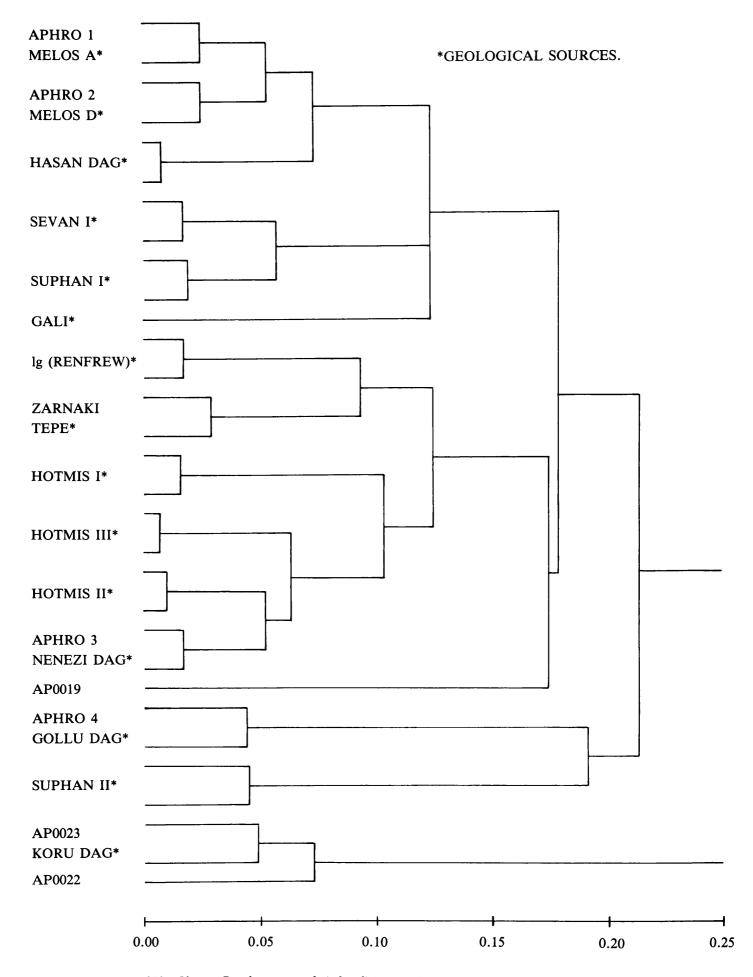
Sample	Na %	Sc	Fe %	Со	As	Rb	Sb	Cs	Ba	La	Ce
	-	-	APHRODI	SIAS OBSID	IAN GROUI	P 1 : MELC	OS "A" GRO	OUP			
APO 001	3.02	1.52	.761	.572	2.21	134	.202	3.67	581	27.6	44.8
APO 003	2.97	1.49	.763	.559	2.89	129	.259	3.54	547	27.5	44.7
APO 004	3.03	1.50	.760	.520	2.23	129	.209	3.48	556	28.2	44.8
APO 006	2.98	1.51	.759	.485	2.17	126	.247	3.69	571	27.5	44.8
APO 007	(1.69)	1.46	.737	.540	2.08	127	.192	3.40	553	27.3	43.1
APO 008	3.02	1.49	.740	.647	1.97	121	.210	3.55	525	27.7	44.7
APO 010	3.06	1.52	.777	.599	2.47	132	.247	3.61	556	28.7	45.7
APO 013	3.05	1.52	.783	.603	1.78	134	.212	3.56	582	28.2	45.7
APO 014	3.04	1.49	.770	.565	2.20	124	.279	3.74	547	27.9	44.6
APO 017	2.85	1.49	.766	.542	3.07	121	.166	3.56	546	27.2	44.7
MEAN	3.00	1.50	.762	.563	2.31	128	.222	3.58	556	27.8	44.8
STD DEV	.06	.02	.014	.046	.40	5	.035	.10	18	.5	.7
		API	HRODISIAS	OBSIDIAN	GROUP 2:	MELOS "I	o" source	GROUP			
APO 005	3.10	2.08	.979	1.07	2.18	125	.148	3.37	528	27.8	44.0
APO 009	3.09	2.10	.982	1.14	2.68	120	.232	3.37	578	27.7	43.7
APO 016	3.12	2.09	.992	1.01	2.85	124	.173	3.31	594	27.7	43.8
MEAN	3.10	2.09	.984	1.07	2.57	123	.184	3.35	567	27.7	43.8
STD DEV	.02	.01	.007	.07	.35	3	.043	.03	34	.1	.2
		APH	IRODISIAS	OBSIDIAN	GROUP 3:	NENEZI D	AĞ SOURCI	E GROUP			
APO 002	3.07	1.32	.831	.571	5.60	182	.854	6.68	663	44.6	66.9
APO 011	3.38	1.32	.848	.873	6.18	182	.801	6.49	671	44.6	66.2
MEAN	3.23	1.32	.840	.722	5.89	182	.828	6.59	667	44.6	66.6
			HRODISIAS	OBSIDIAN	GROUP 4:	GÖLLÜ DA		GROUP			
APO 012	2.98	1.74	.535	n.d.	6.70	207	.940	7.69	158	24.4	43.1
APO 020	3.07	1.71	.556	.115	7.00	206	.869	7.74	283	26.0	44.5
MEAN	3.03	1.73	.546	.115	.685	207	.905	7.72	221	25.2	43.8
		AP	HRODISIAS	OBSIDIAN	GROUP 5:	KORU DA	Ğ SOURCE	GROUP			
APO 022	n.d.	1.97	.582	n.d.	n.d.	292	1.18	13.6	141	n.d.	32.7
APO 023	3.28	1.91	.596	n.d.	9.33	274	1.14	13.1	154	17.9	34.9
MEAN	3.28	1.94	.589	n.d.	9.33	283	1.16	13.4	148	17.9	33.8
		APHRODIS	IAS GROUF	6: UNCLU	JSTERED SA	MPLE OF	UNKNOWN	PROVENIE	ENCE		
APO 019	2.75	3.15	.554	.151	57.9	234	2.40	18.2	1069	42.0	66.9

not cluster with any of the available sources and therefore, it remains of unknown provenience. It is of interest to note that no obsidian from the Aegean source at Giali (the closest Aegean source), was present nor was any of the obsidian derived from the important sources in the E.T.-S.S.R. region. More importantly none of the Aphrodisias obsidian clustered with the Hötmis I, II, or III sources, collectively the Acıgöl (1e-f) source of Renfrew et al. Aphrodisias does not appear to have been receiving any obsidian from the major supplier of obsidian for the earlier sites of Hacılar and Çatal Hüyük.

Table 76 summarizes the source assignments of the Aphrodisias obsidian by period. During the Late Chalcolithic periods 1 through 3 (ca. 4360 to 2900 B.C.) Aphrodisias was supplied with obsidian from the Aegean island of Melos. Both of the Melian obsidian sources were arriving at the site with 77 % from the A source and 23 % from

the D source. In Late Chalcolithic 1 (4360-3395 B.C.) and Late Chalcolithic 2 (3395-3135 B.C.) the Melian obsidian comprises 50 % of the assemblage. In Late Chalcolithic 3 (3135-2909 B.C.), however, the Melian obsidian contribution rises to 100 %.

The Central Anatolian obsidian reaching Aphrodisias is from three and probably four sources. No single source predominates (two artifacts each from Nenezi, Göllü, and Koru Dağ, plus a single artifact of unknown provenience). Taken as a whole, the Central Anatolian sources comprise about 50 % of the Late Chalcolithic 1 and 2 obsidian assemblages, but is not present in the Late Chalcolithic 3. The significance of the absence of Central Anatolian obsidian during this time period was tested. If one assumes the same distribution observed in the Late Chalcolithic 1 and 2 (i.e. 50 % Melian, 50 % Central Anatolian) should also be present in the Late Chalcolithic 3,



272. Cluster Dendrograms of Aphrodisias Artifacts and Obsidian Source Samples.

then the observed distribution of 100 % Melian obsidian in the Late Chalcolithic 3 assemblages has a 6.25 % probability of occurring by chance. It seems reasonable to assume that the pattern of sources utilized has significantly changed between the Late Chalcolithic 2 and 3 periods. No obsidian was available from the Late Chalcolithic 4 period (ca. 2909-2763 B.C.) and so the change in source utilization could not be tested for later periods.

In summary then, from about 4360 B.C. to about 2909 B.C. Aphrodisias appears to have been receiving obsidian from two different exchange networks. One network procured obsidian from the two sources on the island of Melos, probably mixing the two sources at their origin and transporting them by sea and then overland to Aphrodisias. The second network acquired obsidian from three or four sources in the Central Anatolian region and transported them overland to Aphrodisias. Where the obsidian from the several sources were intermixed is important to the understanding of obsidian exchange westward out of the Central Anatolian region. If the intermixing of the various sources took place in the source region, we are observing a more or less direct line from the source region. If the intermixing took place at Aphrodisias, then as many as four separate networks may have existed. All intermediate combinations are also possible. The application of the concept of interaction zones also depends upon knowledge of how the Central Anatolian obsidian reached Aphrodisias. Strict application of the concept as defined by Renfrew and Dixon (1977) places Aphrodisias in a Melian interaction zone throughout the Late Chalcolithic and at no time in any interaction zone centered in Central Anatolia. If one assumes that the Central Anatolian obsidian sources were intermixed before leaving the source region, then Aphrodisias may also be included in a generalized Central Anatolian interaction zone during the Late Chalcolithic 1 and 2. Exchange, at least for obsidian seems to have been interrupted or curtailed during the Late Chalcolithic 3. At no time during the periods under study does Aphrodisias seem to have been included in Renfrew's Konya zone, centered on the Acıgöl 1e-f source.

Several implications and predictions may be drawn from the study of the obsidian sources at Aphrodisias. First, trading ties between the Aegean region and the interior of southwestern Anatolia, possibly including intermediaries, was occurring as early as 4360 B.C. Second, Aphrodisias was probably not the terminus of Aegean obsidian trade and one might expect to find Melian obsidian at sites further into the interior of western Anatolia during the Late Chalcolithic period. Third, Melian obsidian at 50 % of the Late Chalcolithic 1 obsidian assemblage, probably did not just begin to be traded into the interior during this period. One would expect to find Early Chalcolithic or possibly Late Neolithic sites that were

receiving some obsidian from Melos. Each of these three predictions requires the analysis of obsidian from additional sites in Western Anatolia and probably additional excavation. The proposed reduction or secession of Central Anatolian obsidian trade in Late Chalcolithic 3 requires supporting evidence from sites to the east and indicates the need to look for similar disruption in other traded goods. Finally the obsidian from Hacılar and other sites needs to be reexamined to determine if and when the Konya interaction zone vanished or in fact if it ever existed.

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Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	970
Spatulae Awls		6					1	1		13	1	1 17	1		8 33	10 40
Misc.			1	2		1	5	4	3	8		13	1	1	42	50
Total		9 11	1 1	2 2		1 1	6 7	5 6	3 4	21 25	1 1	31 37	2	1 1	83	100 98

TABLE 79. FREQUENCY OF OCCURRENCE OF BONE OBJECTS - BY TYPE

C. WORKED BONE AND ANTLER

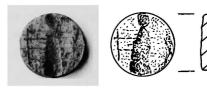
Of 83 bone implements recovered, 33 or 40 % are awls, 8 or 10 % are spatulae, and 42 or 50 % are miscellaneous tools. Table 79 gives the frequency of occurrence of bone tool types recovered from these deposits. Table 80 outlines the incidence rate of tool types. The majority of finds are from Middle Bronze-Mixed contexts representing 37 % of the corpus. In the excavation of Acropolis trench 7, also 37 % of the bone tool total were found. The Bronze Age 4-Middle Bronze periods represent 25 % of the pieces.

Of the eight spatulae recovered, six appeared in Levels VIIIB and VIIIA (Table 79). Two fragmented broad-faced tools, cat. no. 1598f.11 (Figures 379.35, 385.39), and a highly polished fragment, cat. no. 1598.14 (Figures 380.10, 385.40) may originally have been parts of spatulae. It is of interest to note that the majority of these tools appear in Level VIIIA of the Late Chalcolithic 1 period; two others appear in Levels VIID and VIIIA of Late Chalcolithic 2 and 3 periods, respectively.

These broad-ended tools have long been recognized as typical of Late Chalcolithic cultures, achieving a wide distribution in southwestern Anatolia, including Beycesultan (Lloyd and Mellaart 1962: fig. F.2, 26-28), in the Northwest and in sites of the Aegean. Their animal origin has not been conclusively identified, but they are probably manufactured from bovine ribs.

The miscellaneous tools include a possible spindle whorl, cat. no. 1576.1 (Figures 311.4, 387.65, 389.43) found in Pekmez trench 2 Level VIID and ascribed to the Late Chalcolithic 2 period. Mention should be made of two other tools found in Pekmez trench 2: a polished

273. Bone figurine (?) plaque cat. no. 560.2; Acropolis trench 7; Middle Bronze-Mixed.



antler recovered in Late Chalcolithic 1 deposits, cat. no. 1598e2.7 (Figure 379.23); and a possible piercer or chisel point, cat. no. 1515.3 (Figure 397.36), unearthed in Level VIIA of the Late Chalcolithic 3.

Also of interest is a carefully made small disk-shaped bone object with a carved representation, possibly of a human figure. This object tentatively classified as a figurine (?) was found in Acropolis trench 7 in Mixed Bronze Age contexts, cat. no. 560.2 (Figure 273). Another curious object comes from the Middle Bronze-Mixed period of Acropolis trench 3. A flat bone or even ivory plaque, cat. no. 262.1 (Figure 434.15) was decorated on one side with small circles with a point in the center of each. There are perforations at both ends. The decoration of this object resembles a piece from Troy III (no. 540; Schliemann 1881:427), although the Trojan artifact bears bilateral decoration. Schliemann (Ibid.) suggests these objects may have been used as ornaments for horse trappings as mentioned in the Iliad (iv. 141-145).

An object of unknown function, cat. no. 491.5 (Figures 455.8, 459.31) was recovered from the Middle Bronze-Mixed contexts of Acropolis trench 5. Tentatively described as having been manufactured from a boar's tusk, it has double perforations at both ends and is more curved than its closest parallel found in Troy III (Schliemann 1881: no. 537).

TABLE 80	. Free	DUENCY	OF	OCCURRENCE	OF	BONE	ORIECTS
----------	--------	--------	----	------------	----	------	---------

Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	07/0
Trench														-		
Pek 1						1	4	3	1		_				9	11
Pek 2		9	1	2		_			-						12	15
Ac. 1-2																
Ac. 3							1	1	2			1			5	6
Ac. 4								1		5		3			9	11
Ac. 5										3	1	9			13	16
Ac. 6																
Ac. 7										13		18			31	37
Ac. 8													2		2	2
Ac. 9														1	1	1
K-1																
K-2							1								1	1
Total		9	1	2		1	6	5	3	21	1	31	2	1	83	100
970		11	1	2		1	7	6	4	25	1	37	2	1		98

Astragalus bones (also referred to as hucklebones or knucklebones) are found at Aphrodisias as well as Troy III (Schliemann 1881:262; no. 143). Schliemann (*Ibid.*) postulates that these were children's toys. He quotes Homer's story (*Iliad* xxiii.87, 88) of Patroclus' murder of a young boy as a result of passionate anger over the game. The earliest appearance of these objects at Aphrodisias is Pekmez trench 1 from deposits ascribed to Bronze Age 1 (cat. no. 1461.1). The remaining four examples come

from Acropolis trench 7 in Complex Ia, cat. no. 766.9 (Figure 469.26), cat. no. 763.13 (Figure 469.18), cat. no. 648.13 (Figures 481.11, 483.26) and cat. no. 694.9 (Figures 479.33, 481.5) all belonging to Bronze Age 4-Middle Bronze deposits.

Judging from the small number of finds, bone working cannot be considered an important Aphrodisias industry, or if it was, few artifacts have survived.

TABLE 81. FREQUENCY OF OCCURRENCE OF METAL

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	070
Trench							-									
Pek 1									3						3	4
Pek 2		1		1	3					1					6	8
Ac. 1-2																
Ac. 3							1	4	3			1			9	12
Ac. 4								3		2					5	7
Ac. 5											5	12			17	23
Ac. 6									1					1	2	3
Ac. 7										5	3	13			21	29
Ac. 8																
Ac. 9														10	10	14
K-1																
K-2											-					
Total		1		1	3		1	7	7	8	8	26		11	73	
9/0		1		1	4		1	10	10	11	11	36		15		100



274. Metal artifacts of the Late Chalcolithic, Pekmez trench 2.

- 1. 1598c.12 pin, Level VIIIA
- 4. 1516.1 wire, Level VII
- 2. 1539.2 awl, Level VIIB
- 5. 1516.2 bead, Level VII
- 3. 1550.1 pendant (?) Level VII

D. METAL

Metal cannot be said to have been in regular use at Aphrodisias during the prehistoric periods. Only 73 objects were recovered, and most of these were found in the period of the Middle Bronze-Mixed deposits. Table 81 gives the frequency of occurrence for metal.

The earliest presence of metal is in Pekmez trench 2, Level VIIIA of the Late Chalcolithic 1 period, where a pin, cat. no. 1598c.12 (Figures 274.1, 379.36, 385.49) was found. In Levels VIID and VIIC of Pekmez trench 2 of Late Chalcolithic 2, no metal objects were recovered, but in Level VIIB ascribed to Late Chalcolithic 3, an awl, presumably of copper, was unearthed. It is cat. no. 1539.2 (Figures 274.2, 394.27). In Level VII of Pekmez trench 2, ascribed to Late Chalcolithic 4, three objects were found: a wire, cat. no. 1516.1 (Figures 274.4, 400.21); a bead, cat. no. 1516.2 (Figures 274.5, 400.22); and a possible pendant, cat. no. 1550.1 (Kadish 1971:131, ill. 8; Figures 274.3, 400.15). Kadish (Ibid. 127) refers to this piece as a « small broken lead figurine (?) ».

In order to determine the ore content of the earliest excavated metal artifact, the above-mentioned pin was sent to Ankara for analysis during the 1979 season. In 1982 it was brought to New York where it was examined by Carlie Cleveland and Robert Koestler with Energy Dispersal Analysis (EDS). The results of the work are as follows: Energy Dispersal analysis (EDS) was performed in a Scanning Electron Microscope with EDS attachment, on a cross-section of the pin.

165. The author wishes to gratefully acknowledge this special analysis by Carlie Cleveland and Robert Koestler. The composition is listed below:

98.5 %	±	10 %	
1.3 %	0.5 % ±	50 %	
0.3 %	0.3 % ±	100 %	Trace amounts
0.1 %	0.1 % ±	100 %	
	1.3 % 0.3 %	1.3 % 0.5 % ± 0.3 % 0.3 % ±	1.3 % 0.5 % ± 50 % 0.3 % ± 100 %

The limit of detection of the equipment is 0.1 % under ideal conditions. Sb and Fe are at or near the detection limit, therefore these values are to be viewed with caution

No inferences with regard to metallurgy can be made on the basis of analysis of a single object. It is hoped that further tests of the prehistoric metals will be a regular part of the on-going investigations at Aphrodisias.

This « bronze » pin is roughly contemporary with the metal hoard of silver and copper artifacts found in a jar in Level XXXIV at Beycesultan (Lloyd and Mellaart 1962:80-283; pl. 11). This suggests the use of metal in this area at least by the Late Chalcolithic 2 period. Further South, at Bağbaşi in the Elmalı Plain, small metal objects of the same and earlier periods have also been found (Eslick 1978:185). 166

Recovered from Acropolis trench 3, Complex II Room 3, ascribed to the Bronze Age 4 period, is a molded flat metal axe or chisel, cat. no. 213.1 (Figures 431.60, 432.9). This is a popular form during the Bronze Age. Parallel shapes can be found from the Vano hoard at Poliochni on Lemnos (Renfrew 1972: Pl. 18.1, particularly the first three from the left). Schmidt published two examples from Troy II (1902: nos. 5832, 5836), and in Troy III there are two more that belong to this class reported by Blegen et al. (1951: Fig.47 nos. 33-235, 37-773). This tool may fit into Branigan's chisel Type IIIa (1974:25). At Beycesultan there is nothing comparable except for an flat axe found in Level X (Lloyd and Mellaart 1962: Fig. 9:7, Pl. XXXV.1). For other correspondences at Thermi, Tarsus and other sites, see Lloyd and Mellaart (1962:286 notes 6 and 7).

Moulds: Of interest is the one (or possibly two) mould for casting bronze objects found in Acropolis trenches 4 and 5. Cat. no. 352.2 (Figures 247.2, 436.61) of Acropolis trench 4 belongs to the Bronze Age 3 period. This object of schist may have served to cast axe heads. A possible sandstone mould(?), cat. no. 529.2 (Figure 450.25), belonging to the Bronze Age 4-Middle Bronze period is so badly damaged that its original shape is difficult to reconstruct.

^{166.} A bronze or copper awl was found in the remains of a burnt house. Eslick (1978:187, 190), reports findings that include a bronze or copper pin, plus the top of another bronze or copper awl or pin.

I found slag fragments to appear with some regularity in the pottery collection containers throughout the later Middle Bronze-Mixed deposits, but did not catalogue them. EDS analysis of these pieces might be of interest. Cat. no. 9A.3 (Figure 429.7) should be tested to ascertain its components; it is placed within a Bronze Age 4 context. On the basis of the modest evidence presented in the foregoing discussion, it is possible to suggest that the Aphrodisians were casting a limited number of metal tools by the middle of the EB IIIA period.

Gold and Silver: Deserving particular attention are the 24 plain gold leaf beads and two silver bracelets associated with the pithos burial of a female in Pekmez trench 1. The bracelets, cat. nos. 1401.14a and 1401.14b (Figures 368, 372.3,4, 374.15,16) are in excellent condition.

Their incised decoration of seven or more zoned incisions is almost identical. It is difficult to find parallels for these objects.

The gold beads, cat. no. 1401.19 (Figures 368.2, 372.2, 374.14) are cylindrical. Most of them are well-preserved but a few have been crushed. They do not appear to have been soldered, but are simply rolled into shape. Parallels can be made with similar beads from Troy III (Schliemann 1881:497, no. 892).

It is not surprising to find gold in Bronze Age contexts at Aphrodisias. Strabo (XIII, p. 591) places gold mines in the Troad and in Phrygia (x, p. 473). Silver, if our bracelets are silver, is rarely found in the Bronze Age. It would be of interest to have these metals tested to determine more accurately the ore content of these artifacts.

Comments: The geology mineralogical Studies of Anatolia are limited. The western zone is largely uncharted territory; James Muhly (1973) noted a lack of known

metal ores in western Anatolia. A few copper deposits were reported by Strabo (XIII 1,51), and by Schliemann (1881:223), and are also referred to by Sperling at Kum Tepe (1976:356). In the course of the survey of the Dandalas Valley, J. Bordaz (1962:17) reported visiting an outcrop of metal ore, which he tentatively identified as manganese. Its location was 600 m East of the source of the little river Vargal, about 2.5 km South of Geyre. In the same survey Bordaz found in a ravine 500 m North of Eymir, an iron mine that had been exploited, but it is not known when these sources were worked. Native copper and ore, however, were also available in southeastern Europe from Transylvania and Bulgaria.

C. Renfrew has studied the important cultural implications of the spread of Late Chalcolithic metallurgy. He postulates that there was a shift from self-sufficient villages to a reduced self-sufficiency of these communities (1972:308-313) — due to the fact that metal would have to have been imported, bringing about dependency on trading contacts and perhaps even on a network of trade. From the small sample recovered at Aphrodisias, it appears that the site was off the beaten track of the metal trade. It is noteworthy that many of the known tools from the Late Chalcolithic and the Bronze Age — awls, needles and knives — are generally associated with leather-working (Branigan 1974:135). In the early stages of metal working, small copper nuggets were cold-hammered or they were heated and beaten into shapes. Typical of the tools of this period are needles, fish hooks, beads and pins, such as those found at Aphrodisias.

Discovered in a deposit of Lydian pottery was a sloping shouldered knife or dagger fragment with a straight short tang, cat. no. 6.200 (Figure 466.36). The object is corroded and fragmented, and its metal tentatively identified as iron. Its implications are discussed by William E. Mierse (infra, p. 422).

E. POTTERY

In this section we shall try to achieve three simple objectives:

- 1) To examine several of the more important ceramic concepts of prehistoric Aphrodisias;
- 2) To set these ceramic concepts against the periods of time that they were in use;
- 3) To derive a holistic concept of the Aphrodisias corpus of ceramic traits as a frame of reference for the ceramic industry for both the site itself and for its interrelationships with other sites.

In the following pages the processes and mechanics that governed these studies are presented. Included here are the methodologies, computer use, as well as brief remarks concerning local clays, replication experiments and visits to local potters. This section concludes with the thin-section analysis of Aphrodisias wares by Richard Coghlan.

The following section lists and illustrates the results of the Aphrodisias prehistoric ceramic type series. Herein are presented significant ceramic factors by period, clusters of types, the numerical relationships between them, and the numerical breakdown of other variables including liquid and plastic decoration. The analysis of Lydian ceramics and the « Carian » jar are given separate study for they fall beyond the scope of the type series. Other ceramics including spindle whorls, loom weights and distinctive forms are then briefly discussed. This subdivision comes to a close with a brief-by-period ceramic summary. Part 5 concentrates on inter-site alliances — a chronologically-oriented ceramic analysis.

Procedures 1967-1974

During the years of original excavation, 1967-1974, the pottery was supposedly washed, sorted, and stored in labeled wooden collection containers identifying the trench, unit, and the date of excavation. From the extant records a rudimentary classification system had been devised, which was undefined in the field notebooks and which the records at hand indicated had not been put to extensive use. A number of vessels had been reconstructed, labeled and catalogued, but none had been systematically drawn or documented. When ceramics were catalogued or deemed important for special study, they were pulled from their sub-assemblage and marked with

their unit attribution. In consequence, these ceramics were not easy to locate for often they were stored in several different places.

Procedures and Computer Use 1975-1982

In 1975, the present study was initiated with its primary goal being to analyze the ceramic evolution of prehistoric Aphrodisias. The research situation, however, was complex. Assuming that none of the pottery had been discarded, the completeness and purity of the samples had to be ascertained. 167 The picture was slightly confusing for there was difficulty in locating all of the components of each specific trench, level or unit. For example, the ceramics from the excavations of Acropolis trench 7 were found in three different storerooms; sometimes there were as many as five containers for each unit excavated; most of the fragments were stored in their original collection containers, but there were others in containers reserved for diagnostic fragments (a vessel part that can be identified: such as a rim, handle, base, etc.), thus some of these fragments were stored in still other containers or in plastic or paper bags, whereas nearly complete pottery forms had been casually set on shelves; and, as mentioned above, pieces to be catalogued had been placed with the already catalogued material, stored in yet a different place.

Upon investigating the unit collection containers, we noted that some of the containers appeared to have been pre-sorted, i.e., some of the sherds had been marked with a unit number in ink or with chalk (probably for reconstruction, photographs, or for drawing). Surely the excavators had not mixed sherds from different units, but there was a strong possibility that fragments within two containers from the same unit had been mixed. We reasoned that if the ceramics from each excavation unit could be recaptured and reassembled, we would have as complete a sample as possible.

How were we to problem-orient the research? Information about the materials' location, amount, extent of pre-sorting and the numbers of reconstructed and catalogued pieces had to be ascertained. We undertook an inventory of the storeroom contents, and gave each container an independent serial number. The results were significant there were well over 1000 containers, each holding an average of 200 fragments. The volume of material was staggering. We then studied the inventory to gain a rough idea of the amount and distribution of

^{167.} It must be stressed that excavated pottery samples should remain « pure » until they are classified so that statistical tests are valid. Pottery should be classified before it is restored, drawn or catalogued.

material according to trench. A random sample 168 of stored containers was made as a basis for the study. Some 150 containers were visually examined to assess both the quantity of material and to judge if they had been presorted. A few containers had neither been washed nor sorted (especially those from Pekmez trench 1 and the Kuşkalesi trenches); in addition to the pottery they contained bone, smoothed and chipped stone tools which had been neither examined nor catalogued. We assumed that these containers represented a pure sample, and gave them priority study.

We determined that a comprehensive ceramic study was essential, for the ceramics were the major part of the material culture of prehistoric Aphrodisias. The study strategy was governed by three practical factors: no additional labor expense could be involved, the staff would have to be limited, and a time-saving approach had to be conceived, for years could not be devoted to the project. The results presented here are the working of individual parts of the overall research scheme.

Interdependently, a preliminary analysis of the stratigraphy was conducted. After an initial assessment of the complexities involved, it was reasoned that the stratigraphy would require a prolonged analysis. Therefore we could not rely on the stratigraphy as a base factor for the ceramic study, but would have to use the pottery from the excavated units as the base starting point. Alignments between units might then be drawn according to variable sets. The assumption was that the characteristic variables of each unit would demonstrate a coherence which could be matched with like variables from other units. Thus, handmade black-slipped wares would be found together as would wheelmade gold-washed wares. We also assumed that grouped uniform variables could be tested and that the results might help to provide the key indicators for the stratigraphic analysis.

After the preliminary studies of the stratigraphy were undertaken, we decided to concentrate on the earliest deposits of the site. (Ceramic traditions of Aphrodisias had been tentatively linked to the Chalcolithic period through deposits of Pekmez trench 2, Kadish 1969:65). From 1975, we created the type series and analyzed 100 % of the units of the earliest ceramics. Additional remarks about these processes are in order.

When the study began, certain questions were asked of the data: were there common traits that were shared by this pottery? or was each fragment a unique piece that was marked more by differences that existed between it and others? Many archaeologists stress the common qualities of pottery; others emphasize the differences.

Prehistoric Aphrodisias spanned over four millennia and a system had to be devised that would capture the evolution of the potters' art. The first step was the selection and organization of data relating to the ceramic and the construction of a broad-based system that would capture the long development of pottery. Attention turned to the qualities observed in the ceramics that we had analyzed in the random sample. Distinctive primary physical differences, including vessel part, shape, manufacture, and fragment size were of importance as were selected secondary characteristics such as fabric, color, inclusions and decoration. A type series was created that would provide as comprehensive, diagnostic and objective analysis of ceramic variables as possible. It incorporated 30 variables which were geared to the processing of small fragments that had clearly recognizable elements. The parameters of each aspect of our analysis was systematically described with as much precision as possible. 169 Unfortunately we found few complete shapes and almost as few could be reconstructed for complete profiles. Our approach dealt in part with manufacture, 170 but often these could not be determined because of fragment size or because the techniques were not evident. Therefore more emphasis was given to decoration and shape analysis. With these study objectives, we proceeded on the operating premise that any group of units that produced a statistically high proportion of a decorative element or a shape family would be indicative of a specific cluster of traits and models.

Traits were classified in a variety of ways, using the system that had been published by the writer (Joukowsky 1980:332ff.). Without doubt classification schemes are subjective, but every attempt was made to be as objective and scientific as possible. For example, inclusions were

Types

^{169.} This was performed using Anna Shepard's analysis (1954).

^{170.} As contrasted, for example, with the method used by H. J. Franken (1974). Franken maintains that shape analysis and comparisons made on the basis of shape are unsound and non-objective. He has proposed a method based on manufacturing techniques; this is particularly difficult with handmade wares. His sample totals only 936 fragments. We follow the course outlined by Shepard (1954:251) who notes: « In order to deal with comparable form classes when describing characteristics of contour and proportion, it is desirable to identify functional groups as far as possible. Criteria for establishing functional categories of prehistoric pottery are meager. »

^{168.} See L. Binford (1964:29, 425-41), also R. F. Heizer and J. A. Graham (1967:181-97).

identified and measured for shape, size and density in the fabric, and colors were aligned with the Munsell chart. Then I gave subjective verbal descriptions to wares, type series shapes, and function. Once the traits were organized and the numbers accumulated, there was enough evidence for « types » in which broad aggregates could be classified. An attempt was made to reduce large numbers of traits into a relatively small and manageable number of basic and independent variables. Once these variables demonstrated their presence, part of the potting tradition could be captured. After all the variables were recombined, I reasoned that the picture would be as clear as any could be.

The type and variable approach to pottery has as its goal the explanation and understanding of ceramics in relation to the site. The traits that were emphasized were manifested numerically, firstly in relation to each other, and then once the stratigraphic analysis was completed they were aligned with it. As presented herein they should serve as a consistent pattern of the potters' action and reaction to the materials at hand, the « mental template »¹⁷¹ and the environment.

The advantage of this analysis was that it allowed the classification and control of a number of variables over an unwieldy pottery corpus. No universally acceptable set of study methods has been agreed upon by archaeologists, ¹⁷² and critics of this variable system believe that the integration of factors or traits is ignored, and that they are not worked into a single entity (Joukowsky 1982:248). Nevertheless, archaeologists have been stimulated to work within a variety of frameworks, and a large number of theories and models have been constructed. At Aphrodisias there was little alternative but to devise such a system.

Computer Use

At the time I initiated this project, the technology of micro-computers was in its infancy. It was obvious that the computer could handle the thousands of fragments and their variables more rapidly and dependably than any other system; in addition it could be a particularly helpful tool for data retrieval because it allowed the control, indexing, and storage of large amounts of information, including the spatial information provided by the stratigraphy and the qualitative and quantitative patterning provided by the sherds themselves. Projecting the probable use of the computer, I designed for field use an 80 column computer convertible input form (Joukowsky 1980:337, Fig. 14.3). A preliminary statement, « Computer Use in Pottery Studies

at Aphrodisias », was published by the author in the Journal of Field Archaeology (1978:431-442). In 1975 the data from the first season's work was key-punched, a program was designed and the results indicated that the program worked. Although the early results were promising, these first attempts were not entirely successful due to the costs of programming, key punching and the high rate of error.

The program had to be shelved until 1980 when a fresh start was made with the aid of Susan S. Lukesh of Brown University. Programs were written, re-evaluated and after weighing the advantages and disadvantages, the data were reformulated for the statistical software package, SPSS. ¹⁷³ Firstly an internal pottery sequence evolved, and once the stratigraphy had been composed, a reassessment of the collection was undertaken by setting the ceramics against the 13 periods represented at the site. ¹⁷⁴ The results were analyzed with an IBM 370/58 which was available at Brown University. Acknowledgement is due to Brown University and particularly to Susan S. Lukesh for her continued advice and assistance given to this program.

Methodology

Each pottery container was registered on the input form, with the information provided on the container itself (area, trench, unit number, date, and excavator's number).¹⁷⁵ Each container's ceramics was then visually examined and sorted by size, fabric, color and type. Within each one of these variables, fragments were subdivided by manufacture, texture, inclusions, hardness, core color, and decoration. I then systematically reviewed and reanalyzed each group to define function, colors of ware and core with Munsell readings,¹⁷⁶ inclusions with the Wentworth scale¹⁷⁷ and an adapted use of Moh's scale for hardness.¹⁷⁸ Distinctive components for each group that

- 173. N. H. Nie, C. H. Hull, J. G. Jenkins, K. Steinbrenner, and D. H. Bent, SPSS Statistical Package for the Social Sciences, 2nd ed., New York, McGraw Hill, 1975.
- 174. Levels and units within Late Chalcolithic 1 an 2 have been given separate statistical discussion (Joukowsky 1982:374ff.). Typegroups and families are emphasized here. The reader interested in the statistical development of any one type should contact the author.
- 175. Joukowsky 1980:301.
- 176. Each fragment was snipped with small pliers and then compared to the Munsell Charts for core colors.
- 177. Shepard (1954:118). The quality and size of temper was assessed megascopically with a Bausch and Lomb 7x lens equipped with a millimeter scale.
- 178. Descriptions of hardness are not accurate and tests are highly theoretical. This quality was related to Moh's Scale (Shepard 1954:115). It is hoped that refiring experiments will be carried out to determine whether there is any relationship between hardness qualities, firing temperatures, and ware types.

represented a shape type were thoroughly annotated with a possibility of 30 mutually exclusive factors, and were measured and drawn on a 1:1 scale. Type models were placed in a reserved area in the on-site pottery laboratory and were utilized for the classification of types and other variables. When new forms appeared, they were numbered, drawn, photographed, and added to the type series.

The classification of categories was based on the premise that each piece of pottery was created to perform a specific function and that function and design are interrelated factors. The design attributes assigned to each type were directly related to its ware-fabric, decoration, shape, size, texture, stance, thickness and individual characteristics dependent upon the methods of manufacture. Each type was numbered and divided into broad, mutually exclusive classes of function. The classes included rims 179, of bowls, cooking pots, jars/jugs, pithoi, and bases, handles, spouts, disks, and so on. When no function could be ascertained, fabric and manufacture determined the type. Thus a hierarchy of ceramic traits evolved and these components and their descriptions formed the basis for the Aphrodisias type series. This information was stored in a loose-leaf binder for on-site classification. Every fragment was counted and the variables recorded. 180 The comparative typing of each sherd was based on an educated judgment following individual examination. An uncontrolled selection of all type ceramics from the field campaigns were individually treated in the same manner. If a fragment did not fit into a specific type or if the characteristics were ambivalent, it was placed in the miscellaneous category.

At the end of the 1981 season, these documents were assembled and brought to Brown University where they were key-punched onto cards and then transferred to magnetic tape. Once the stratigraphy had been analyzed, a master printout for each unit, trench and period was made, giving the totals of factors selected from primary analysis.

- 179. This system of classification rests primarily on rim type for the various classes of vessels. In the Figures, most of the elements of the type series have been represented. (Those that are not, can be found in Joukowsky 1982). These drawings generally register only the form, however, various methods of manufacture, and decoration such as slip and burnishing are recorded in the Catalogue. (See « subsets » in Joukowsky 1980:332-33.)
- 180. When the decision was taken to focus our study on the earliest excavated levels, the type series, methods of taxonomy, and use of the computer encoding system continued to be serviceable. Naturally such an in-depth study required the inclusion of many additional forms to the type series (see the abbreviations for a complete listing of coded alphabetic prefixes).

Ware Fabrics

The major problem in dealing with inward comparative pottery analysis is that most studies are somewhat limited to a discussion of the shape and decoration while being forced, with few exceptions, to discuss wares or fabrics only in the broadest sense. This is the result of a lack of specific definitions in published reports of this nebulous area. Unfortunately, there is no one meaning that can be attached to the terms « ware » or « fabric ». Nevertheless, this concept is important for it behaves as an interdependent factor.

For the Aphrodisias type series, I established a complicated set of fabric variables by the subjective visual analysis of texture, temper size, shape and structure of the particles, density, core color, surface colors, weight, fragment thickness, stiffness of the clay, and general appearance. These factors were separately documented under fabric as well as within the independent variables assigned to them. Thirty-eight ware types were identified in the processing of the Aphrodisias type series. Unfortunately time and financial support precluded the documentation of all the sherds, but we were able to process 72 % of the fragments and to distinguish among their wares. The seven most common were classified under two broad headings, argillaceous and arenaceous, and are briefly discussed below.

CATEGORY

Fabrics: Argillaceous Code Arenaceous Code
1) Thin Plain (PT) 5) Gritty (CH)
2) Plain Medium (PM) 6) Very Coarse (SX)
3) Plain Thick (PL) 7) Thick Coarse (PS)
4) Thick Coarse (PX)

There is a marked difference between these two categories. Argillaceous wares are characterized by a clayey consistency; the basic biscuit is composed of clay. Arenaceous fabrics are lean and rough to the touch, because sand-sized mica schist particles appear to form more than half of the raw material. Arenaceous wares are commonly referred to as coarse wares. It is probable that argillaceous wares are those that most Anatolian archaeologists refer to as « fine ware. » Plain Thick (PL) or Thick Coarse (PX) wares may also fall into the coarse ware category. Fragments were classed on the basis of their similarities to these wares; model sherds characterizing each of the biscuits served as type specimens for the analysis.

A. Argillaceous wares (Figures 275.1-4)

1. Thin Plain fabric (PT). As a rule these wares are no thicker than 0.005 m, and they are better levigated than

the other components of this class. The potter made a concentrated effort to liberate the clay from grit over and above the normal technique. These fabrics can be conveniently discussed under two subtraits, both dependent upon biscuit and color: « Thin Plain a » (Figure 275.1) and « Thin Plain b » (Figures 275.2-3).

Thin Plain a wares are similar to Hacılar ware types. The fabric holds few vegetable fibers and the temper consists of a uniform quantity of tiny pebbles and granular-shaped temper. These wares clink when hit, and the walls are carefully worked. They appear to be evenly built with their smooth surfaces often slipped and hand-burnished or they are left unslipped and are well-smoothed. The excellent burnish is continuous, so continuous that in some cases it is impossible to see its lines. The general appearance of these wares are different from those in the Late Chalcolithic deposits. For example, the exterior colors of these wares are brighter in comparison to others found at Aphrodisias in the Late Chalcolithic. The most usual color is brown, but there are a number of red, or red-brown-black mottled pieces. Usually they exhibit a jet black inner core that extends to the surface if mottling is present. Of the two ware types, these are heavier because of the compactness of the clay. A typical cross-section of a PTa fragment is illustrated in Figure 275.1.

The correlation between the Aphrodisias and Hacılar wares was reinforced when a comparative analysis was made with the Hacılar pottery. Given megascopic examination, the two fabrics were identical. Further, there were no obvious distinctions in shape, surface color, and treatment, which suggests validity to their correspondences. The mutually interdependent qualities of the fabrics resulted in a correlative identification between our Level VIIIC deposits with those of Hacılar VII. Fragments of this kind of fabric were common in Aphrodisias Level VIIIC of Pekmez trench 2.

Thin Plain b wares are coarser and lighter in weight than those of Thin Plain a. The major differences between them are in the preparation of the clay, the techniques of levigation, surface treatment, and firing. There are often marked irregularities in wall thickness for these wares are not as well levigated as Thin Plain a fabrics. In the illustration in Figure 275, their differences can be noted. The color of Thin Plain b is generally dark-grays, dark drab grays and blacks predominate suggesting that these were kiln-smudged. Cores are black and more often they are completely, evenly black with no distinction in color between the exterior, the interior, and the core of the fragment. There are, however, a number of dirty buff, light red and variegated fragments. In the Late Chalcolithic, vegetable matter is also found in the fabric, it can be large, with a range of temper sizes present. These wares may be slipped and burnished or may be left unslipped.

There are a smaller number of this ware type than the more often used Plain Medium fabric; the distinguishing characteristic is wall thickness.

2. Plain Medium fabric (PM). Thicknesses range between 0.005 and 0.01 m. Commonly used at Aphrodisias throughout all levels are Plain Medium fabrics (Figure 275.4). The bulk of this ware in the early Late Chalcolithic deposits is colored gray and often found full of grits. It is not as well-levigated as Thin Plain a, and closed shapes are frequently packed with temper. The fabric is hard, but sometimes exfoliation occurs associated with forms that are neither smoothed nor burnished. More common are the slipped and burnished fragments. Differences found are color, manufacturing and finishing techniques, and the amount of temper. The fabric is homogeneous and indigeneous to Aphrodisias. At the end of Level VII in the Pekmez trench 2 deposits, it appears that the Aphrodisias potters changed their manufacturing techniques — a change due in part to an alteration in both firing and levigation methods. We documented, by other variables the fabric differences and the range of ware colors within this variation of Plain Medium ware.

Although the resemblance of the Medium Plain wares in the Late Chalcolithic to those of Beycesultan is strongly marked, the distinctions are worth noting. At first sight these sherds appear identical, but when examined megascopically, differences become apparent. Temper is numerous, but the Aphrodisias fabric contains less organic material and is slightly less spongy in appearance. More schist-fragmented temper is present in the Aphrodisias fabric. Yet the similarities between the two potting traditions are striking; the color is the same, they weigh about the same, they both have an uneven surface structure, and the irregularity of the burnish is identical. It is obvious that the same techniques were practiced throughout the Upper Maeander Valley.

3. Plain Thick fabric (PL). The most characteristic aspects of this fabric are 1) weight, 2) thickness (0.01-0.015 m), and 3) the range of colors associated with it. Often thickness was dependent upon function, and these thick wares are probably to be associated with large vessels, i.e., storage jars and pithos forms. This is a hard and heavy ware which is distinguishable from the other argillaceous-based fabrics in that the colors are generally lighter, ranging from gray-to-brown-to-salmon. A cross-section typical of this ware is illustrated in Figure 275.8. There are obvious large inclusions and it is questionable if the clay was thoroughly prepared. It appears that the indigenous temper in the clay was ignored and that only the extra large grits were either pounded down or picked out of the clay.

Comparatively this fabric has great tensile strength. Besides the stoneware of the later periods, it is the hardest pottery in these deposits. These wares show signs of having been given a cursory smoothing or they are left plain. Cores are rarely the same as the exterior or interior colors. Most fragments are undecorated and show sloppy workmanship in comparison to the aforementioned fabrics. The clay is rougher in texture and sometimes temper protrudes. Tempering materials are more abundant and are both coarse and fine; pebble and granule, and often scraps of vegetal matter are present. The biscuit is not as compact as Medium Plain wares (Figure 275.4).

4. Thick Coarse fabric (PX). This fabric is crumbly and has a thickness ranging between 0.015 and 0.02 m. The ware is associated with baking tray shapes. Large organic and inorganic materials were added to the sponge-like clay which markedly changed its plasticity. Its cross-section is illustrated in Figure 275.9. A different temper is found in these wares consisting of limestone, quartz, mica schist and vegetable matter such as straw and husks. Small rounded pebbles are also contained in this very coarse fabric. Upper surfaces were smoothed, but lower surfaces are left rough and plain. Colors are often light, ranging from a light reddish brown (10YR6/4) to a light red (5YR6/6). Cores are often lighter than the exterior surface, and they are rarely slipped.

B. Arenaceous wares

- 5. Coarse ware. This is also known as cooking pot ware and the fragments have a thickness between 0.00-0.01 m. It is often left poorly finished and is sandy to the touch. Mica schist and quartz grits are usually present. Fired colors range between a reddish yellow (5YR7/6), reds (2.5YR5/8), red browns (5YR5/3 5YR3/2) and medium to dark grays (2.5YRN3/). Cores are usually black.
- 6. Very Coarse fabric (SX). These fabrics are generally light in color and are 0.01-0.02 m in thickness. They are characterized by their very unrefined roughness. Quartz and mica schist inclusions of varying grades and sizes make this fabric suitable for storage jars and domestic vessels. This fabric is illustrated in Figure 275.6.
- 7. Thick Coarse fabric (PS). Generally this ware is associated with baking trays. It is smoothed, but never burnished, and it breaks easily. The fired colors of Thick Coarse wares are generally a light yellow-brown (10YR6/4) or deep red (2.5YR3/4), and their cores are often even. They have a sponge-like texture and made to resist high temperatures. There appears to be only enough clay added to this mixture to act as a binder; a fair proportion of organic and inorganic inclusions make the composition of this fabric appear unrefined. It is illustrated in Figure 275.7.

The foregoing descriptions have introduced the most important fabrics in the Aphrodisias type series. Each of these fabrics has subdivisions, which when found were encoded. In the site report of Deir 'Allā, Franken (1969: 67-68) contends that the terms generally employed by Palestinian archaeologists such as « well-fired », « well-levigated », and so on, cannot be detected by the naked eye. We counter that with a sherd-by-sherd comparison, certain superficial factors can indeed be analyzed.

Clay

The Aphrodisias potters dug the raw clay in its natural state from the decomposed rock deposits not far from the site itself, possibly even at its base. ¹⁸¹ By hand they laboriously removed twigs, leaves, roots, stones, and other impurities, and then dried the clay in the sun. Sun drying served the potter by removing additional impurities of vegetable matter, a process known as « weathering » (Kelso and Thorley 1943:92-93). When dried the clay chunks were broken up, and clays destined for finer wares may have been sieved or levigated in water. Often we find these sherds fracture readily along coil lines and the fired paste indicates the clay was poorly wedged as lamination, contortion and warping often are apparent.

Manufacture

The early Aphrodisias potters hand built the pottery by either pinching or coiling. Construction of the vessel was made by the use of the superimposition of modelled clay coils. After the desired shape was realized, the coils were smoothed, on both the exterior and the interior so that the ware would be uniformly thick. As break lines and angles usually follow the pattern of manufacture, we noted few ceramics to have been piece-formed (the formation of separate parts of the vessel which are joined together). Large jars are an exception to this. However, small crude irregularly-shaped bowls and cups (Figure 282) were simply pinched into shape. Often impressions from the fingers or palm of the hand could be detected, and the surfaces tend to be uneven and sometimes lumpy, particularly in coarse closed forms. The traditions of manufacture appear to be the same throughout western Anatolia during the Late Chalcolithic. (This judgment is based on first-hand observation of fragments housed in various Turkish museums).

Later pottery of the Early Bronze Age continues to be handmade; the wheel is introduced in the Bronze Age 3 at Aphrodisias, but it appears to have been used for forms like the large platter or plate that is a horizon-marker from Troy IIg. Finer forms continue to be handmade until the

^{181.} Present day local potters reported that they continued to rely on clay sources in the Karacasu area.

Middle Bronze Age at Aphrodisias when wheelmade wares become more common. 182

Firing

It is not known if the Aphrodisians had a pottery producing center for their own consumption. No kiln has yet been found which would prove how firing was carried out. As a matter of fact, no kilns are known from western Anatolian Bronze Age contexts, therefore, controlled reduction is probably not a possibility. These ceramics were probably fired in pits to temperatures around 750-850° C. Unfortunately the scope of this study has not included refiring experiments so that original firing temperatures could be obtained.

It is difficult to assert how the characteristic black core of the Late Chalcolithic wares was created. Smudging is the most often term used for these wares. Smudging is the result of firing in a smokey atmosphere where partial reduction allows carbon deposits to remain in the pores of the fabric. A lack of oxygen in the reduction process leaves the iron oxide constituent of the clay in its ferrous or black state. Only when oxygen freely combines with the clay does the iron oxide content turn red or to ferric oxide. The Aphrodisias wares could have been in a reducing temperature or could have achieved incomplete oxidation by low firing or by brief firing periods. Sometimes full oxidation was achieved; this is evidenced by





275. Aphrodisias ware-fabric types.

- 1. PTa Thin Plain type a
- 2. *PTb* Thin Plain type b (example 1)
- 3. *PTb* Thin Plain type b (example 2)
- 4. PM Plain Medium ware
- 5. CH "Gritty" ware
- 6. SX Very Coarse ware
- 7. PS Thick-Coarse wares
- 8. PL Plain Thick ware
- 9. PX Thick Coarse ware
- 182. Theories based on ethnographic data regarding who performed potting in ancient societies are relatively recent (Nicklin 1971: 13ff; Ochsenschlager 1974:150; Krotser 1974:132-33; Balfet 1975: 162-63). They are useful for studying economic and social phenomena. The theories of pottery production may be considered an extension and broadening of the analysis of ceramic studies found in the traditional stream of archaeological thought.















even cores. In the examination of cores, the computer encoding included the simple notation whether the core was even or uneven, uniformly black, gray, or lighter than the surface of the fragment. No measurement was taken of the discolored area. When the biscuit was oxidized, the core was even, but when the core was uneven, the indications are that it was reduced throughout, reduced on only the outer and inner surfaces, or reduced only in the core (Joukowsky 1980:373-374). Uneven firing is often found, particularly in the early periods of the Late Chalcolithic, but in the Bronze Age even cores are more common, particularly in the Late Bronze period. The majority of Late Chalcolithic wares from Aphrodisias was unoxidized. Therefore sherds with red and buff colors most always have a black or carbon core. In the Late Chalcolithic 3 period, there is a marked change in fabric color suggesting that at this time the potters were experimenting with firing methods. Some wares are found to be fully or partially oxidized which indicates that the quality of pottery manufacture and firing technology was undergoing change. The fired color of the paste results from the clay composition, the temperature to which it is fired, and its position in the kiln. Exterior colors of a fragment may be different from interior color(s), and core colors may differ from both the interior and the exterior. Mottling is common on most argillaceous plain ware surfaces. Predominant colors were encoded — the reading taken just under the exterior surface of the fragment which is generally the most oxidized part. 183

Other qualities such as hardness, fracture, and condition were also analyzed. All of these factors are interrelated to manufacture (Joukowsky 1980:371-374). Rationally, the assessment of pottery implies that the artifact analyst will choose from among a limited range of alternatives, choosing parameters that will maximize the reader's understanding of the site's ceramics. As I contemplated this presentation's results with reference to other ceramic studies, I sought to maximize and quantify only those aspects of the analysis at Aphrodisias that can be related to other sites (found in Joukowsky 1980:371ff.) rather than present the myriad of results that can be obtained from my computer readouts.

Temper, filler, grit: At Aphrodisias, temper was either prepared, or used as it was found in the clay. Inorganic temper consisted of limestone, mica schist, quartz, chert, and ground organic vegetable matter including

183. In the studies of the Sitagroi ceramics, E. Gardner (1979:19-22) states that the Bulgarian and Romanian wares are typically found to be black-slipped. Tests performed on fragments in the Old World Museum at UCLA indicated that firing had been incomplete and gray cores were caused by smudging.

straw, pits, and husks. ¹⁸⁴ The presence of inorganic temper can be found in the thin-section analysis, *infra*. It was often impossible to determine with megascopic analysis if the ancient potter had added the impurities to the clay or decided not to extract them before he used it. An inward comparison of the techniques at Aphrodisias, however, indicated that potters did not extract the ubiquitous small and medium-sized ¹⁸⁵ chert and mica schist temper. This grit was probably indigenous to the clay itself. In the description of wares, the use of the term « inclusions » is used to describe any organic or inorganic material that was added to the clay. ¹⁸⁶

Clays and Thin-section Analyses

In 1978 we collected local clays. Along with two ancient fragments, these were sent to the Middle East University, Ankara, for chemical and X-ray analysis. From this limited examination there was positive correlation among the samples as their compositions were basically the same. These results signal the need for further collecting and testing of various pottery deposits.

Search for Local Clay Beds and Replication Experiments

In addition to the in-depth ceramics study, several other research problems were worked on — including a search for local clay beds and also a replication experiment using local clays. We undertook in the town of Karacasu an ethnographic study of present-day market demands by interviewing potters and studying local market procedures. The interested reader can find the checklist of questions and answers in Joukowsky (1980:393-398, Figure 14-124).

Thin-section Analysis

The application of these separate studies to the concept of wares, although providing a framework that may be useful, omits what many potters would consider the

- 184. The presence of temper and its type were identified and annotated on the computer encoding form. « Texture » in this analysis refers to the quality of the inclusions: their consistency, surface structure, size, and density in the fabric. It is impossible to analyze any of these aspects without thin-section analysis, but certain characteristics were roughly determined megascopically. In the computer analysis, the type of inclusions and the texture were combined in one field. But on the input documents this field is composed of two columns so that temper, texture, and composition could be extended to fit any one of the combinations that may occur. The categories are found in Joukowsky 1980:332-33. In determining the quantity and density of temper, a measured area on the snipped fragment was described.
- 185. Temper size was also reported using the Wentworth Scale. The codes for temper and size can be found in Joukowsky 1980:373.
- 186. The results of these aspects of study are not presented here, but can be recovered from the computer records. Unfortunately, the lack of financial aid for this project left many factors unstudied.

most salient factor in ceramic analysis — thin-section analysis.

Thin-section analysis was performed in 1983 at the Department of Geology, Brown University in Providence, Rhode Island, by Richard Coghlan under the direction of Professor Bruno J. Giletti. ¹⁸⁷ The representative samples selected from the Aphrodisias ware types include fragments with the designations ¹⁸⁸ given in Table 82.

TABLE 82. WARE TYPES SELECTED FOR THIN-SECTION ANALYSIS

Sample no.	Coded Ware Type	Trench U	Unit	Period
1	РТа	Pekmez 2 1	1599d	Late Neolithic (?)
2	PTa	Pekmez 2	1599d	Late Neolithic (?)
5	PM	Pekmez 2 1	1566	Late Chalcolithic 2
7	PL	Pekmez 2	1597e	Late Chalcolithic 1
8	PX	Pekmez 2	1598f	Late Chalcolithic 1
9	CH	Pekmez 2	1566	Late Chalcolithic 2
12	PS	Pekmez 2	l 597e	Late Chalcolithic 1
24	PM	Pekmez 2 1	1458	Bronze Age 4
28	PΙ	Pekmez 2 1	1458	Bronze Age 4
31	CP	Acropolis 8 A	-4,II	Late Bronze
35	PM	Kuşkalesi leve	19	Mixed
39	ST	Acropolis 7 5	552	Mixed
43	PM	Acropolis 9 A	-5, I	Iron Age
87	PI	Acropolis 7 5	571	Middle Bronze-Mixed

The thin-section study that follows indicates that the Aphrodisias workshops fit into one well-defined compositional group of clays. Four fragments fell beyond this group. But what these studies do not confirm is the relationship between Aphrodisias and the Hacılar potting traditions. From the results of the Hacılar VII petrological analysis performed by Stoves and Hodges (Mellaart 1970:142ff), it appears that the Hacılar Group C clays and those from Aphrodisias (both of Late Neolithic date) are very similar. The composition of fragment 1 from Aphrodisias contains muscovite, quartzite and twinned feldspar (as do the Hacılar Group C clays). But opaques, calcite and tourmaline found in Aphrodisias fragment 1 do not appear in the Hacılar Group C wares. However, opaques are found in Aphrodisias sherd 2 as they are at Hacılar. Similar clays and similar potting traditions may be present at the two sites — Hacılar is only 80 km away from Aphrodisias and they probably share the same geological deposits. Therefore the similarities as well as the differences are not as meaningful as the sherd-by-sherd comparisons at the two sites.

A Thin-section Study

by Richard Coghlan

Introduction

Fourteen sherds from Aphrodisias, Anatolia, supplied by Dr. Martha Joukowsky, were sliced and prepared as thin sections for petrographic analysis. These were studied and the results are given in the accompanying tables. In addition, some chemical tests were performed and the results are indicated where appropriate.

No information was made available to the petrographer concerning possible groupings or distinctions among the sherds. This was done deliberately to avoid observational bias. The results are integrated in the following sections.

Summary

The pottery sherds studied may give useful information concerning their provenance. Aggregates of crystals (lithics) prove to be the most characteristic petrographic property. The lithics are probably derived from (feldspar) mica quartz schist, sericite hematite schist, limestone, lime mudstone and mudstone. Lithics from (feldspar) mica quartz schist occur in the following aggregates: mica, quartz and quartz-feldspar aggregates, (mica) quartz feldspar schist and quartz mica schist.

Sherds 1, 5, 7, 8, 9, 12 and 24 contain carbonates in the form of angular limestone lithics and/or rounded limemud lithics. These sherds and also fragments 2, 87 and 31 contain aggregates derived from (feldspar) mica quartz schist (see Figures 276-277).

The relative mineral abundances, morphology of the crystals, and morphology of the aggregates indicate a common origin for all these sherds mentioned.

The lack of lime mudstone clasts in 2, 87 and 31 is conspicuous. Lineation of the mica laths in these sherds is not a strong as in those containing carbonate lithics. These dissimilarities may indicate different pottery techniques. Based on the (feldspar) mica quartz schist-derived aggregates, these pieces probably have the same provenience.

Sherds 28 and 43 lack both carbonate and (feld-spar) mica quartz schist-derived lithics. They contain

^{187.} Warm thanks are due to Dr. B. Giletti and R. Coghlan who put their knowledge at my disposal.

^{188.} Each fragment was broken, marked with a sample number, and its twin stored at the site.

non-carbonate mudstone lithics (see Figure 278). Finegrained and well-sorted textures are characteristic. They probably have a different source lithology from the sherds listed above. There is carbonate in the matrix of these samples as determined by acid reaction.

Sherds 35 and 39 contain mica, hematite and micahematite lithics. These aggregates appear to be derived from a mica-hematite schist. Such a source should not be difficult to locate in the area.

Sherds 28, 43, 35 and 39 have lower crystal/matrix ratios than do those with (feldspar) mica quartz schist and carbonate lithics.

Although correlations may be made using other data collected in this study, the identification of mineral aggregates appears to be most useful. If any large-scale petrographic study were to be done, concentration on mineral aggregates would prove to be more helpful and economical.

Techniques

Sizes of individual crystals and aggregates were determined by correlating the fields of view of the various objective lens with the grains in the field of view. Mean diameters (d) and mean length (l) (for laths) were estimates.

Determining abundances was particularly difficult due to poor sorting and to problems in distinguishing quartz from feldspar. The small grain size and the strained nature of the grains was the cause of the latter. Point counts were not easily done. Relative abundances were determined by considering only the grains with the good optical interference figures. Matrix and pores were excluded in all calculations. It was deemed more useful to know the relative crystal abundances than the absolute.

Mudstone lithics were reacted with acid to determine if they were carbonates.

276. Thin-section analysis.

Sample 5: 2 aggregates;

sericite aggregate (1200 microns), fibrous material, 10 % quartz;

quartz aggregate (900 microns) strained and fractured, other fragments are quartz crystal, aggregates and crystals are set in a clay matrix which appears black.

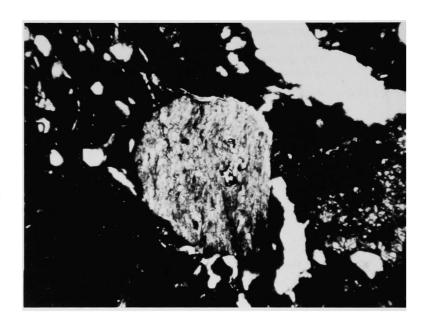
277. Thin-section analysis.

Sample 8: sericite aggregate (1200 microns) fibrous, elongate white areas are pore spaces, stippled material is part of a carbonate lithic; clay matrix appears black.

278. Thin-section analysis.

Sample 28: mudstone lithic (1400 microns), rounded; it has a different clay matrix, contains few or no crystals and may be surrounded by desication crack; this mudstone is non-carbonate, crystals are all quartz; clay matrix appears black.





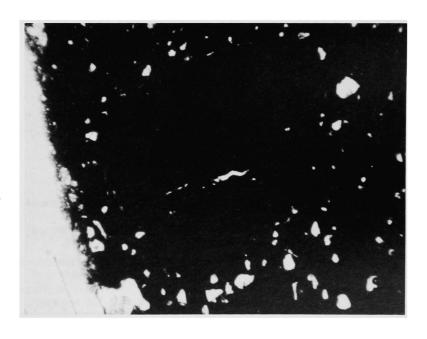


TABLE 83. THIN-SECTION ANALYSIS

Sample	Quartz	Feldspar	Opaques	Mica	Calcite	Tourmaline
# 1	≤ 500 microns 85 % Very angular to rounded strained and	≤ 500 microns 5 % Very angular	≤ 800 microns 3 % Angular	≤ 500 microns 5 % Occurs mostly in altered aggregates	≤ 100 microns < 1 % Occurs in aggregate	< 200 microns < 1 % Occurs in aggregate
# 5	fractured ≤ 500 microns 88 % Very angular	≤ 700 microns 5 % Very angular	≤ 400 microns 3 % Very angular to rounded	≤ 400 microns 5 % Occurs in laths and aggregates	≤ 600 microns < 1 % Rounded	
# 7	≤ 700 microns 87 % Very angular	≤ 600 microns 5 % Very angular	≤ 500 microns D = 200 microns 3 % Rounded to	≤ 500 microns L = 150 microns 2 % Long, thin	≤ 600 microns 3 % Rounded to	
# 8	≤ 600 microns 50 % Very angular	≤ 600 microns 46 % Very angular	Very angular ≤ 600 microns 3 % Elongate and rounded	laths ≤ 300 microns 1 % Long, thin laths and aggregates	angular < 100 microns 1 % Occurs in aggregate	
# 9	≤ 700 microns 88 % Very angular to fractured		≤ 1400 microns 2 % Very angular to angular	ca. 150 microns 5 % Small laths and aggregates	≤ 1000 microns 5 % Angular to sub-angular	
# 12	≤ 1400 microns 85 % Very angular highly fractured		≤ 800 microns 5 % Rounded to angular	≤ 300 microns 2 % Laths and aggregates	< 100 microns 8 % Very angular aggregates	
# 24	≤ 600 microns 95 % Very angular	≤ 500 microns 5 % Very fractured	≤ 900 microns 2 % Very angular to rounded	ca. 200 microns 3 % Laths and aggregates	< 100 microns < 1 % Occurs in aggregates	
# 2	≤ 800 microns 94 % Very angular and fractured		≤ 500 microns 2 %	≤ 600 microns L = 100 microns 4 % Long, thin laths and aggregates	ca. 200 microns	
# 87	≤ 600 microns 77 % Very angular to rounded fractured	ca. 300 microns 5 % Angular	≤ 800 microns D = 100 microns 3 % Very angular to angular	≤ 300 microns 4 % Laths and aggregates		
# 31	≤ 600 microns 90 % Very angular to rounded		≤ 1000 microns 2 % Very angular	≤ 800 microns L = 200 microns 8 % Laths and aggregates		
# 28	≤ 800 microns D = 100 microns 90 %					
# 43	≤ 400 microns D = 100 microns Very angular to sub-rounded	D = 100 microns Very angular		≤ 100 microns Fine laths		
# 35	≤ 150 microns 15 % Rounded	< 200 microns 15 % Rounded	≤ 600 microns 25 % Very angular	L = 200 microns 45 % Laths and aggregates		
# 39	≤ 200 microns 10 % Very angular	D = 150 microns 3 % Angular to sub-rounded	≤ 1500 microns 25 % Very angular mainly in aggregates	L = 200 microns 62 %		LEGEND: L = length D = diameter

TABLE 84. THIN-SECTION ANALYSIS

Sample	Mica aggregates	(Mica) quartz feldspar schist	Quartz feldspar aggregate	Quartz mica-schist	Quartz aggregate
# 1	2 (sericite) 500 and 1400 microns Spatial relationship with quartz			6 ≤ 400 microns Angular	
# 5		5 ≤ 1600 microns Very angular	4 ≤ 2000 microns Very angular		
# 7					12 ≤ 1000 microns 3-4 % mica
# 8	2 (illite and/or muscovite) 1000 and 2000 microns Elongate, fibrous	10 ≤ 1400 microns Very angular			2 600 and 2000 microns < 1 % mica Very strained
# 9	2 (sericite) 400 and 600 microns (from quartz sericite schist?)			1 500 microns Very angular	
# 12	2 (sericite) 500 and 700 microns			16 ≤ 3500 microns With hematite	
# 24		3 ca. 700 microns Angular		2 1300 and 3500 microns Angular	
# 2				4 ≤ 500 microns Angular	5 ca. 150 microns Rounded
♯ 87	3 (sericite) 250, 300 and 500 microns			3 300, 400 and 800 microns	
# 31		3 700-800 microns	4 500, 1100, 1400 and 1800 microns Trace mica	3 600, 800 and 1500 microns	
# 28					
# 43 # 35	ca. 70				
# 3 5	(muscovite and illite) ≤ 700 microns D = 300 microns Elongate, fibrous				
# 39	ca. 30 (muscovite and illite) ≤ 1400 microns D = 400 microns				LEGEND: L = length D = diameter

TABLE 85. THIN-SECTION ANALYSIS

Sample	Mudstone	Calcite aggregate	Hematite Sericite Schist	
s 1	10 ca. 300 microns Rounded	1 ca. 300 microns grains 100 microns Angular		
# 5	ca. 36 ≤ 1400 microns D = 150 microns Small, rounded crystals			
# 7	16 ≤ 1200 microns Rounded			
# 8	ca. 30 = 2000 microns D = 300 microns Rounded	2 1400 and 3000 microns grains 100 microns Angular		
# 9	ca. 28 ≤ 1000 microns Fine matrix; small calcite crystal			
♯ 12	ca. 25 ≤ 1000 microns Rounded	5 400-2200 microns grains 100 microns		
# 24	ca. 41 1200 microns 100 microns	1 ≤ 700 microns Crystals in matrix		
\$ 2				
# 87				
# 31				
# 28	ca. 19 200-1400 microns Elongate, rounded not carbonate			
# 43	1 ca. 1300 microns Not carbonate			
# 35			ca. 42 2200 microns D = 600 microns % hematite = 10-90	
# 39 			ca. 25 2200 microns D = 600 microns % hematite = 10-90	LEGEND : D = diameter

TABLE 86. TEXTURAL RETATIONSHIPS: THIN-SECTION ANALYSIS

Sample	Crystal/matrix	Pore/matrix	Matrix
# 1	0.30	0.25	Strong alignment of laths, pores, and elongate minerals parallel to the edge of the pot; relatively good sorting; pores are long and narrow; slight reaction of isolated grains to HCl in hand sample.
# 5	0.20	0.05	Very strong alignment of laths, pores, and elongate minerals parallel to the edge of the pot; sorted; pores are long and narrow-reaction of matrix to HCl in handsample.
# 7	0.20	0.05	Very strong alignment of pores and laths parallel to the edge of the pot.
# 8	0.20	0.05	Very strong alignment of pores and sparse mica laths; pores are long and thin; reaction of matrix to HCl in handsample.
#9	0.30	0.20	Strong alignment of laths and elongate minerals parallel to the edge of the pot; slight reaction of matrix to HCl in handsample.
# 12	0.30	0.05	Very strong alignment of laths, pores, and elongate minerals parallel to the edge of the pot; reaction of matrix to HCl in handsample.
# 24	0.15	0.10	Very strong alignment of laths, pores, and elongate minerals parallel to the edge of the pot; pores are long and thin; slight reaction of isolated grains to HCl in handsample.
# 2	0.35	0.10	Slight alignment of laths and elongate minerals parallel to the edge of the pot; strong alignment of pores; pores are long and irregular in shape; no reaction to HCl in handsample.
# 87	0.15	0.15	Alignment of laths and pores parallel to the edge of the pot: pores are long and irregular in shape; slight reaction of isolated grains to HCl in handsample.
# 31	0.50	0.03	Weak alignment of laths and elongate minerals parallel to the edge of the pot; no reaction to HCl in handsample.
# 28	0.05	0.03	Alignment of laths, pores and elongate minerals parallel to the edge of the pot; very well sorted; pores are long and thin; reaction of isolated grains to HCl in handsample.
# 43	0.10	0.03	Weak alignment of laths and aggregates parallel to the edge of the pot; strong reaction of matrix to HCl in handsample.
# 3 5	0.08	0.05	Alignment of pores and aggregates parallel to the edge of the pot; pores are irregular in shape; mineral fraction is well sorted; aggregates are poorly sorted; no reaction to HCl in handsample.
# 39	0.03	0.05	Alignment of laths parallel to the edge of the pot; well sorted; no reaction to HCl in handsample.

THE PREHISTORIC APHRODISIAS TYPE SERIES

Attention now focuses on the type series. After sample size is examined, this presentation turns to the definitions of type-groups and types, and the specifics relating to these concepts.

Sample Size

The ceramics studied include a sizeable sample of 62,244 fragments. As the size of the sample for some periods differs considerably, the dependability of these figures is greater for the Late Bronze Age period with 6,609 fragments classified than for the Late Neolithic (?) period with only 471 fragments. Table 87 gives the frequency of ceramic fragments per period and Table 88 shows the distribution according to trench. Table 89 presents an analysis of the ceramic frequencies per period and Table 90 presents a summary of distinctive fragments typed. Of the total number of processed fragments, 29 % (or 17,920) were identifiable as belonging to a specific

type category, and 71 % or 44,324 were body sherds themselves. 189

It should be noted that in the earliest period, Late Neolithic (?), only 1 % of the sherds collected could be classified. In contrast, in the Late Chalcolithic inclusive, sherds represented 77 %. This means that the vast majority of those fragments were identifiable as belonging to a known type and were over 0.03 m in size. The range in numbers is due to the fact that less material was recovered from these levels. It is possible that the lower frequencies of the Late Neolithic(?) makes their ceramics statistically less suited to this overall comparative study. Either there is production cut back during these periods, or not enough material was excavated to provide statistics relative to the analysis.

189. Statistics were maintained for each specific type as well as body sherds.

TABLE 87. FREQUENCY OF CERAMIC FRAGMENTS PER PERIOD*

PERIOD	Total Fragments	Fragments 0.03 m or less	% of fragments 0.03 or less	% Total Fragments typed
LN (?)	471	38	8	92
LCI	13364	6240	46	54
LC 2	9002	3171	35	65
LC 3	9989	3516	35	65
LC 4	3332	754	23	77
BA 1	841	11	1	99
BA 2	975	_	-	100
BA 3	3003	_		100
BA 4	7869	324	4	96
МВ	3213	_	_	100
MB-Mixed	816	_		100
LB	6609		_	100
IA	1509	_	_	100
Error	1251	171	14	86
Total	62244	14225	23	77

^{*} All of the above percentages are taken from the total fragments processed, i.e., 62,244. Thus 77 % of the total fragments or 48,019 fragments were over 0.03 m and were classified.

Because the excavated area of the lowest levels was limited and some units could not be confidently assigned to specific periods, the component parts of this type series must be under continued assessment. No variables have been deleted, but obviously there are types that should be dropped or combined with others because of their numerical unimportance. Statistically the margin of uncertainty of any given number should be considered to be twice the root of that number. Therefore many of the types were found to fall well within that margin of uncertainty. It is hoped that all of these types will be tested in continued field excavations before any of them are excluded from the series. Only further excavation will clarify this, but we have selected to present this material on a comparative basis, - i.e., each period's statistics are indicative of a space-time factor that stands on its own.

At writing, these types along with all the pottery have been stored at the site as a reference tool for future research.

TABLE 88. DISTRIBUTION OF POTTERY BY TRENCH

TRENCH	Number of Fragments	% of Total Fragments
Pekmez trench 1	317	1
Pekmez trench 2	47953	77
Acropolis trenches 1 & 2		_
Acropolis trench 3	1342	2
Acropolis trench 4	1402	2
Acropolis trench 5	1063	2
Acropolis trench 6	178	_
Acropolis trench 7	1787	3
Acropolis trench 8	6266	10
Acropolis trench 9	1509	2
Kuşkalesi trenches 1 & 2	427	1
Total	62244	100

Presentation

The purpose of this presentation is to study the Aphrodisias type series. To achieve these ends, the attributes that were selected are presented in a dual arrangement: by classes, type-groups, and families where attributes are inwardly measured and are set against each other. After classes and families have been outlined, isolated, and dominant trends are noted for their population frequencies; there follows a period by period analysis.

Class is a combination of families that has its general function already defined and has shared attributes. But the members of each group are not necessarily identical. For shape, the unifying elements are function and form. For color decoration, with more than one-hundred color variants, specific colors have been grouped under families. Thus various shades of grays have been combined. These colors are considered mutually independent factors, so that each color family has been given an equivalent status. The purpose is to emphasize type-group clusters (or clustered types and families) for an overall study of change.

Type gathers the information within the limits set by specific identities. Similar types are combined into type-groups, which are then assigned to a family. In this section are presented the percentage frequency of occurrence of representative attributes and their correlation with one another according to the 13 periods under study.

TABLE 89. DISTRIBUTION OF POTTERY BY TRENCH AND PERIOD

Area Frag- Period Total Period/ **PERIOD** Trench ments Site Late Neolithic (?) Pekmez 2 471 100 100 1 Late Chalcolithic 1 Pekmez 2 13364 100 100 21 9002 Late Chalcolithic 2 Pekmez 2 100 100 14 Late Chalcolithic 3 Pekmez 2 9989 100 100 16 Late Chalcolithic 4 Pekmez 2 3332 100 100 5 Bronze Age 1 Pekmez 1 74 Pekmez 2 767 91 841/100 1 Bronze Age 2 Acropolis 3 433 44 Acropolis 5 38 Kuşkalesi 1 134 14 Pekmez 1 169 17 Pekmez 2 201 21 975/100 2 Bronze Age 3 Acropolis 3 171 6 Acropolis 4 442 15 Acropolis 6 178 6 Kuşkalesi 1 & 2 82 3 Pekmez 1 67 2 Pekmez 2 2063 68 3003/100 5 318 4 Bronze Age 4 Acropolis 3 3 Acropolis 4 243 Kuşkalesi 1 & 2 180 2 Pekmez 1 7 1 91 7869/100 13 Pekmez 2 7121 Bronze Age 4 -18 6 Middle Bronze Acropolis 3 21 Acropolis 4 688 903 28 Acropolis 5 Acropolis 7 1365 43 7 3213/100 5 Pekmez 2 239 2 1 Middle Bronze Acropolis 3 88 11 Acropolis 5 335 41 Acropolis 7 391 48 816/100 1 Pekmez 2 5857 89 Acropolis 8 Late Bronze 6609/100 11 Pekmez 2 752 11 2 3 1504/100 Acropolis 9 1504 Iron Age 400 Acropolis 3 32 Error Acropolis 4 29 2 34 3 Acropolis 5 87 7 Acropolis 7 Acropolis 8 409 33 Kuskalesi 1 & 2 31 1251/100 Pekmez 2 261 20 2 99 62244 Total

TABLE 90. SUMMARY OF DISTINCTIVE FRAGMENTS
TYPED**

FORM	Number of Fragments	% Distinctive Types	% Rims	% TTBS*
Bowls	6581	37	64	11
Cooking Pots	1783	10	17	3
Jars/Jugs	1205	7	12	2
Pithoi	416	2	4	i
Baking Trays	243	1	2	_
Total Rims	10228	57	99	16
Handles	3966	22		12
Bases	2519	14		5
Spouts	136	1		_
Necks	114	1		_ _ _
Lids	8	_		_
Disks	525	3		1
Carinated				
Body Sherds	217	1		_
Miscellaneous	207	1		_
Total Distinctive				
Types	17920			29
Decorated Wares				
Slipped	22331			36
Painted	1171			2
Smoothed and Burnished	9715		,	16
Total	33217			53
Smoothed	2864			5
Burnished	6851			11

^{*} Total Typed Fragments (62244).

This is a simple statement of single independent families and their relative correlations by period. More will be said about types after a discussion of broad spectrum identities: families and type-groups.

Families and Type-groups

Shape and decoration are factors of major importance because they are the most purposeful aspects of the potter's intentions. Through their analysis, conclusions as to the potting tradition at Aphrodisias can be stated. To establish reference groups of shape and decoration techniques, families were created by the careful combination of attributes. The emphasis of this study is to focus on the overall development of these characteristics. To assure no particular bias, all the types with an .03 percent or more representation in each period were placed within a family group.

^{**} These figures include fragments that were too fragmented to type, and miscellaneous types and shapes that were not incorporated in the type series.

The following seriated sequence tables place these broad spectrum decoration and shape families against the period they were in use. Each broad category of study, i.e., family decorative element or functional class is introduced with a table giving its frequencies and a list of component families, type-groups, and types; this is followed by a summary of specific periods. Separate graphs are devoted to plastic and liquid decoration and to vessel classes (bowls, cooking pots, jars/jugs, baking trays, pithoi and large jars, bases, disks, and handles), and then to the predominant shape types within these classes based on their inward statistical development. The frequencies of family shape percentages such as those presented in Table 99, p. 318 are based on the number 6581; the total number of bowls found. The organization of these charts is as follows: there is one column for each period; here the number of fragments belonging to each family are listed; vertical columns on the far right note the total of the family and its percentage to others in the period.

Decoration

Since decorative elements are one of the dominating factors in pottery production, its study is of special interest for the light that it sheds on the parallels which exist between its use at Aphrodisias and at other sites.

Table 91 gives a period by period total of frequencies of slipped, burnished and smoothed fragments based on the total sherds collected and typed. The body-sherd count along with the study of diagnostic types provided information for the total of sherds analyzed as well as the base for the computations for the frequency of decoration.

Plastic decoration — smoothing and burnishing (including pattern-burnishing); incision (including pointillé), and appliqué and liquid decoration (slip, wash, paint) were found either singularly or used together (slip and burnish); slip/paint/burnish; slip/smoothed, and other combinations — totaled 53 % of the fragments classified. The occurrence of decoration is significant, for it pinpoints the relative presence or absence of use and the proportions of use. 190

TABLE 91. FREQUENCIES OF PLASTIC AND LIQUID DECORATION

PERIOD	Smoothed %	Burnished %	Slipped %
LN(?)	48	10	1
LC 1	4	13	22
LC 2	7	13	15
LC 3	5	14	16
LC 4	4	17	5
BA 1	1	25	2
BA 2	28	25	2
BA 3	9	16	5
BA 4	2	6	13
BA4-MB	2	10	5
МВ	_	4	1
LB		1	11
IA	_	_	2
Error	7	12	11
Total %	5	11	36

The categories of smoothing and burnishing are mutually exclusive, i.e., a fragment was unfinished or smoothed, or it was burnished; it could not be unfinished and unburnished, or unfinished and unsmoothed.

Liquid Decoration - Slip

The applications of overall slips were commonly used at Aphrodisias. Technically most of the slips adhere quite well to the vessel surface but chipping, peeling and crazing were not uncommon. The slips employed were ferruginous, often the characteristic black slip used at Late Chalcolithic Aphrodisias was heavy and distinct from the ware-fabric and not particularly fine-grained. Surfaces may have been coated one time by dipping the vessel into a thick slip suspension or several times into a thinner slip suspension. Both of these methods produced a high luster after burnishing. More often than not, black and red slips were burnished. Salmon colored slips, as a rule, were not burnished but were smoothed.

The author defines a slip as an aqueous clay suspension applied after firing. Both slip and wash cover major portions of the vessel surface. In addition at Aphrodisias we also have wash-slips which are generally associated

^{190.} The use of decoration was also computed against types, type-groups, and families, but the vast majority of decoration appeared on non-diagnostic fragments. Although the presence of decoration can be identified on a small fragment, none under 0.03 m was registered.

COLOR		Slip, Slip-wash, Wash																							
PERIOD	Blac	k	Brov	vn	Gra	у	Meta	llic	Oth	ег	Red-Bl	lack	Red-P	ink	Salm	on	Tai	n	Whi	te	Tot	al	Unslip	ped	Total
	#	%	#	%	#	%	#	%	\$	970	#	%	£	9%	#	970	=	%	#	%	=	970	=	970	1000
LN(?)	11	2	105	22									161	34			2				279	59	192	41	471
LCI	1178	9	356	3	45				10		1		167	1	8		50		48		1863	14	11501	86	13364
LC2	1464	16	714	8	153	2	1		13		92	1	333	4	449	5	204	2	26		3449	38	5553	62	9002
LC3	1305	13	476	5	121	1	2		22		334	3	316	3	847	9	109	1	34		3566	36	6423	64	9989
LC4	552	17	101	3	19	1	2				13		106	3	162	5	27		18	1	1000	30	2332	70	3332
BA1	210	25	41	5	3		1				1		56	7	6	1	3		3	1	324	38	517	62	841
BA2	168	17	50	5	22	2	9	1			16	2	316	32	44	5	14	1	13	1	652	67	323	33	975
BA3	344	12	121	4	35	1	19	1	1		105	4	548	18	85	3	19	1	19	1	1296	43	1707	57	3003
BA4	399	5	189	2	49	1	8		1		63	1	489	6	225	3	53	1	60	1	1536	19	6333	81	7869
BA4-MB	310	10	217	7	65	2	13		2		133	4	865	27	311	10	109	3	112	4	2137	66	1076	34	3213
МВ	61	8	27	3	6	1	9	1	17	2	34	4	149	18	59	7	7	1	42	5	411	50	405	50	816
LB	145	2	52	1	1		4073	62	13		25		183	3	4		3		1		4500	68	2109	32	6609
IA	140	9	169	11	2		130	9			24	2	266	18	7	1	2		17	1	757	50	752	50	1509
Error	174	14	68	5	6	1	49	4	4		21	2	196	16	26	2	11	1	6	1	561	45	690	55	1251
Total % of slipped	6461	29	2686	12	527	2	4316	19	83	0.3	862	4	4151	19	2233	10	613	3	399	2	22,3	31	39,91	3	62244
% of Total	10		4		1		7		0.	1	1		7		4		1		1		36		64		

TABLE 92. FREQUENCY TABLE FOR LIQUID DECORATION FAMILIES

with metallic-colored slips that have a high mica content in their compositions. A wash-slip, we presume, was applied before firing just like a slip, but it also bears the qualities of a wash and can be rubbed off the vessel surface.

Table 92 shows the frequency of occurrence for slip, slip-wash and wash decoration and also color families according to each period. (Nine families were created from 58 specific Munsell color designations). 22,331 or 36 % of the total classified fragments were slipped. The most popular slip families at Aphrodisias are black (10 %), metallic (7 %), red (7 %), brown (4 %), salmon red (4 %), mottled red-black (1 %), tan (1 %), gray (1 %), white (1 %) — and (.1 %) were classed as other colors that could not be placed into families. (These percentages are taken against the total fragments classified, or 62,244).

The period with the highest proportion of liquid decoration is the Late Bronze with 68 %; this is followed by

the Bronze Age 2 with 67 %, Bronze Age 4-Middle Bronze with 66 %, and the Late Neolithic(?) with 59 %. Each of these slip color families will be briefly discussed below.

Black Slip

Black slip decoration is known to have been the hallmark of Late Chalcolithic southwestern Anatolia, ¹⁹¹ but its presence is important in the Bronze Ages as well. In the Late Chalcolithic levels of Pekmez trench 2, black slip appeared in great quantities — 4,499, or 69 % of the family.

The distinct black slip of Aphrodisias is characterized by a heavy black or very dark gray slip which is commonly applied all over the vessel surface in the Late

191. It appears in the Southeast as far as Mersin (Garstang 1953: Figure 93.8, 14), and in the Aegean at Saliagos (Evans and Renfrew 1968: Plates XX-XXI). The parallels for this type of decoration are extensive.

TABLE 93. GRAPHED FREQUENCY OF SMOOTHED AND BURNISHED FRAGMENTS

Chalcolithic. In the Bronze Age, it is applied on the exterior and over the tops of rims. Sometimes the Late Chalcolithic slip is so heavy that it cracks into fine lines; this is particularly true of the earlier strata. By the Late Chalcolithic 4 it is lighter in consistency. On many specimens the color is sharp and intense, on others it varies in intensity to variegations of a cloudy black. Generally, the consistent color of the slip indicates that it was made from the same clays as the parent pot.

6,461 fragments were black-slipped. There is not one level where it is not seen to occur. As the predominant slip in the Late Chalcolithic, in Late Chalcolithic 1 it accounts for 9 %; Late Chalcolithic 2, 16 %, Late Chalcolithic 3, 13 %; and Late Chalcolithic 4, 17 %. Its presence in the Bronze Age is just as striking for it reaches its peak in the Bronze Age 1 period. Table 92 shows its presence throughout the periods.

Red Slip

Red-slipped wares are present in all the periods at Aphrodisias. It was particularly popular in Level VIIIC of Pekmez trench 2, the Late Neolithic (?) deposit. Red slip represents 19 % of the total sherds recovered. Its presence begins in the Late Neolithic (?) period where it accounts for 34 % of the slipped fragments. During the Late Chalcolithic its numbers remain insignificant, but it again becomes popular in the Bronze Age 2 period where

it achieves its high point, representing 32 % of the slipped fragments.

In general, red slip occurs in a variety of shades, sometimes changing from orange to an intense bright red on a single pot. The slip may also appear mottled — red-to-black, but the color is predominantly red. This may have been due to insufficient oxidation conditions, and may account as well for the variety of shades in the mottled red-black slip family.

Metallic Slip-wash

Wash-slips are associated with slips that have a high mica content. They may be gray-based as they are in the Bronze Age 2, or either gold or silver-based as they are in the Late Bronze and Iron Ages. 7 % of all the fragments were coated with a metallic slip. Gold wash-slip represents 62 % in the Late Bronze Age, but falls to 9 % in the Iron Age.

Salmon Slip

Salmon slip represents only 10 % of the slipped fragments at prehistoric Aphrodisias. It first appears in Late Chalcolithic 1 and is represented in a minor way throughout the Late Chalcolithic, achieving its high point in Late Chalcolithic 3 where it accounts for 9 % of the slipped fragments. It is present throughout the periods but achieves 10 %, its peak, during the Bronze Age 4-

TABLE 94 FREQUENCY OF OCCURRENCE OF	PAINT	COLOR	FAMILIES BY	PERIOD
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															_		
Count % of Period % of Color	LN(?)) LC	l LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4 MB	- МВ	LE	IA	Error	Row Total	U/n Of	970
	1	11	39	12	1	0	6	3	9	13	2	189	19	2	307	33	0
Red	0.3				0.3	0.0	2.0	1.0	2.9		0.7			0.7	0.5		
	0.2				0.0	0.0	0.6	0.1	0.1	0.4	0.2	2.9	1.3	0.2			
	0	9	41	18	4	1	1	3	18	13	0	70	17	1	196	21	0
Black	0.0				2.0	0.5	0.5	1.5	9.2		0.0			0.5	0.3		
	0.0	0.1	0.5	0.2	0.1	0.1	0.1	0.1	0.2	0.4	0.0	1.1	1.1	0.1			
	0	80	47	16	9	0	5	5	4	4	2	2	1	11	186	20	0
White	0.0			8.6	4.8	0.0	2.7	2.7	2.2		1.1	1.1		5.9	0.3		
	0.0	0.6	0.5	0.2	0.3	0.0	0.5	0.2	0.1	0.1	0.2	0.0	0.1	0.9			
	0	4	36	5	1	1	3	0	5	2	0	10	10	0	77	8	0
Red Brown	0.0			6.5	1.3	1.3	3.9	0.0	6.5		0.0			0.0	0.1		
	0.0	0.0	0.4	0.1	0.0	0.1	0.3	0.0	0.1	0.1	0.0	0.2	0.7	0.0			
	0	0	20	23	1	0	2	0	3	1	0	0	11	0	61	6	0
Salmon Red	0.0				1.6	0.0	3.3	0.0	4.9		0.0	0.0		0.0	0.1		
	0.0	0.0	0.2	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.7	0.0			
	0	0	10	4	2	0	0	0	0	0	0	41	2	0	59	6	0
Dark Brown	0.0				3.4	0.0	0.0	0.0	0.0		0.0	69.5	3.4	0.0	0.1		
	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.0			
	0	1	13	41	1	0	0	0	2	0	0	0	0	0	58	6	0
Brown Gray	0.0				1.7	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.1		
	0.0	0.0	0.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Total	1	105	206	119	19	2	17	11	41	33	4	312	60	14	944	100	0
% Period	0	1	2	1	1	0	2	0	1	1	0	5	4				
Tot. Paint Motifs		13,364	9002	9989	3332	841	975	3003	1869	3213	816	6609	1509				
% Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4				



279. Pekmez trench 2; Level VIIIA; Late Chalcolithic 1, White-painted decoration.

^{3. 1597.}I exterior bowl rim with white-painted parallel lines, intersected by cross-hatched lines;

^{4. 1597}a bowl rim interior with triple triangle lines

Middle Bronze period. Pieces bearing salmon slip were infrequently burnished — but not if it was used on vessel classes of large forms like pithoi or jars and jugs; more rarely is it found on bowls.

Painted Decoration

The frequency of occurrence of the seven popular paint colors can be found in Table 94. *In toto*, 944 fragments were painted with red, black, white, red-brown, salmon-red, dark brown, and brown gray accounting for the complete range of colors used.

White-Painted Decoration 192 (Figures 279-281)

White-painted decoration is a hallmark of the Late Chalcolithic in west and central Anatolia. Linear white-painted designs are introduced to the site in Late Chalcolithic 1. They reach a peak in that same period and then gradually disappear from the repertoire after Level VII of Late Chalcolithic 4, only to reappear in the Bronze Age 2 period.

Characteristic of white-painted decoration is its association with black-slipped, straight-sided, flaring burnished bowls and to a lesser extent it is found on small jugs and closed bowl forms. Common to this type of decoration is that the ware-fabric almost always ranges in the gray smudged group, but it can also be red-brown to red in color. The thick monochrome slip does not vary; normally the vessels were completely and evenly coated inside and out — and the geometric white-painted designs applied over a portion of the surface. The vessels were then hand-burnished. (This burnish occasionally produced a real gloss but in general achieved a medium high luster.) The burnish strokes tend to be radial, or radial-oblique on the inside of the vessel, and horizontal-oblique over the decoration. The opaque white paint varies to hues of light gray. It is important to note that this pigment did not adhere well to the body fabric. When the paint flaked off, the dull slip (which was not burnished) remained on the surface giving us the erroneous impression that the vessels were pattern-burnished.

White-painted designs were poorly executed. They extend over one area of the vessel, not completely covering the surface. On flaring plates the designs appear on the rim interior, while on closed forms they are generally restricted to the bulging part of the body. The patterns are simple repetitive linear designs.

192. See Eslick 1978: map, Pl. 66.6.2; Mellaart 1962:194ff.; 200f.; Map III. Map III shows 87 localities where these white-painted wares are found. Also see A. Furness' discussion 1956:204 and W. Orthmann (1963:66-67). It has been hypothesized by E. J. Forsdyke (1925:xii) that white-painted vessels find prototypes in leather forms. Possibly that is the reason why the decoration appears to be disproportionate to the vessel.



280. White-painted fragment of the Bronze Age.

Some 30 motifs¹⁹³ have been recognized, the most prevalent being variations of parallel and overlapping zigzags. ¹⁹⁴ *In toto*, there were 48 painted motifs used in pottery decoration representing only 1 % of the total fragments registered. Table 95 outlines the frequency of occurrence of the five most popular motifs in order of their importance.

The most important point in connection with the white-painted technique is that some of the white-painted ware in the Eastern Aegean is interrelated in style and with specific ceramic types. In discussing the problems involved with the mainland use of the technique and so that cultural provinces can be determined, C. Eslick (1978:173) suggests,

« All the white painting of the East Aegean is very similar with the same types of designs occurring on the same shapes. The pottery from Kumtepe belongs with them. This group is separated from Beycesultan not only by the designs but also by the fact that the jugs are painted on the necks and handles rather than the bodies. Any discrepancies within this group are probably due to the small amount of material available. »

- 193. There may be unrecognized links between the designs we have singled out; one design may, in fact, be part of another. Our identification of these motifs was dependent upon the design left on the fragment. Motifs include single net, banded single net, double net, banded double net, banded triple net, single zigzag, banded single overlapping zigzag, double overlapping zigzag, double intersecting zigzag, triple grouped zigzag, triple intersecting zigzag, quadruple or more grouped zigzag, double grouped parallel lines perpendicular to one or more bands, triple or more grouped parallel lines perpendicular to one or more bands, double grouped parallel lines, triple grouped parallel lines, quadruple or more grouped parallel lines, lines that may or may not intersect, and quadruple intersecting grouped lines.
- 194. Beycesultan shares all of these motifs except the Beycesultan double-zigzags and checkerboard motifs are not found at Aphrodisias. White-painted wares arrived at both sites as already well-established traditions. They are associated with the earliest deposits at Beycesultan Level XL of L.Ch. 1 and continue to the end of L.Ch. 4. At Kusura in Level A (Lamb 1937: Figure 6.12-13), there are white-painted jugs that find affinities to both Aphrodisias and Beycesultan shapes.

Count % of Period % of Motif	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Error	Row Total	Total % of Motifs	Total % 62,244
Horizontal	0	58	32	10	5	0	0	0	2	1	0	52	39	3	202	43	0
Bands	0.0 0.0	28.7 0.4	15.8 0.4	5.0 0.1	2.5 0.2	0.0	0.0	0.0	1.0 0.0	0.5 0.0	0.0	25.7 0.8	19.3 2.6	1.5 0.2	0.3		
Multiple	0	0	0	0	0	0	0	0	0	0	0	181	6	8	195	42	0
Horizontal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.8	3.1	4.1	0.3		
Bands	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.4	0.6			
Multiple	0	0	0	0	0	0	0	0	0	0	0	25	0	0	25	5	0
Horizontal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0		
Bands + Waves	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0			
	0	12	4	1	0	0	2	0	0	0	0	1	0	2	22	5	0
Crisscross	0.0	54.5	18.2	4.5	0.0	0.0	9.1	0.0	0.0	0.0	0.0	4.5	0.0	9.1	0.2		
	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2			
Linear +	0	1	0	0	0	1	0	0	0	0	0	16	3	0	21	5	0
Horizontal	0.0	4.8	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0.0	0.0	76.2	14.3	0.0	0.0		
Bands	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.0			
Total	0	71	36	11	5	1	2	0	2	1	0	275	48	13	465	100	0
% Period	0	15	0	8	2	1	0	0	0	0	0	59	10	3		95	

TABLE 95. FREQUENCIES OF PAINT MOTIF FAMILIES BY PERIOD

Another key area investigated by M. Gimbutas and C. Renfrew includes the site of Sitagroi, located on the Plain of Drama in northern Greece. Sitagroi is a crossroad between the Balkans, the Aegean, and Anatolia. Most of the white-painted wares at Aphrodisias resemble the graphite-painted wares excavated there. This latter type of ware decoration has also been found in Romania at the site of Gumelnitza. In a study and comparison of graphite wares E. Gardner notes (1979:20) the Romanian examples « were dismal in comparison » with the Sitagroi painted wares. She further reports:

« The graphite paint on the Sitagroi ceramics had a sparkling crystalline quality, somewhat like grains of sugar, and it looked fresh and almost brand new [while at Gumelnitza] the graphite paint was shadowy and could hardly be seen; in some instances it had disappeared entirely or left a white residue. The very smooth, even greasy quality of the paint gave a gray or tarnished effect to the objects decorated with it. » 195

Laboratory analyses have made it possible to verify that there were two types of graphite wares. One type, characterized by a shadowy thin paint applied in spiral or geometric designs on a black, red or buff background, was made north of the Rhodope mountains in Bulgaria and Romania. The second type was south of the Rhodope mountains at sites throughout the Drama Plain in Greece. In contrast to the northern variety, the southern type of graphite-painted ware is associated with thick-walled vessels that were brick red in color. The paint is thickly applied and has a grainy or crystalline appearance — much like some of the Aphrodisias white-painted wares.

The paint on the graphite wares from Greece is reported to have been well-bonded, difficult to remove, and seldom disappeared on refiring even when the temperatures rose to over 1000 degrees. With higher firing temperatures, the graphite paint burned away and left a white silica residue. Although the paints were not chemically analyzed, they have been examined microscopically, and in some cases silica crystals in various stages of formation have been found in the paint itself. Perhaps pit temperatures, or the position of the ceramic during firing, or other variables can be theorized as creating the conditions for the more or less successful bonding of the white paint on Aphrodisias wares. It is possible that firing temperatures were not consistently controlled and the heat became so intense for the tolerance of the pigments, that they burned off leaving either a dulled shadowy residue or an unburnished body fabric on the vessel surface (Figure 281).

^{195.} The results of graphite-painted pottery tests made it possible to identify two types of paints (Gardner 1979:20). It was concluded that pit-firing would not harm graphite paint because it contained ash impurities and silica which helped in bonding the paint to the vessel surface.



281. White-painted decoration that has worn away and appears to have been pattern-burnished; Pekmez trench 2.

TABLE 96. FREQUENCY TABLE FOR BURNISHED AND SMOOTHED FRAGMENTS

PERIOD S	Smoothed	0% TTBS*	Burnished	% TTBS*	Smoothed and Burnished	% TTBS
LN(?)	227	48 %	46	10 %	273	58 %
LC1	536	4 %	1708	13 %	2244	17 %
LC2	601	7 %	1175	13 %	1776	20 %
LC3	512	5 %	1409	14 %	1921	19 %
LC4	150	4 %	552	17 %	702	21 %
BA1	8	1 %	210	25 %	218	26 %
BA2	269	28 %	239	25 %	508	52 %
BA3	267	9 %	470	16 %	737	25 %
BA4	115	2 %	486	6 %	601	8 %
BA4-MB	91	2 %	307	10 %	398	12 %
MB	3	_	33	4 %	36	4 %
LB	_	_	59	1 %	59	1 %
IA	_	_	6	_	_	_
Error	85	7 %	151	12 %	236	19 %
Total	2864	5 %	6851	11 %	9715	16 %

^{*} TTBS = Total Typed Fragments Per Period.

Plastic Decoration

In our study, plastic decoration primarily involves smoothing and burnishing. Table 96 shows the statistics for these finishing techniques and Table 93 shows their graphed results. About 16 % of all typed pottery fell into these mutually exclusive categories. Smoothing occurs in such numbers at Aphrodisias that it must have been the standard technique of finishing pottery. It is characterized by an even and smooth regularity of the vessel surface. This may have been while the vessel was still moist because few identification marks, dragged or torn-out temper marks, excess paste, cracks or other defects of potting are observable.

Most of the smoothed fragments have compact and regular surfaces. No gloss appears on these surfaces, as in burnished pieces, but the fine finish attained by the Aphrodisias potters can be observed on both slipped and unslipped fragments. It would appear from our megascopic examination that the smoothing tool was most often soft and pliable, possibly a skin or the hand itself was used, for no clearly identifiable marks could be easily distinguished except for a thin surface film of the same color as the fabric. It was sometimes difficult to determine if a burnish instead of a smoothing technique was intended. The finished surfaces of these early wares of the Late Neolithic (?) were decidedly more even and smooth than those of their successors in the Late Chalcolithic. The picture changes with the advent of the Bronze Age 2 where there is a concerted effort on the part of the potter to finish all surfaces by either smoothing or burnishing.

7 % or 2864 of the total fragments were smoothed. The period with the highest frequency of smoothing occurrence was the Late Neolithic (?), accounting for 48 %.

Burnishing

6851 fragments, representing 11 % of the total, are burnished. Hand-burnishing occurs in greater numbers at Aphrodisias than does smoothing. It is often characterized by being a conspicuously fine finish, and is always associated at Aphrodisias with a slipped surface. Burnishing is performed after the vessel has been slipped and is still a bit moist (or has been remoistened). There are variations in luster¹⁹⁶ which are dependent upon the moistness of the clay at the time of burnishing and the compactness of the stroke.¹⁹⁷

We assume that polishing pebbles were used as burnishing tools; in most cases, their rounded ridge marks can be identified in the surface of the fragments. From the author's experimentation with burnishing, only polished pebbles give a particularly high luster. Often burnished surfaces show marks of having been worked over several times or of being haphazardly finished — the strokes interweave and cross each other. Whether or not this was intentional is not clear as few fragments appear to be pattern burnished.

^{196.} Model fragments characterizing the degrees of luster served as specimens for our analysis. Degree of luster is defined as follows: very low luster is a semi-matt finish — the burnish is difficult to detect and the fragment has to be moved back and forth in the hand to observe the luster: medium luster is characterized by being uneven — it is also known as a semi-gloss. High luster is evenly effected and the burnish has a glossy surface — the strokes are fine and are either close together or superimposed.

^{197.} The firing temperatures are also important.

Burnishing marks can generally be detected; they are normally horizontal on bowl forms, but they can also be obliquely positioned and haphazard as well. These factors are mentioned in the Catalogue when present. It would appear that burnishing was commonly used as part of the decoration as well as to seal the pores of the clay. It is usually present on bowls and jars and jugs.

In the examination of hand-burnished fragments with luster, model fragments were used to compare with luster factors including high (glossy), medium (semi-gloss), and low (difficult for the eye to detect). Hand-burnished wares with a high-luster numbered 1070 fragments (2 % of the total) with the largest percentage represented in the Bronze Age 2 period. In Bronze Age 3 the percentage of burnished pieces dropped to 5 %, and from Bronze Age 4 and into later periods, its representation was minimal, hovering around 1 %. Fragments with medium-luster numbered 1670 or 3 % of the total fragments classified it reached its high point in the Bronze Age 1, representing 20 % of the burnished pieces. Low-luster fragments accounted for 7 % of the total classified or 4053. It was predominant in the early periods, falling out of favor by Bronze Age 1.

Few fragments in these periods were wheel-burnished: one was found in Bronze Age 3, five in Bronze Age 4, one in Bronze Age 4-Middle Bronze and Middle Bronze respectively, and two in the Late Bronze. This form of decoration appears to have found little favor at Aphrodisias.

Pattern-Burnishing (Figure 282)

Few of the total typed sherds were represented by pattern-burnished wares as we were only able to find 58 examples in Late Chalcolithic contexts. This type of ornament was composed of rather crude vertical linear designs created by the action of the burnisher over an unburnished slipped or unslipped surface. Most designs were simple and achieved a low luster — such as broad parallel lines vertically-burnished on the bowl's surface leaving parallel lines in reserve (Figure 282). Most pattern-burnishing at Aphrodisias was done on the exterior vessel surface.

The earliest appearance of pattern-burnishing is in Late Chalcolithic 1, which also contained the largest percentage of fragments recovered *in toto*. Generally pattern-burnished decoration was associated with dark wares, as 98 % of the sherds found with this type of decoration were black-slipped; (2 % of the pattern-burnished sherds were unslipped).

When we began our close examination of patternburnished wares, several factors became apparent and we observed: 1) linear motifs similar to white-painted ones



282. Bowl rim with exterior pattern-burnishing; Pekmez trench 2.

that seemed to have been « pattern-burnished »; 2) crude pattern-burnished designs; and 3) white-painted burnished wares with some crusted paint deposits still adhering to their surfaces. We began to suspect that what in some cases we might have originally identified as pattern-burnishing was, in fact, no more than white-painting that had loosened and fallen away from the vessel surface, either in firing or in the use process.

A major consideration that emerges from this questioning of materials lies in connection with the redefinition of pattern-burnished wares. While pattern-burnishing does not, at present, provide stable evidence for links between cultures, a re-examination from sites in the Aegean and Anatolia may provide more definitive support for cross-cultural connections.¹⁹⁸

Incision and Excision (Figures 283-285)

Nine types of incised and excised designs have been found at Aphrodisias. They have been classified as grooved, irregular linear horizontal, linear horizontal, linear oblique, linear vertical, pointillé bands, pointillé, combing, and punctate design.

A total of 289 incised and excised fragments were processed. Obviously, such decoration is not commonly used at Aphrodisias until the Late Bronze Age which represents 33 % of the total incised-excised sample.

198. The most point that emerges form this questioning is in connection with a clearer re-defintion of pattern-burnished wares. C. Renfrew in his review of Aegean sites, and also J. Sperling, D. French, and C. Eslick discuss the possible problems of equating this evidence and the cultural spheres involved. Any sort of linkage between sites that has emphasized the close cultural connections based on this decorative motif we would strongly support—after the evidence from Beycesultan and Kum Tepe has been meticulously re-examined. For completeness, we have looked at the major part of the evidence for pattern-burnishing. Correlations and problems have been made clear, but it is obviously rash to assume anything until the introduction, use, statistics, and sherd correspondences of this technique can be compared.

TABLE 97. FREQUENCY OF OCCURRENCE FOR INCISED-EXCISED FRAGMENTS

Period	Excision	Incision	Total	0%
LN(?)	0	4	4	1
LCI	4	4	8	3
LC2	2	11	13	4
LC3	1	11	12	4
LC4	1	1	2	1
BA1	1	3	4	1
BA2	0	7	7	2
BA3	2.	8	10	3
BA4	9	14	23	8
BA4-MB	5	14	19	7
MB	3	13	16	6
LB	40	56	96	33
IA	13	27	40	14
Error	15	20	35	12
Total	96	193	289	99
970	33	67		



285. 247.I Acropolis trench 3; Bronze Age 4.



283. White-filled incised fragment 1468.I, Pekmez trench 2; Levels V-IVe, Bronze Age 2.



284. Incised fragment 289.11*, Acropolis trench 3; Complexes VIII-XII, Bronze Age 2.

Only four fragments with punctate design were recovered in Level VIIIC of Pekmez trench 2, Late Neolithic (?) and they probably belong to the same vessel. The fabric is a coarse cooking pot ware. The incisions were roughly executed in both crescent-shaped and fish-scale patterns.

Only one example of pointillé design was found in Pekmez trench 2, Level VIIB of Late Chalcolithic 3. The design appears on a sandy gritty coarse ware fragment.

Appliqué

Three types of appliqués were recognized: 1) raised band with finger impressions; 2) raised bands; 3) knobs. Only the knob decoration is statistically significant. Appliqued knobs are found throughout all levels of the site. Within this class eight shape-forms were distinguished. 199

199. Appliqued knobs are found throughout all levels of the site, but their statistical analysis became confusing due to the fact that some of them may have been classed as lug handles. Therefore, the statistics have been combined and their frequencies of occurrence are assessed with handles under the popular knob handle type-group discussed *infra*.



286. Depas cup 228.I, Acropolis trench 3; Bronze Age 4.

CERAMIC CLASSES

TABLE 98. FREQUENCY OF OCCURRENCE FOR CERAMIC CLASSES BY PERIOD

Count % of Period % of Class	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total Body Sherds (62,244)	070
Body Sherd	374 79 1	12025 90 28	7407 82 17	8104 81 19	2755 83 6	592 70 1	62 6 —	1567 52 4	6059 77 14	161 5 —	186 23	3048 46 7	855 57 2	43195 99	69
Bowl	42 9 —	508 4 7	497 6 7	655 7 10	199 6 3	67 8 1	390 40 10	585 19 8	538 7 8	1195 37 18	150 18 2	1476 22 22	279 18 4	6581 100	11
Cooking Pot	0 _	173 1 10	175 2 10	135 1 7	65 2 4	28 3 1	57 6 3	117 4 7	247 3 14	291 9 16	60 7 3	331 5 19	104 7 6	1783 100	3
Jar/Jug	<u> </u>	51 - 4	57 1 5	87 1 7	38 1 3	25 3 2	62 6 5	141 5 12	229 3 19	291 9 24	54 7 4	150 2 12	20 1 2	1205 99	2
Pithos	2 _ _	20 	24 6	51 1 12	12 _ 3	2 _ _	28 3 7	51 2 12	24 — 6	77 2 19	26 3 6	81 1 19	18 1 4	416 99	1
Baking Tray	0 _ _	112 1 46	65 1 27	22 — 9	9 -4	5 1 2	9 1 4	3 - 1	12 5	6 _ 2	0 _ _	0 	0 	243 100	_
Base	26 6 1	137 1 5	161 2 6	227 2 9	54 2 2	21 3 1	103 11 4	188 6 7	260 3 10	404 13 16	117 14 5	695 11 28	126 8 5	2519 99	4
Handle	25 5 1	287 2 7	472 5 12	628 6 16	171 5 4	81 10 2	213 22 5	286 10 7	442 6 11	602 19 15	175 21 4	508 8 13	76 5 2	3966 99	6
Disk	1 - -	28 — 7	44 — 11	47 — 12	17 1 4	18 2 4	40 4 10	24 1 6	36 — 9	94 3 23	22 3 5	28 	4 1	525 99	1
Miscellaneous	1 -	23 - 3	100 1 15	335	12 	2 	11 1 2	41 1 6	22 — 3	92 3 13	26 3 4	292 4 43	27 2 4	682 100	1
Error												,		1251	2
% Total	471 99	13364 99	9002 100	9989 99	3332 100	841 100	975 100	3003 100	7869 99	3213 100	816 99	6609 99	1509 99	62244	100
Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4		

The following is a period-by-period presentation of ceramic *classes* including — bowl, cooking pot, jar/jug, pithos, baking tray, base, handle, spout, neck, carinated fragments and disk groups. The frequencies of each class are presented in Table 98 where each is set against the other. « Miscellaneous » includes classes that are not statistically important — necks, spouts, carinated body sherds, perforated fragments, and other miscellaneous fragments.

To derive greater chronological precision from a ceramic class than is afforded simply by noting the presence or absence of the specific type, I have whenever possible assigned subdivisions to types, type-groups and then to families. By this method, the relative frequencies of these families have been calculated for each of the successive levels of the stratigraphic column. This allows for the life-history of each family to be charted relative to others. Class statistics are found in Tables 99-124.

Percentages of the family presence or absence are given both for the period and for the family's inward development. Three number sets appear in each entry: the actual fragments typed, the percentage of the period or column, and the percentage of the class or family or row. Within some charts are rows called « Other, » « Untypeable, » and « Types not in families. » « Other » refers to types that are statistically significant but cannot be placed within a family. « Untypeable » refers to fragments that are included within their class, those that are too fragmented to classify, or to shapes not included within the type series. The « not in families » row refers to the types that are not placed in a family due to their extraordinary shapes. Accompanying each ceramic class is a chart of the type-groups and the shape families that are combined within the class, and then a brief summary is offered for each family. We begin with the bowl class.

Bowls

By far the most useful indicator of change in the type series is the bowl category. This is because bowls tend to fragment in fairly sizeable pieces which are easy to recognize. Bowls are ubiquitous forms common to all levels of the site; they are often decorated, and as a class they provide the greatest information regarding changes in shape. Bowl types and their families are based primarily on rim shape-forms. Approximately 188 types within 13 families are included in this category.

6,584 bowls are classified representing 10 % of the total fragments (62,244). The results of their frequency of occurrence can be found in Table 99. They naturally appear throughout all periods, but are more numerous in some than in others. In the Bronze Age 4 Middle

Bronze period, they represent 37 % of all the excavated fragments, in contrast to the Late Chalcolithic 1 period where they comprise only 4 %. The most dramatic indicator of change that can be noted in Table 99 are the strengths of vertical and flaring bowls in the early periods, while those that have the exterior-thickened, rolled, and curving-rim families dominate the later periods.

The most popular bowl shape is the flaring family, representing 22 % of the bowl class. It is followed by the exterior-thickened family (14 %), by the vertical family (12 %), and by the curving family (11 %). 12 % of the bowls are untypeable fragments.

Incurving. This family, as its name implies, is characterized by being turned to the interior. It is a so-called « closed » form that has a bent inflexion point but no corner-point on the exterior; its profile is convex and it is plain and unarticulated. The 17 types in this 4-member family may or may not be decorated. The color of the ware-fabric ranges into the darker shades of red, red-brown, and salmon.

The incurving family represents 5 % of the bowl class. Except for the Iron Age, it is present throughout all periods. This family gains a strong showing in both the Bronze Age 3 and Bronze Age 4 periods, but 47 % of its representation is found in Bronze Age 4 Middle Bronze periods and thereafter its presence dramatically declines. In relation to the other bowl families, it has the second highest showing in the Bronze Age 1 period when it represents 19 %, and in Bronze Age 4 Middle Bronze it is equal to exterior-thickened shapes representing 12 % of the bowl rims.

Curving. The difference between incurving and curving-rim families is that curving rims are more open forms, i.e., the stance of the rim is perpendicular to the base and its point of inflexion is not open or as bent as incurving forms. Like the incurving family, it has a simple unarticulated opening.

The curving family represents 1 % of the total fragments classified and 11 % of the bowls registered. This group has five family members and is composed of 21 types. Its frequencies are minimal in the Late Chalcolithic — but by Bronze Age 1, 17 % of the family is represented and its numbers continue to be popular in Bronze Ages 2, 3 and 4. Its peak is in Bronze Age 4 Middle Bronze where it represents 14 % of the bowl rims for that period and 22 % of its family. After a decline in the Middle Bronze, it continues in popularity in both the Late Bronze and Iron Ages. In the Iron Age, it is the most popular family, accounting for 29 % of the bowls for that period.

TABLE 99. FREQUENCY OF OCCURRENCE FOR BOWL FAMILIES BY PERIOD

Count % Period % Family	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total	Total % of Bowls	Total % (62,244)
Incurving	1 2	12 2 4	6 1 2	24 4 8	11 5 4	13 19 4	13 3 4	34 6 11	35 6 11	144 12 47	8 5 3	4		305 99	5	0
Curving	0 _ _	<u>2</u> 	5 1 1	23 4 3	11 5 2	12 17 2	33 8 5	87 15 12	89 17 12	162 14 22	15 10 2	199 13 28	82 29 11	720 100	11	1
Rolled (Thickened)	0 	0 _ _	1	3 1	2 1	2 3	3 1 1	20 3 4	22 4 4	161 14 31	28 19 5	255 17 50	15 5 3	512 99	8	1
Exterior- thickened	1 2	10 2 1	11 2 1	27 4 3	5 3 1	4 6 —	3 1	23 4 2	37 7 4	142 12 15	34 23 4	592 40 63	52 19 6	941 100	14	2
Vertical	11 26 1	149 29 20	131 26 17	102 16 13	26 13 3	7 10 1	33 8 4	33 6 4	70 13 9	107 9 14	5 3 1	78 5 10	12 .4 2	764 99	12	1
Carinated- small	<u>0</u> _	0 _ _	0 	0 	0 _ _	<u> </u>	2 1 1	0 	1 _	0 _ _	0 0	133 9 85	21 8 13	157 99	2	0
Carinated- large	0 _ _	0 	0 _ _	0 	0 _	<u>0</u> _	0	8 1 8	10 2 10	13 1 13	6 4 6	43 3 43	19 7 19	99 99	2	0
Interior-Exterior Thickened	· 0	10 2 37	0	0 _ _	0 _ _	0 _	0 _ _	0	8 1 27	7 30	1 1 4	0 	0 _ _	26 98	0	0
Flaring	29 69 2	230 45 16	237 48 17	176 27 12	74 37 5	19 27 1	249 64 17	206 35 15	81 15 6	93 8 7	4 3	18 1 1	4 1	1420 99	22	2
Inverted	0 	10 2 3	26 5 7	109 17 29	18 9 5	9 13 2	7 2 2	20 3 5	62 12 16	109 9 28	8 5 2	0 	2 1 1	380 100	6	1
Angular	0 _ _	12 2 13	12 2 13	9 1 10	2 1 2	<u> </u>	1 - 1	12 2 13	19 3 20	11 1 12	2 1 2	12 1 13	1 - 1	93 100	1	0
Everted	<u>0</u> _	<u>0</u> _	<u> </u>	$\frac{3}{11}$	0 	<u> </u>	0 	1 - 4	<u>o</u>	17 1 60	7 5 25	<u>o</u>	0 _ _	28 100	0	0
Other	<u> </u>	<u>0</u> _	1 4	1 - 4	0 	0	1 - 4	1 - 4	1 4	0 	0 _ _	9 1 39	9 3 39	23 98	0	0
Untypeable	0 	44 9 13	56 11 16	53 8 16	16 8 5	<u>0</u>	15 4 4	19 3 5	25 5 7	47 4 14	14 9 4	34 2 10	17 6 5	340 99	5	1
Numbers not in Families	0 _ _	29 6 4	11 2 1	125 19 16	34 17 4	1 1 —	30 8 4	121 21 16	78 15 10	182 15 24	18 12 2	99 7 13	45 15 6	773 100	12	1
Total Bowls	42 99	508 99	497 100	655 100	199 99	67 98	390 100	585 100	538 100	1195 100	150 100	1476 99	279 98	6581	100	10
% Period	9	4	6	7	6	8	40	20	7	37	18	22	18			
% of Bowls	1	8	8	10	3	1	6	9	8	18	2	22	4	100		
Total Period	471	13364	9002	9989	3332	841	975	3003	7869	3213	816	6609	1509			
% Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4			

TABLE 100. BOWL FAMILIES AND TYPE ASSIGNMENTS

SHAPE-FORM	_
Family	Туре
Incurving 5 % of bowls	 BX23, X58, X73 X47, CX88, BX13, CX43, BX51, X17, BX75, X65, CX23 X55, BX31, X75 X54, BX47
Curving 1 % of TTBS 11 % of bowls	 5. BX87, X56, BX15, CX60, XC3, BX13 6. XX45, XX56, BX21, XX51, BX55, XX39, X53 7. BX53, X69 8. BX49, X1, X2 9. X59, XC13, X76
Rolled (Exterior-thickened) 1 % of TTBS 8 % of bowls	10. XX17, XX41, XY26, X20, XX36, XX43 BX46, X60, BX93, X6, BX90, XX69 11. XC20, X41 12. XX36, XY8, XY25 13. BX26
Exterior- Thickened 2 % of TTBS 14 % bowls	17. XY7, XX32, XX19, MX20 18. XX42, XX25, XX2 19. BX38, XX12 20. X36, BX40, X7, X9 21. XX38, XX63, XX18 22. XX10, XX13, XC12, X70 23. XX53, XX58 24. XX27, X11, XX46 25. X71, XC7 26. CX6, CX18 27. XX47
Vertical 1 % TTBS 12 % of bowls	28. X94, CX9, CX81, X46, CX10, CX28 29. BX5, BX50, BX17 30. XX1, XX44, X87 31. CX27, CX29, CX56, X63 32. CX77, CX93 33. CX2, CX52, CX21 34. BX26 35. BX27
Carinated (Small) 2 % of bowls	36. XX28, XX3, XX40, XX78 37. XX6
Carinated (Large) 2 % of bowls	38. XX37, XX23, X12 39. BX29, X4, BX36 40. XX21
Interior- exterior Thickened	41. BX44, BX67, X37
Flaring 2 % of TTBS 22 % of bowls	

SHAPE-FORM	
Family	Туре
	48. CX31, CX76, X78
	49. CX34, X48, XY32, CX14, CX33, BX10
	50. CX44, CX13
	51. BX77
	52. XC2
Inverted	53. CX58, X77, XC5, XC6, X72, X5
1 % of TTBS	54. X88, CX57, X4, CX65
6 % of bowls	55. X22, X38, X6, CX12, XY17, BX41
	56. XX7
	57. X89
Angular	58. X24, X34, CX5
1 % of bowls	59. X45, X7
	60. X81
	61. XX22
Everted	62. X62, MX80
Other	63. XX4, X61

Rolled (exterior-thickened). The rolled-rim family as its name implies, is distinguished by having an articulated rim end doubled over in a roll and thickened externally: it is generally associated with incurving forms, infrequently it is flared. This rim is sometimes flat but more often rounded on top and on the exterior edge. The rim's stance is most usually horizontal — it is parallel to the base of the vessel. There is no angle or corner-point between the rim and the vessel body.

This family makes its appearance in the Late Chalcolithic period, representing 1 % of the total classified fragments and 8 % (512) of the bowl rims. It continues throughout the Chalcolithic and Bronze Ages 1-2 in a minor way. In Bronze Age 3 it begins a steady climb through Bronze Age 4 to the Bronze Age 4 Middle Bronze where it represents 14 % of the bowl forms and 31 % of its family; it then increases to 19 % of the bowls in the Middle Bronze period and continues to hold its popularity in the Late Bronze Age accounting for 17 % of the bowls and 50 % of its family. In the Late Bronze Age, these rims are particularly popular and are associated with carinated forms (Figure 308.14, 20). It all but dies out of the Iron Age assemblage, numbering only 5 % of the bowls of that period.

Exterior-thickened. This family may be flared, incurving or vertical in stance. It may or may not have an articulated corner-point at its top and is characterized by a pronounced exterior thickening. The exterior edge of many of this family is angularly flattened. Wall thicknesses range from 0.01-0.015 m.

TABLE 101. GRAPHED FREQUENCIES OF INCURVING, CURVING, ROLLED, AND EXTERIOR-THICKENED BOWLS

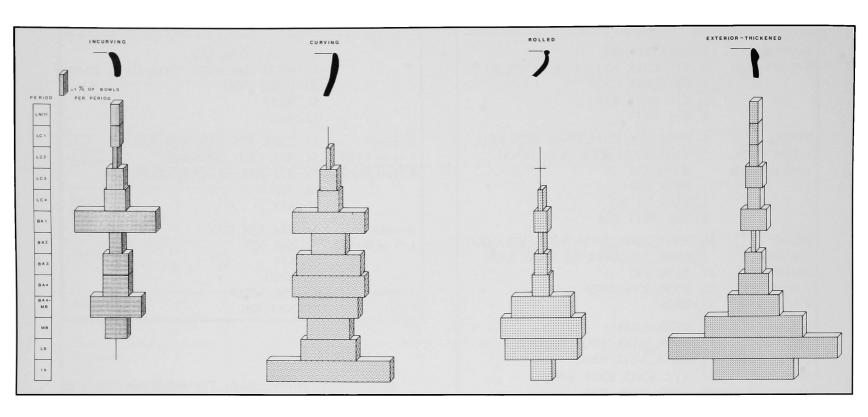


TABLE 102. GRAPHED FREQUENCIES OF VERTICAL, FLARING AND INVERTED BOWLS

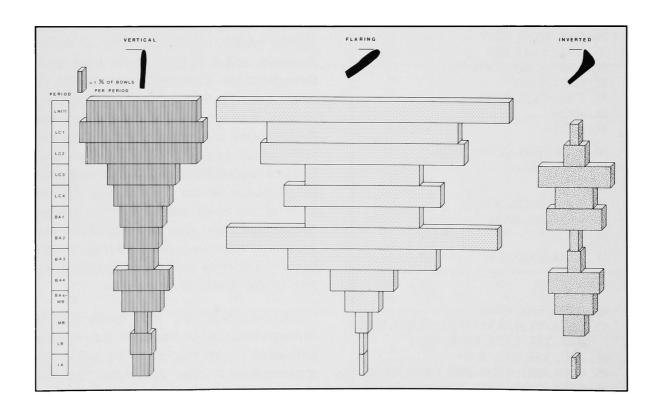
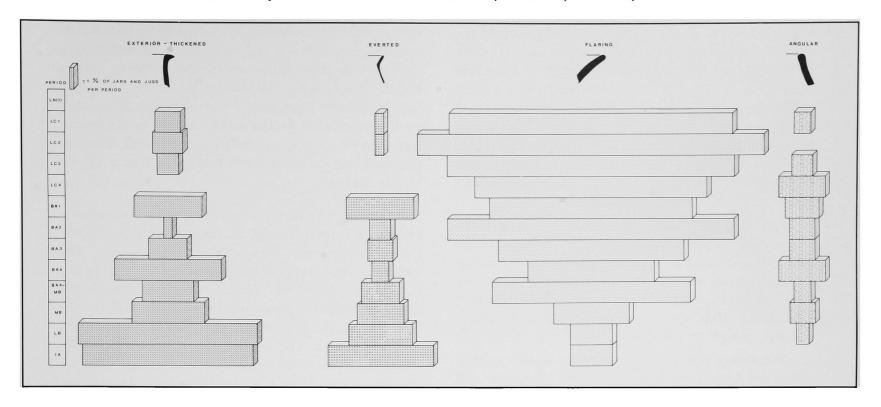


TABLE 103. GRAPHED FREQUENCIES OF EXTERIOR-THICKENED, EVERTED, FLARING, AND ANGULAR BOWLS



This family consists of 14 type-groups comprised of 40 types — the largest number of shape components. The 941 classified fragments — the second largest after the flaring family — account for only 2 % of the total fragments, 14 % of the bowl rims classified. These exterior-thickened bowls occur in all levels in significant numbers — in the Middle Bronze they represent 23 %, and in the Late Bronze they account for 40 % of the bowls and 63 % of their family. Their numbers then decline in the Iron Age to 19 %.

Vertical. 740 rim fragments are classed as vertical forms. They are upright and plain with no articulation. Vertical rims, the third most popular family, account for 12 % of the bowls. Eight families with 23 types compose this class that represents 1 % of the total sherd bulk.

These rims are found in all periods at Aphrodisias but they are particularly popular in the early periods. They account for 25 % of the rims in the Late Neolithic (?), but their percentage is particularly high in Late Chalcolithic 1, being 29 %; Late Chalcolithic 2, 26 %; Late Chalcolithic 3, 16 %; Late Chalcolithic 4, 13 %; and Bronze Age 1, 10 %. They then decline in number — hovering around 8-6 % for the Bronze Age 2 and 3 periods — until the Bronze Age 4 when they again attain a 13 % representation. From the Bronze Age 4 Middle Bronze to the Iron Age, their numbers slowly decrease.

Plain-carinated. Plain-carinated bowls exhibit a definite exterior corner-point of inflexion. This family is divided into sub-families based on size: small and large. Small carinated bowls have a diameter of ca. 0.10 m and

a vessel height of 0.06 m; they are usually wheel-thrown in a fine thin eggshell ware (EG), and are associated with the string-cut base. Large bowls are anything larger than 0.10 m, and are generally manufactured on the wheel with a plain ware (PW). In Table 99 the frequencies for both families are given separately. In the Late Bronze and Iron Ages these forms are decorated with either gold or silver slip-wash and sometimes they are decorated with red painting on the exterior.

Combining the frequencies of occurrence for both the large and the small, this family represents only 256 rims or 4 % of the bowls classified. It did not make its appearance at Aphrodisias until the Bronze Age 2, then two (1 %) small rims are classified. Their combined representation of large and small vessels thereafter is as follows: Bronze Age 3, 1 %; Bronze Age 4, 2 %; Bronze Age 4 Middle Bronze, 1 %; and Middle Bronze, 4 %. In the Late Bronze, small carinated bowls represent 9 % and large bowls 3 %, or 1 % of the total bowls. Combined, they account for 12 % of the bowl fragments classified for that period. In the Iron Age small carinated bowls decline slightly, representing 8 %, but large bowls increase, representing 7 % — together these forms are 15 % of the bowl fragments for that period.



287. Decorated bowl 2136.I Acropolis trench 8; Complex A-4 Phase II, Late Bronze Age.

Interior-exterior Thickened. As its name implies this family is thickened on both the interior and exterior with articulated corner points on both edges. The top of the rim edge is flattened horizontally. There are only three types in this family and they probably serve as large deep bowls or as jar forms. Only 27 fragments are classified; none are statistically strong, therefore this family should be dropped from the prehistoric Aphrodisias bowl assemblage. The family does appear in the Late Chalcolithic 1, Bronze Age 4, Bronze Age 4 Middle Bronze and Middle Bronze. In each of these periods, this shape never attains higher than 1 % of the bowl rims.

Flaring. Flaring shapes are a family of plain forms that spread outwards with no interior corner-point but with a bent inflexion point. Rim edges are not articulated. Complete forms indicate that accompanying bases are flat. This family includes all of the medium argillaceous ware-fabrics (PM) which are often decorated with both slip and burnish on the interior.

The flaring family is the single most popular form at prehistoric Aphrodisias. It accounts for 17 % of the total body sherds and 36 % of the bowl rims; it is present in every period — first appearing in the Late Neolithic (?) where the family accounts for a high 69 % of bowls typed. There is a decrease in the Late Chalcolithic 1 to 45 %; maintained in Late Chalcolithic 2 with 48 %; a smaller percentage in Late Chalcolithic 3, 27 %; then an increase in Late Chalcolithic 4, 37 %; and down again









288. Late Chalcolithic typical rim manufacturing technique.

- Top of a bowl rim showing how the clay is smoothed to the exterior; sloppy finishing technique.
- Bowl section (exterior is to the left; interior to the right), showing how the clay is pulled from the interior to the exterior.
- 3. Bowl section (interior to the left, exterior to the right),
- showing how the clay is slapped over from the interior to the exterior.
- 4. Exterior surface of the bowl rim showing an incomplete smoothing of the rim after the clay has been moved from the interior to the exterior. Note that the surface has cracked because of the lack of proper finishing.

in Bronze Age 1, 27 %. In Bronze Age 2 there is a marked increase and the family represents 64 % of the bowls of that period, but in Bronze Age 3 they again decline, accounting for 35 % of the bowl rims. Thereafter is a significant decrease in the general use of flaring forms: Bronze Age 4, 8 %; Middle Bronze, 3 %; and Late Bronze and Iron Ages, only 1 % respectively. Its popularity is first eclipsed by the curving family in the Bronze Age 4 period — and by the incurving, rolled, exterior-thickened, vertical and inverted families in Bronze Age 4 Middle Bronze.

Inverted. This family is characterized by the rim being bent inward to the vessel interior; there is a definite exterior corner-point from which the rim stands. The stance can be horizontal but it almost always slants inward; it is rarely, if ever, vertical. The rim is generally not articulated but it is sometimes found, particularly in the Late Chalcolithic, to be slightly thickened on the underside of the rim edge. The exterior rim is usually angularly flattened. These forms are not to be confused with the carinated family which is an overall biconical shape (body and rim) — whereas inverted relates solely to the rim. There is also a ware-fabric difference between them. The majority of inverted bowls are hand-manufactured from an argillaceous ware (PM). The color is generally confined to the dark gray tones and rims are almost always blackslipped and well-burnished; white paint rarely accompanies these forms.

Inverted bowl type-groups number five, composed of 18 types. They represent 6 % of the bowls and 1 % of the total fragments. Inverted rims first appear in Late Chalcolithic 1 in small numbers; by Late Chalcolithic 2 they have a 5 % presence. In Late Chalcolithic 3 their numbers represent a dramatic increase to 17 % of the bowls for that period, but their popularity is short-lived for they then decline in the Late Chalcolithic 4 to 9 %. Their presence is more important in Bronze Age 1, 13 %, after which they decline until Middle Bronze, 5 %. In the Late Bronze Age the family is absent from the corpus.

Angular. Typical of this family is a plain rim with or without an articulated exterior corner-point on its top edge. These are closed convex forms that are neither modeled nor thickened. Only 94 rim fragments belonging to this family are encoded — as a family they represent 1 % of the bowl forms recovered.

Everted. Everted rims are characterized by having an angular interior corner-point with the rim angle bent to the exterior of the vessel. The rims in this family at Aphrodisias are characterized by being plain forms that are angularly flattened on the exterior. The everted family is the smallest one represented at the site with only one

group composed of two types — and only 28 fragments registered. Its highest number, 5 %, is found in the Middle Bronze period.

Other. This « family » includes two forms that are statistically significant as types (0.05 %), but can not be placed in any of the usual family groupings because of their shapes.

Summary - Bowls

The most popular bowl shape of prehistoric Aphrodisias is the flaring form representing 22 % of the bowls. It is followed by the exterior-thickened family (14 %), by the vertical family (12 %), and by the curving shape (11 %). 12 % of the bowls are untypeable fragments.

The most dramatic indicators of change that can be noted in Table 99 are the strengths of vertical and flaring bowl families in the early periods... and families that have the exterior-thickened, rolled, or curving rims that dominate the later periods.



289. Tripod cooking pot 1403.I, Pekmez trench 1; Bronze Age 2 (Photo: Artemis A.W. Joukowsky).

Cooking Pots

Perhaps this category should be called « coarse wares » or « cooking wares. » Cooking pots are distinguished by a combination of attributes including the qualities of manufacture, ware-fabric, temper, texture, hardness, color, and shape. As would be expected in the early periods (Late Chalcolithic - Bronze Age 4), the method of manufacture is handmade coil construction (often the rim was an added coil of clay), but in the Middle Bronze many are wheelmade — as almost all are in the Late Bronze and Iron Ages. The interior surfaces normally bear traces of wet-smoothing; the walls, relatively even in thickness, range from 0.005-0.014 m. Like bowl forms, few cooking pots have necks — the rim is constructed directly upon the vessel's upper body or shoulder. The bases are almost always round or with podic additions. The ware-fabric is distinctively sandpaper-like in consistency, due to the addition of temper. Small-sized inclusions consist of crystalline calcite, quartz, and some grayto-black rock particles that are medium-to-small in size. Not infrequently the temper is organic. The coarseness of this (sandy) arenaceous ware can be attributed to the

density, amount, and type of inclusion which made the clay just lean enough to bind the fabric together so that it could withstand heat. This clay may be the same as that used for other vessels, but it is prepared differently and is of a different composition. After firing, the clay acquires drab colors — dirty browns, red-browns, grays, oranges, reds. Exteriors may or may not have been blackened by smoke but many sherds bear traces of secondary firing. Cores of this vessel class are generally black or blackened, and are infrequently even in coloration. Rim diameters range between 0.16 and 0.30 m. No handles are associated with these forms in the early periods (Late Chalcolithic - Middle Bronze) with the exception of appliqued knobs or small lugs. In the Late Bronze and Iron Ages, however, handles are found to occur frequently.

Six rim families are associated with cooking pots — including incurving, exterior-thickened, everted, flared, vertical and angular. All of these shape characteristics are described under bowls (*supra*). By far, flaring forms are again the most popular and account for 31 % of the

Count % Period % Family	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total	Total % Cooking Pots	
Incurving	_	14	14	5	1	3	6	13	10	9	1	0	5	81	4	0
	_	8 17	8 17	4 6	2 1	11 4	10 7	11 16	4 12	3 11	2 1	_	5 6	98		
		17														
Exterior-	_	6	8	14	6	2	2	0	19	30 10	9 15	225 68	67 64	388 100	22	1
Thickened	_	3 1	4 2	10 4	10 1	7 1	4 1	_	8 5	8	2	58	17	100		
Everted		8	5	4	7	2	5	16	65	52	20	49	1	234	13	0
Everted	_	4	3	3	11	7	9	14	26	18	33	15	1	100		
		3	2	2	3	1	2	7	28	22	9	21				
Flaring	_	60	94	82	35	12	23	48	62	112	14	14	1	557	31	1
		35	54	61	54	43	40	41	25	38	23	4	1	100		
	_	11	17	15	6	2	4	9	11	20	2	3				
Vertical	_	29	14	6	3	3	10	6	6	16	2	0	1	96	5	0
	_	17	8	4	4	11	18	5	2	6	3	_	1	99		
	_	30	15	6	3	3	10	6	6	17	2		1			
Angular		29	12	18	5	2	4	14	15	20	2	5	10	136	8	0
	_	17 21	7 9	13 13	7 4	7 1	7 3	12 10	6 11	7 15	3 1	1 4	9 7	99		
Untypeable		10	11	5	3	1	0	1	19	14	0	9	9	82	5	0
Chrypouble		6	6	4	4	3	_	1	8	5		3	9	99	•	Ū
	_	12	13	6	4	1	_	1	23	17	_	11	11			
Cooking Pots	_	17	17	1	5	3	7	19	51	38	12	29	10	209	12	0
not in	_	10	10	1	7	11	12	16	21	13	20	9	9	98		
Families		8	8	_	2	1	3	9	24	18	6	14	5			
Total	_	173	175	135	65	28	57	117	247	291	60	331	104	1783	100	3
Cooking	_	100	100 10	100	99 4	100	100 3	100 7	100	100	99	100	99	100		
Pots		10	10	7	4	1			14	16	3	19	6			-
% Period		1	2	20	2	3	6	4	2	9	7	5	7			
Total Period	471	13364	9002	655	3332	841	975	3003	7869	3213	816	6609	1509			
% Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4			
% of Cooking Pots		10	10	8	4	1	3	7	14	16	3	18	6	100		

total; rims with exterior-thickening are well behind in second place, 22 %. Everted forms account for 13 % and the remaining forms range between 1 % and 4 % of the total. Table 104 represents the numbers of cooking pot fragments per period. Tables 105 and 106 show their graphed frequencies. Table 107 lists cooking pot families and their combined types.

Cooking pots number 1783 or 3 % of the total typed fragments, and account for 17 % of the rims found at Aphrodisias. What is significant about these statistics is

that in the Late Neolithic (?) no cooking pots occur. And in Late Chalcolithic 1 and 2 they account for only 1 % and 2 % of the fragments classified. In Late Chalcolithic 3 they jump to account for 20 % — the highest percentage they attain in any period, but from Late Chalcolithic 4 to Bronze Age 4 their percentage is minimal. Beginning in Bronze Age 4 Middle Bronze they again have a high showing 9 % — only to diminish in successive periods (Middle Bronze, 7 %; Late Bronze, 5 %; and Iron Age, 7 %).

TABLE 105. GRAPHED FREQUENCIES OF INCURVING, EXTERIOR-THICKENED, AND ANGULAR COOKING POTS

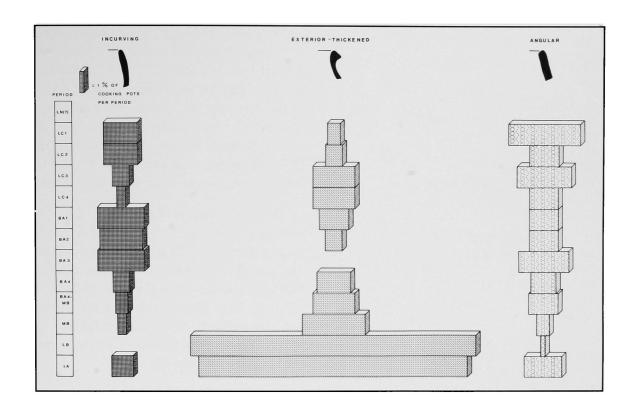


TABLE 106. GRAPHED FREQUENCIES OF EVERTED AND FLARING COOKING POTS

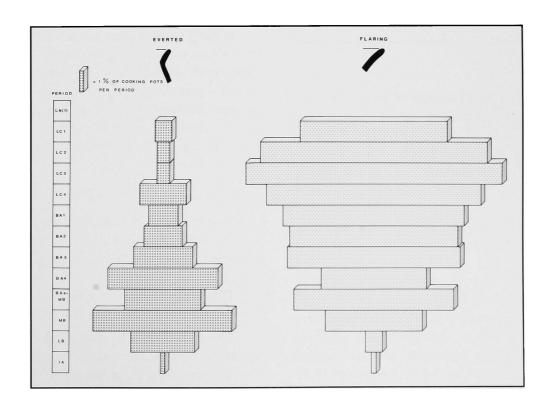


TABLE 107. COOKING POT FAMILIES AND TYPE ASSIGNMENTS

SHAPE-FORM	_
Family	Туре
Incurving 4 % of cooking	64. CP32, CP23 g pots
Exterior- Thickened 22 % of cooking pots	66. CP43, CP52, CP42, CP41 67. CP50, CC12, CP18, CC1
Everted 13 % of cooking pots	73. CC13, CP25, BC1 74. CC29, CC17, BC11 75. CP9, CP10 76. CP11, CP12, X13 77. CP5 78. BC15
Flaring 31 % of cooking pots	 79. CP30, CC6, CC32, CC27, CC25, CP1 80. CC26, CC30, CP35, CC15, CP36, MC2, CP37, CC15, CC31 81. CC9, CC10, BC2, CP3 82. CP31, CC11 83. CP47 84. BC3
Vertical 5 % of cooking	85. CC7, CP24, CP19 g pots
Angular 8 % of cooking pots	86. CP29, CP53, CP33, CP34, CP38, CP20 87. CP2, CP21

Incurving. This is a small family of only two types — and has the smallest occurrence of all cooking pot families, 4 %, with only 81 fragments. This form is popular from Bronze Age 1 to Bronze Age 3 periods, representing 10-11 % of the cooking pots. In the Bronze Age 4 period there is a substantial decline in numbers, a trend that continues into the Late Bronze Age when none at all are represented. In Iron Age contexts, only 5 % of this family are present. (See Table 105.)

Exterior-thickened. The exterior-thickened cooking pot has a representation of 338 fragments or 22 % of the rims. This family is comprised of eight type-groups and 20 types, and it occurs throughout all levels at Aphrodisias. The percentage is minimal in Late Chalcolithic 1-2, but in Late Chalcolithic 3-4 they represent 10 % of the fragments collected for the period. Between Bronze Age 1 and Bronze Age 2 their numbers slowly diminish until by Bronze Age 3 they disappear. In the later periods they are particularly popular, beginning to increase in

number in Bronze Age 4 and peaking to a 64 % representation in the Iron Age, accounting for 18 % of all cooking pots in that period. (See Table 105.)

Everted. 13 % or 234 cooking pot fragments are represented by this shape. It is a family of 13 types that falls into six type-groups. Excepting the Late Neolithic (?) and Iron Age periods where none at all are present, this family has sporadic popularity including Bronze Age 4, with 26 %, then a decrease to 18 % in Bronze Age 4 Middle Bronze. It peaks in the Middle Bronze Age with 33 %, again decreases in the Late Bronze to 15 %, and all but vanishes in the Iron Age. (See Table 106.)

Flaring. Flaring rims are by far the most popular cooking pot family represented at Aphrodisias. 557 fragments represent 31 % of the cooking pots recovered. Six type-groups incorporating 23 types make up this family. Although popular throughout all periods, it is particularly so in the Late Chalcolithic and the earliest Bronze Ages and continues to be strong in Bronze Age 4, peaks in Bronze Age 4 Middle Bronze when it represents 38 % of the cooking pot families.

Vertical. This family has 96 fragments classified, representing 5 % of the total cooking pot rims. It is composed of three types that fall into one type-group. The family high point is in Late Chalcolithic 1, 17 %, and after a general decline in Late Chalcolithic 2-4 it begins to reoccur in significant numbers in Bronze Ages 1 and 2, after which it is insignificant.

Angular. Representing only 135 fragments or 8 % of the cooking pots is this small family of two type-groups of eight types. It is particularly important in Late Chalcolithic 1 representing 17 % of the cooking pots, but then its numbers decrease, only to emerge again as significant in Late Chalcolithic 3, 13 %, and again in Bronze Age 3, 12 %. It declines in the remaining periods, but regains a 10 % representation in the Iron Age.

Summary Cooking Pots

In order of their statistical importance, flaring forms are the most popular with 31 %; followed by exterior-thickened shapes, 22 %; and everted, 13 %. These three families represent 66 % of all the cooking pots processed. The following summarizes their presence — other families can be judged by studying Table 104.

The flaring family dominates this class throughout almost all of the prehistoric periods until the Middle Bronze Age when it succumbs to the popularity of the everted family, and from that time through the Iron Age, it diminishes in importance. The second most numerous family is the exterior-thickened shape representing 388 fragments or 22 % of the cooking pots. It

seems to have two cycles of use: from the Late Chalcolithic to Bronze Age 2 it is present but represents small percentages. It is then absent from the corpus in the Bronze Age 3 — only to be reinstated and begin its second cycle in Bronze Age 4, 8 %; Bronze Age 4 Middle Bronze, 10 %; Middle Bronze, 15 %; and then a dramatic jump to 68 % in the Late Bronze Age; and a slight decrease in the Iron Age, 64 %. It overshadows all other forms in these two later periods.

Everted families are constantly in use throughout all periods at Aphrodisias. 234 fragments represent 13 % of the cooking pots. The family is prevalent in Late Chalcolithic 4, 11 %, after which its numbers decrease; but it represents fairly sizeable percentages in Bronze Age 3, 14 %; Bronze Age 4, 26 %; a decrease in Bronze Age 4 Middle Bronze, 18 %; but then in the Middle Bronze it

is the most popular family representing 33 % of the period. In the Late Bronze Age it declines, 15 %, and it all but dies out in the Iron Age, 1 %.

As in the bowl class, flaring and exterior-thickened families dominate the Aphrodisias cooking pot assemblage. But the overall percentages for the bowl and cooking pot classes are in reverse, which may have been due to the specialized function of specific shapes. Flaring cooking pots are popular throughout all periods, whereas flaring bowls are in more extensive use from the beginnings of Aphrodisias to the Bronze Age 4 period — when they are supplanted by other shapes that perhaps are more suited to specialized food consumption. Exterior-thickened rims of both bowls and cooking pots are popular in the later periods: Bronze Age 4 Middle Bronze to the Iron Age.

TABLE 108. FREQUENCY OF OCCURRENCE FOR JAR & JUG FAMILIES BY PERIOD

Count % Period % Family	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total Jugs	Total % Jars & (62,244)	Total %
Exterior-	0	3	4	4	0	4	1	12	57	36	9	63	8	201	17	0
Thickened	_	6	7	5	_	16	2	9	25	12	17	42	40	99		
		1	2	2		2	1	6	28	18	4	31	4			
Everted	0	1	1	1	0	4	3	9	10	19	6	22	5	81	7	0
	_	2	2	0	_	16	5	6	4	7	11	15	25	98		
	-	1	1	1	_	5	4	11	12	23	7	27	6			
Flaring	0	34	47	59	21	12	42	62	69	136	10	15	2	509	42	1
-	_	67	82	68	55	48	68	44	30	47	18	10	10	100		
	_	7	9	12	4	2	8	12	14	27	2	3	_			
Angular	0	2	0	4	4	2	4	9	25	12	3	5	0	70	6	0
J	_	4	_	5	11	8	6	6	11	4	6	3		98	-	-
		3		5	5	3	5	13	36	17	4	7	-			
Untypeable	0	1	0	5	3	0	4	10	14	17	2	15	3	74	6	0
	_	2	_	6	8	_	6	7	6	6	4	5	15	98		
	_	1	_	7	4	_	6	15	21	25	3	12	4			
Jars and Jugs	0	10	5	14	10	3	8	39	54	71	24	30	2	270	22	0
not in	_	19	9	16	26	12	13	28	24	24	44	25	10	99		
Families		3	2	5	3	1	4	14	19	25	9	13	1			
Total	0	51	57	87	38	25	62	141	229	291	54	150	20	1205	100	1
Jars &	_	100	100	100	100	100	100	100	100	100	100	100	100	99		
Jugs	_	4	5	7	3	2	5	12	19	24	4	12	2			
% Period	0	0	1	13	1	3	6	5	3	9	7	2	1			
Total Period	471	13364	9002	655	3332	841	975	3003	7869	3213	816	6609	1509			
% Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4		,	

Jars and Jugs

As many as 55 jar-rim types are identified and then distributed into four families — including flaring, exterior-thickened, angular, and everted. Table 108 shows the frequency of family occurrence by period. The jar/jug rims have diameters of approximately 0.09 m and all of these types are either flared or everted, and are often thickened to the exterior. Both jars and jugs are placed in the same category because, in our judgment of rim fragments alone, no clear-cut distinction could be made between the two. (A jar has two handles and a jug has only one). When handles are discovered with a jar rim, they generally are attached just below the rim edge to the upper body/shoulder, or from the rim edge itself to the upper shoulder. From the evidence we assume that most bases are either flat or round, and in shape the bodies are globular and sometimes ovoid. Some jars are neckless, others have short wide necks. Tankards and depas cups also are included in this family.

TABLE 109.

JAR AND JUG FAMILIES AND TYPE ASSIGNMENTS

SHAPE-FORM Family	Туре
Exterior- Thickened	88. J5, J15, J46, J48 89. BJ19, BJ31, BJ28, J3, CJ6, J4, J11 90. J13, J42, J12 91. J51, J47 92. J22, BJ39, J2, J14, J29, J1
Flaring	 93. BJ13, BJ3, BJ4, CJ1, CJ14, J37 94. J25, J34, MJ10, BJ34 95. BJ8, BJ10, BJ6 96. CJ12, CJ4, CJ13, CJ11, MJ4, CJ5, CJ2, BJ14, CJ8 97. J28 98. J36
Angular	99. CJ15, J7 100. J8 101. J9
Everted	102. BJ5, X74 103. J31 104. J49 105. BJ16

Temper-size is often found in direct proportion to the size and type of vessel. In thinner-walled vessels it is smaller than in larger vessels — obviously due to the fact that the thinner walls would be unable to support the large grit. The texture of the exterior is fairly fine when it is slipped and burnished. The interior texture is fine as far as the eye was able to detect, but rough and pitted particularly in the lower body interior. In most cases jar forms are manufactured by coiling in two

parts, which are stuck together where the rim is attached to the upper body. Often some slip or extra clay is added at the seam.

This class of vessels represents 1 % of the total number of fragments (1208 fragments); 7 % of the diagnostics and 12 % of the rims. None of this class appears in the Late Neolithic (?), but there is a consistent pattern for Late Chalcolithic 1-3 (4 %, 5 %, 7 % respectively), after which their numbers during the Late Chalcolithic 4 and Bronze Age 1 periods decrease. In Bronze Age 2, jar and jug numbers begin to climb (5 %) and increase throughout the Bronze Age: Bronze Age 3 (12 %); Bronze Age 4 (19 %); and peak in the Bronze Age 4 Middle Bronze period to achieve 24 % of their representation. After a dramatic decrease in the Middle Bronze (11 %), they have an upsurge in the Late Bronze (12 %), and again diminish in the Iron Age (22 %).

Summary Jars and Jugs

The development of this class seems to indicate that flared forms are popular throughout the Late Chalcolithic and Early Bronze Age. Their position begins to be contested in the Middle Bronze Age by the exterior-thickened family which then proceeds to dominate the assemblage in the Late Bronze Age. Flaring forms maintain their 10 % presence in the Iron Age and continue to be overshadowed by exterior-thickened, 42 %, and everted families, 25 %. It may be said that flared forms dominate the jars and jugs, as they do other ceramic rim classes, throughout the early periods at Aphrodisias — but that the later periods of Middle and Late Bronze Ages and Iron Age find exterior-thickened and everted families taking over the dominant role.

Pithoi and Large Jars

Pithoi, because they are so large, appear to be piece-formed. Fracture lines are generally indicative of the points of juncture. The vessels are not uniform, the clay is not evenly distributed, and depressions are sometimes found in different areas. It is hypothesized that perhaps these are areas that were used for support while the vessel was drying, or that they occurred during firing. Evidence of shrinking and diagonal pulling (striations) is also noted, particularly in the thick interiors of base fragments. These bases are either rounded or flat, and must be made to give adequate support for the coil-constructed body. Because of the difficulties in managing the clay, the base is not always placed in the center.

The body is globular in shape and necks are either nonexistent or else they are wide, short and concave. Rims are generally flared, but vertical and hole-mouth varieties also occur. Rim diameters vary depending on the

TABLE 110. FREQUENCY O	F	OCCURRENCE FOR	PITHOS	FAMILIES BY	PERIOD
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Count % Period % Family	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total	Total % Pithos	Total % (62,244)
Exterior-	0	0	0	0	0	0	0	10	0	5	1	44	1	61	14	0
Thickened	_	_	_	_		_	_	20	_	6	4	54	5	100		
			_	_	_	_	_	16	_	8	2	72	2			
Everted	0	0	0	0	0	0	0	17	0	15	7	24	7	70	17	0
		_		_	_		_	33	_	19	27	30	39	99		
	_	_	_	_	_	_	_	24	_	21	10	34	10			
Flaring	1	7	10	27	11	0	15	8	6	13	1	1	0	100	24	0
&	50	35	42	53	92	_	54	16	25	17	4	1	_	100		·
	1	7	10	27	11	_	15	8	6	13	1	1	_			
Untypeable	0	2	5	6	0	2	2	4	0	3	2	5	5	36	9	0
, p	_	10	21	12	_	100	7	8	_	4	7	6	28	98		·
	_	5	14	17	_	5	5	11	_	8	5	14	14			
Pithos	1	11	9	18	1	0	11	12	18	41	15	7	5	149	36	0
not in	50	55	37	35	8	_	39	23	75	53	58	9	28	100		
Families	1	7	6	12	1		7	8	12	28	10	5	3	i		
Total	2	20	24	51	12	2	28	51	24	77	26	81	18	416	100	0
Pithoi	100	100	100	100	100	100	100	100	100	99	100	100	100	99		
	_	5	6	12	3	_	7	12	6	19	6	19	4			
% Period	0	0	0	8	0	0	3	2	0	2	3	1	1			
Total Period	471	13364	9002	655	3332	841	975	3003	7869	3213	816	6609	1509			
% Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4			

TABLE 111. PITHOS FAMILIES AND TYPE ASSIGNMENTS.

SHAPE-FORM	
Families	Туре
Flaring	108. P8, CE12
	109. CE8, BP4, CE4
	110. P5, BP6
Exterior-	111. BP7, P17, P12
Thickened	112. P2, P15
	113. P16
	114. P13
Everted	115. P4, BP9, P14
	116. P7

size of the vessel, ranging from 0.20 to 0.50 m. The texture and ware-fabric is coarse and contains diverse types of organic and inorganic impurities — despite these inclusions, the ware is very hard. The core is most often found to be fired black and the wares themselves are drab

grays and salmon colors. The basic surface finish is composed of smoothing on both the interior and exterior of large forms, — but smaller closed forms are smoothed only on interior necks, rims and exteriors. Sometimes an exterior slip is added and the vessel burnished. On the whole, however, burnishing is rarely associated with these forms.

This category of 416 fragments is under 1 % of the total body sherds and accounts for 2 % of the diagnostics excavated and 4 % of the rims. Yet with no exceptions, rims from this class are found in all excavated periods. Table 110 gives the statistics of the frequency of occurrence per family for each period. Their highest percentage is in Late Chalcolithic 3 where 51 rim sherds are 8 % of that period's assemblage. The strongest component of this category is a flared family — representing 24 % of all the rims in the pithos class and consistently popular throughout all periods excepting Bronze Age 1, and then the Iron Age when it disappears from the assemblage. The everted family is second with a 17 % representation of the encoded sherds. (See Table 112 for graphed frequencies.)

BA4 MB

I.A

PERIOD

PER PERIOD

LINIT

LC2

LC2

LC3

LC4

BA1

BA3

BA3

TABLE 112. GRAPHED FREQUENCIES OF EXTERIOR-THICKENED, EVERTED AND FLARING PITHOI

Baking Trays

Baking trays are constructed by what might be described as the « blob method. » Very thick wet coils and blobs are built onto one another until the desired width of a range of 0.13-0.44 m is achieved. All of these round forms appear to be manufactured on the ground or on a type of matting — because their under-surfaces contain larger than normal pebble inclusions and sometimes mat-like impressions. At Aphrodisias early baking trays are flat; but most of the later examples, from the Bronze Age 1 period and later, have a small projecting irregular rim edge or ridge.

The very coarse ware-fabric of many of the types is composed principally of two types: PX and PS wares. The first of these is a light yellowish-brown spongy thick fabric that is defined earlier in this section as « thick coarse » (PX) ware. It is characterized by being packed with inorganic and organic inclusions and is very brittle and soft; also it tends to crumble — the clay is probably quite wet and poorly levigated when the pan is constructed. In section, areas of thick clay patches are sometimes evident. The majority of fragments are found to bear haphazard burnishing which makes the upper surface of the pan smooth.

PS ware is colored red-brown; infrequently, ware colors such as pinks and grays occur. It is not as spongy, thick, or as brittle and soft as the ware-fabric discussed above. It has far fewer organic inclusions and although it is brittle, it does not crumble as easily as the

PX wares. The cores of these trays are evenly fired, which may have been because they are so often refired in use, and usually the rims are fire-blackened. Characteristic of the class is that their undersides are always rough. The upper surfaces are relatively smooth, and a few forms are found both slipped and burnished — exhibiting signs of having been smoothed while the clay was still in a plastic state.

These trays may have been used for baking flat bread in the way women in the Middle East now make bread on a metal tray — which has much the same form as a pizza tray. The purpose of the burnishing may have been to keep the raw bread dough from sticking to the tray and the purpose of the slight vertical ridge around the rim would be to contain the dough mixture.

243 baking tray rims account for less than 1 % of the total typed sherds and only 1 % of the diagnostics. They represent 5 % of the rim types. 22 types compose this class which are not combined into families. Only two are of statistical significance: Type BT1 (Figure 385.27), and type BT4 (Figure 385.42). The frequencies for this class can be found on Table 113. Baking trays are introduced to Aphrodisias in the Late Chalcolithic 1 — it is also in this period that they have their highest representative numbers, 46 %. 112 fragments, or 1 % of the fragments typed for that period are baking trays. Fewer fragments are represented in the succeeding levels, and after the Bronze Age 3 period they completely disappear.

TABLE 113. FREQUENCY OF OCCURRENCE FOR BAKING TRAY FAMILIES BY PERIOD

Count % Period % Family	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA		Total % Baking Trays	Total % (62,244)
BT1	0	31	6	2	5	0	0	0	1	0	0	0	0	45	19	0
	_	27 69	9 13	9 4	56 11	_	_	_	8 2	_	_		_	99		
BT2	0	6	1	0	0	0	0	0	0	0	0	0	0	7	3	0
	_	5 86	2 14	_	_	_	_	_	_	_	_	_	_	100		
BT3	0	3	0	0	0	0	0	0	0	0	0	0	0	3	1	0
	_ _	3 100		_ _	_ _	_ _	_ _ _	_ _	_	-	_	_	_ 	100	1	Ū
BT4	0	31	23	12											24	
D14	_	28	35	13 59	2 22	5 100	5 56	0	4 33	0 —	0	0	0 —	83	34	0
		37	28	16	2	6	6	_	5		_		_	100		
BT5	0	3	0	0	0	0	0	0	0	0	0	0	0	3	1	0
	_	3 100	_	_	_	_	_	_	_	_	_	_	_	100		
BT6	0	5	1	1	0	0	0	0	0	0	0	0	0	7	3	0
	_	4 71	2 14	5 14	_	_	_	_	_	_	_	_	_	99		
BT7	0	2	6	1	1	0	0	3	0	1	0	0	0	14	6	0
	_	2 14	9 43	5 7	11 7	_	_	100 21	_	17 7	_	_	_	99		
BT8	0	0	5	0	0	0	1	0	0	0	0	0	0	6	2	0
	_	_	7 83	_	_	_	11 17	_	_	_	_		_	100		
BT9	0		5	1	0	0	0	0	0	0	0	0	0	7	3	0
	_	1	7	5	_	_	_	_	_		_	_	_		-	-
		14	71	14							_			99		
BT10-BT13 BT14-BT20	0	0	1	1 5	1 11	0	2 22	0	6 50	3	0	0	0	14	6	0
BT21-BT22	_	_	2 7	7	7	_	14	_	43	50 21	_	_	_	99		
Untypeable	0	30	17	3	0	0	1	0	1	2	0	0	0	54	22	0
	_	27 56	26 31	14 5	_	_	11 2	_	8 2	33 4	_	_	_	100		
Total	0	112	65	22	9	5	9	3	12	6	0	0	0	243		0
Baking Trays	_	100 46	99 27	100 9	100 4	100 2	100 4	100 1	99 5	100 2	_	_	_	100		
	_ _													100		
% Period		1	1		_	1	1	_					_		100	0
Total Period	471	13364	9002	9989	3332	841	975	3003	7869	3213	816	6609	1509			
% Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4			

- 1. Baking Tray Type BT1. BT1 has the second strongest presence (19 %) of all baking trays. It shares honors with eight other types that are contemporary. In the Late Chalcolithic 1 this type represents 27 % of the baking trays, but for some reason its appearance is minor in the succeeding periods, Late Chalcolithic 2 Late Chalcolithic 4, and it drops out of the assemblage completely in Bronze Age 1. This form is always manufactured from the yellowish-brown spongy thick (PX) ware and its top is generally burnished. Its illustration appears on Figure 385.27, p. 532, and its frequency is graphed on Table 113.
- 2. Baking Tray Type BT4. This tray is characterized by an angular rim that slopes to the pan's base. It generally is manufactured from red-brown coarse ware (PS), which is thinner than the yellow-brown (PX) ware-fabric used for the production of BT1 types. It is normally smoothed on both upper and lower surfaces but is rarely burnished.

This is the most popular type of baking tray, represented by 83 forms or 34 % of the baking tray rims classified. Thirty-one of these forms appear in the Late Chalcolithic 1 period when it is introduced and achieves its highest single percentage, 37 %. In Late Chalcolithic 2, 23 %; in succeeding periods to Bronze Age 2 its numbers slowly decline until in Bronze Age 3 it is absent, and then reappears in Bronze Age 4. Thereafter it disappears from the assemblage. This form is drawn on Figure 385.42; its graphed frequency can be found on Table 113.

Some of the baking trays in the type series have published parallels that can be identified — but forms in this category appear to develop at Aphrodisias independently from those at Beycesultan. The earliest correspondance from Beycesultan appears in Lloyd and Mellaart, 1962: Figure P.7.19 Level XXXI. The typical L.Ch.2 and L.Ch.3 form, again with a high rim, is represented (*ibid*) in Figure P.8.24; and in Figure P.13.12-17 of Levels XX-XXIV or LC4. Another pan from Beycesultan (*ibid*, Figure P.13.15) can be paralleled with a baking tray rim from Aphrodisias Bronze Age 1 contexts (Figure 393.13).

In summary, this class of objects at Aphrodisias seem to be Chalcolithic in origin and enjoy popularity into the later Late Chalcolithic periods. Flat forms are succeeded by those with an articulated ridged edge that appear in the Early Bronze Age — neither the ware nor the class is recognized at Aphrodisias later than the beginning of the Middle Bronze Age. At that time there may have been a technological change — they are either supplanted by another object that serves a similar purpose, or perhaps their absence from the later assemblages is an indication of a change in dietary habits.

Spouts

Below is a listing of spout families and the types assigned to them.

TABLE 114. SPOUT FAMILIES AND TYPE ASSIGNMENTS

SHAPE-FORM Family	Туре
Trough	S3
Quatrefoil	BS4
Trefoil	J36, J51, J54, J55
Beak	BJ42, BJ43, S10
Long Beak	S1
Cutaway	BS1, BS5, BS6, BS7
Tubular	MS3, S2, BS3
Miscellaneous	BS2

Seven spout families with 17 types are represented in the ceramic corpus: trough, quatrefoil and trefoil spouts, beak, long beak, cutaway, tubular and a miscellaneous family. (None of the spouted vessels from the pithos burials are included in these statistics.) This class of fragments is a useful indicator of style adaptation, acceptance, and the interrelationships between sites (see also the discussion of correspondences Part 5). No spouted vessels occur at Aphrodisias before the Bronze Age 2 period when five spouts (3 beak, 1 cutaway, and 1 miscellaneous) appear. In the Bronze Age 3, their number increases to 14 (2 trefoil, 4 beak, 5 cutaway, 1 miscellaneous and 2 untypeable); it then decreases in the Bronze Age 4 with only nine spouts registered (1 long beak, 5 cutaway, 1 tubular and 2 untypeable spouts). In the Middle Bronze Age there is a significant jump to 32 spouts represented (2 quatrefoil - introduced at this time, 9 trefoil, 6 beak, 7 cutaway, 3 tubular and 5 untypeable); but in the Middle Bronze there is again a marked decrease





290. Zoomorphic ceramic spout 713.11 Acropolis trench 7; Complexes D-E, Middle Bronze; catalogued as a « stag's head ».

TABLE 115. FREQUENCY OF OCCURRENCE FOR SPOUT FAMILIES BY PERIOD

Count % Period % Family	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total	Total % Spouts	Total % (62,244)
Trough	0 — —	0 — —	0 _ _	0 —	0 	0 	0 	0 _ _	0 _ _	0 	0 _ _	2 3 100	0 _ _	2 100	1	0
Quatrefoil	0	0 —	0 _ _	0 _ _	0 _ _	0 _ _	0 _ _	0 _	0 _ _	2 6 100	0 _ _	0 _ _	0 	2 100	1	0
Trefoil	0 _ _	0 _ _	0 	0 	0 _ _	0 —	0 _ _	2 14 6	0 _ _	9 28 27	1 11 3	20 30 61	1 100 3	33 100	24	0
Beak	0 	0 _ _	0 _ _	0 _ _	0 	0 _ _	3 60 23	4 29 31	0 _ _	6 19 46	0 _ _	0 _ _	0 _ _	13 100	10	0
Long Beak	0 _ _	0 _	0 _ _	0 _ _	0 _ _	0 _ _	0 _ _	0 _ _	1 11 8	0 <u>-</u> -	0 _ _	12 18 92	0 _ _	13 100	10	0
Cutaway	0 — —	_ 	0 _ _	0 _ _	0 _ _	0 _	1 20 4	5 36 20	5 56 20	7 22 28	7 78 28	0 _ _	0 	25 100	18	0
Tubular	0 	0 	0	0 	0 _ _	0 —	0 _ _	0 —	1 11 3	3 9 9	0 —	28 42 88	0 	32 100	24	0
Miscellaneous	0 	0 	0 _ _	0 _ _	0 _ _	0 _ _	0 - -	1 7 33	0 _ _	0 _ _	0 _ _	2 3 67	0 	3 100	2	0
Untypeable	0 	0 	0 	0 _ _	0	0 _ _	1 20 8	2 14 15	2 22 15	5 16 38	1 11 8	2 3 15	0 _ _	13 99	10	0
Total Spouts	0 —	0 	0 _ _	0 _ _	0 	0 _ _	5 100 4	14 100 10	9 100 7	32 100 23	9 100 7	66 99 48	1 100 1	136 100	100	0
% Period	0	0	0	0	0	0	1	0	0	1	1	1	0			
Total Period	471	13364	9002	9989	3332	841	975	3003	7869	3213	816	6609	1509			
% Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4			

as only nine are represented (1 trefoil, 7 cutaway and 1 untypeable). In the Late Bronze Age there is a tremendous upsurge in spout popularity for 66 are represented (2 trough, 20 trefoil, 12 long beak, 28 tubular, and 4 miscellaneous and untypeable). Curiously, in the Iron Age there is a dramatic decrease — only one trefoil spout is encoded.

Necks

Only 114 necks are found in these deposits. Table 116 gives the frequencies for the two types that are recognized (only 33 fragments, 29 % of the necks), however 81 or 71 % fragments are placed in the untypeable category. This class begins in the Late Chalcolithic and manifests a steady growth until the end of Late Chalcolithic 4. In Late Chalcolithic 3 they reach their peak at

Aphrodisias with 28 fragments, representing 24 % of the total necks. There is a break in Bronze Age 1 and Bronze Age 2 when none appear. They reappear in Bronze Age 3, again grow in popularity in Bronze Age 4, attain another

high point in Bronze Age 4 Middle Bronze, after which they once more decrease in numbers. Further studies may help to ascertain the relative importance of this class.

Count % Period % Family	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total	Total % Necks	Total % (62,244)
NI	0 	0 _ _	0 _ _	0 _ _	0	0 _ _	0 _ _	0 _ _	6 32 23	20 83 77	0 	0 _ _	0 	26 100	23	0
N2	0 _ _	0 	0 _ _	0 _ _	0 	0 	0 _ _	0 —	0 	0 —	0 _ _	0 	7 100 100	7 100	6	0
Untypeable	0 _ _	6 100 7	18 100 22	28 100 35	5 100 6	0 _ _	0 _	3 100 4	13 68 16	4 17 5	1 100 1	3 100 4	0	81 100	71	0
Total Necks	0 _ _	6 100 5	18 100 16	28 100 24	5 100 4	0 _ _	0 	3 100 3	19 100 17	24 100 21	1 100 1	3 100 3	7 100 6	114 100	100	0
% Period	0	0	0	0	0	0	0	0	0	0	0	0	0		_	
Total Period	471	13364	9002	9989	3332	841	975	3003	7869	3213	816	6609	1509			
% Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4			

TABLE 116. FREQUENCY OF OCCURRENCE FOR NECK FAMILIES BY PERIOD

Bases

Bases number 2519, only 4 % of the total fragments encoded (Table 118). They account for 14 % of the diagnostic shapes. The base typology is determined by five major families: podic; round (two sub-families: large and small); flat (two sub-families: large and small); ring (three sub-families: high, small, and large); and the so-called « omphalos » base. The periods with the highest percentages are Late Bronze, 28 %, and Bronze Age 4 — Middle Bronze, 16 %; together they represent 44 % of all the bases.

Table 118 indicates that flat bases are the most popular form (consistently used, although ring bases had a higher numerical occurrence), and round bases are also consistently represented. Horizon markers are the podic, ring bases and « omphalos » families.

At Aphrodisias, the statistics for bases cannot be considered a realistic gauge because many samples are lacking in distinguishing characteristics — this is particularly true of rounded types that may have been inadvertently classed as body sherds — especially round

thin-walled base types with their lack of articulation. Nevertheless, base calculations are important because combined with rim data they often determine the completed vessel form and provide an index as to the innovation of manufacturing techniques throughout the prehistoric periods. In Table 117 is a listing of base families and the types assigned to them.

Ring bases. Three sub-families of ring bases are distinguished: high (trumpet or ogee), large (more than 0.06 m in diameter), and small (less than 0.06 m in diameter). Each sub-family is given separate statistical counts on Table 118. At Aphrodisias most ring bases — characterized by a circular band of clay surrounding the bottom of the vessel — are products of the Middle Bronze Age (79 % of the total ring bases). Their presence fluctuates throughout periods but the sub-family with the most popular representation is the large ring base — it begins to be significant in Bronze Age 4, with the greatest numbers accruing in the Late Bronze, 44 %, and Iron Age, 34 %. Although high ring bases represent only 6 % or 153 of



291. Late Bronze manufacturing techniques of base scoring; Acropolis trench 8 (Photo: the author).

TABLE 117. BASE FAMILIES AND TYPE ASSIGNMENTS

Family	Туре
Podic	117. B31, BB13, B32, CH51, CH50, CH48, B96, CH38, B92, B91, CB3, B95, CB4, B90, CB2, CB11, B93, BB3, BB6, BB8, BB9, BB10, BB20, BB22, BB32, BB34, BB39, BB43
Round	
(large)	118. B74, B29
(small)	119. B87, B7, B23, B86, B22, B28
Flat	
(large)	120. B94, B66, B70, B6, B12, MB10
	121. BB1, BB4, BB35, B71, B73, B77, B88,
	B83, B89, B67
	122. B64, BB18, B82, B5
(small)	123. B81, B79, B3, B1
	124. B50, BB23, B13, B2, B3
	125. B30
Ring	
	126. BB11, BB25, B43, B55, B17, B47, B51,
(high)	B48
(large)	127. BB17, B17, BB31, B18, B16, B46, B53,
	MB48, BB12, B15
	129. B14
(small)	130. B19, B52, BB30
	131. B21, B35, B36
« Omphalos »	132. BB26

the total bases, this number is not insignificant for often these bases are found complete or nearly complete. Beginning in Bronze Age 2 these forms are in small numbers until the Middle Bronze when they reach their peak—representing 17 % of all the bases for that period; they continue in strong numbers to the Iron Age (13 %).

The methods of manufacture as well as the height and degree of angularity in the stance serve as the basis for distinctive groups of ring bases. Most low and medium ring bases are wheel-manufactured after the vessel bottom was closed. In some cases a clay coil is added to form the base; in other cases it is evident that the ring is formed from the surplus clay of the parent pot.

The popular large ring base is associated with the large deep bowl since the interior and exterior surfaces of both are found to be smoothed and well-finished. Often the exterior bears traces of having been in direct contact with firing. Large ring bases of Late Bronze and Iron Age wheel-thrown vessels are shown in Figure 291. The manufacturing techniques are clear. The bowl is made before the base and left on its bottom to dry. Just before the bowl becomes leather-hard, the base is manufactured. The underside of both is then scored to provide adhesion of base to parent pot. The ring is added, and once the desired form is achieved, the vessel is dried on its rim. The ware of most bases is hard and well-smoothed, but it is often found that the fabric of the base holds more temper than does the pot.

For high ring bases, such as those used for pedestalled bowls or chalices, superimposed coils are worked until the desired height is achieved. Smoothing and decoration such as fluting or fenestration follow. The base is then attached to the vessel exterior with an adhesion slip and finally both are smoothed off to their finished form. Small pedestalled ring bases begin in the Bronze Age 2 period at Aphrodisias and their numbers become strong in the Late Bronze and Iron Ages.

Flat bases. These bases are characterized by having a horizontal surface. Two families comprise the flat base: large (over 0.06 m in diameter), and small (0.06 m in diameter or less). Typological group divisions are then based on size, shape, wall thickness, and manufacture. All of these are either hand-coiled and share the same basic qualities of plain medium (PM) ware-fabric, or are wheel-thrown and are associated with plain medium wheel-manufactured wares (PW). In the Late Bronze and Iron Age many flat string-cut bases are manufactured for small carinated bowls.

Some of the smaller flat bases are used for the so-called eggshell ware bowls, so popular in later periods and so finely manufactured that it is rare to see any signs of finishing on any of their surfaces. These bases generally accompany open forms — both surfaces are well-finished, being slipped and burnished. This small flat base accounts for 322 or 13 % of the bases and is tied with podic bases for popularity. It finds its greatest representation after Bronze Age 4, 9 % — it starts on a climb to 12 % in Bronze Age 4 - Middle Bronze, then to 22 % in the Middle Bronze, peaks in the Late Bronze Age, 27 %, but in the Iron Age it drops to 8 % of the bases typed for that period.

TABLE 118. FREQUENCY OF OCCURRENCE FOR BASE FAMILIES BY PERIOD

Count % Period % Family	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total	Total % Base	Total % (62,244)
Podic	0	7	44	105	17	1	31	29	37	43	2	1	6	323	13	1
	_	5 2	27 14	46 33	31 5	5 —	30 10	15 9	14 11	10 13	2 1	_	5 2	100		
Round	2	55	67	56	25	10	14	27	47	47	18	6	15	389	15	1
	7 0	40 14	42 17	25 14	46 6	47	14 4	14 7	18 12	12 12	15 5	1 2	12 4	100		
Flat	8	44	29	27	6	5	30	 59	42	127	19	23	18	437	17	1
(large)	31 2	32 10	18 7	12 6	11	24 1	29 7	31 14	16 10	31 29	16 4	3 5	14 4	100		
Flat	8	8	1	0	0	0	2	10	23	48	26	186	10	322	13	1
(small)	31 2	6 2	_	_	_	_	2 1	5 3	9 7	12 15	22 8	27 58	8	99		
Ring	0	0	0	0	0	0	4	7	2	7	2	115	16	153	6	
(high)	_	_	_	_	_	_	4	4 5	1 1	2 5	2 1	16 75	13 10	100		
Ring	0	1	0	0	1	0	1	9	46	39	20	305	43	465	18	1
(large)	_	<u> </u>	_	_	_	_	_	5 2	18 10	10 8	77 4	44 66	34 9	99		
Ring	0	0	0	1	0	0	0	3	8	16	2	35	9	74	3	0
(small)	_	_	_	1	_	_	_	2 4	3 11	4 22	2	5 47	7 12	100		
« Omphalos »	0	0	0	0	0	0	0	5	1	0	0	0	0	6	0	0
	_	_	_	_	_	_	_	83	0 17		_		_	100		
Untypeable	2	11	6	10	0	0	5	11	19	13	4	12	1	94	4	0
	7 2	8 12	4 6	4 11	_	_	5 5	6 12	7 20	3 14	3 4	2 13	1	100		
Bases	6	11	14	28	5	5	16	28	35	64	24	12	8	256	10	0
not in Families	23	8	5	12 11	9	24	15 6	15 11	13 14	16 25	21 9	5	6	99		
Total base	26	137	161	227	54	21	103	188	260	404	117	695	126	2519	99	5
	99 1	100 5	100 6	99 9	99 2	100 1	100 4	100 7	99 10	100 16	100 5	100 28	100 5	99		
% Period	6	1	2	2	2	3	11	6	3	13	14	11	8			
Total Period	471	13364	9002	9989	3332	841	975	3003	7869	3213	816	6609	1509		×	
% Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.33	10.6	2.4			



292. Black-slipped pedestal base 523.1*, Acropolis trench 5; Complex I, Bronze Age 4 - Middle Bronze.

TABLE 119. GRAPHED FREQUENCIES OF ROUND AND FLAT BASES

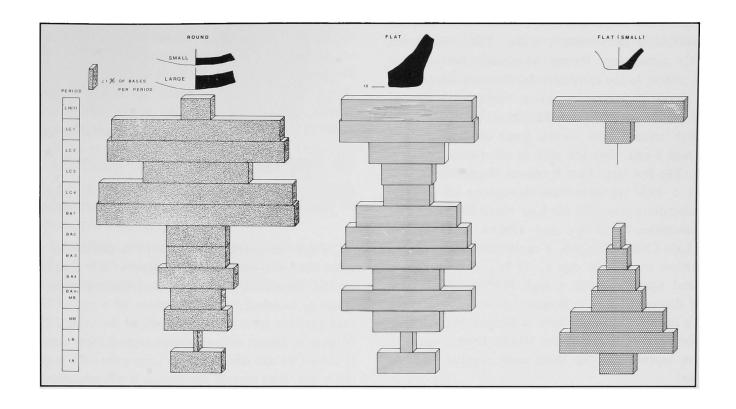
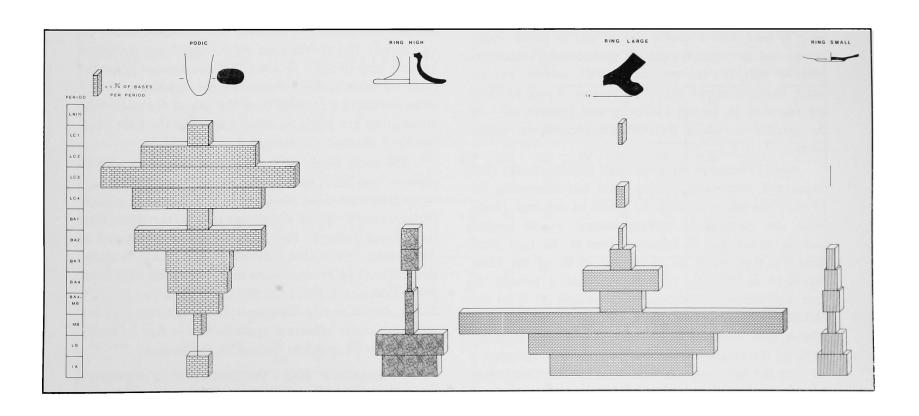


TABLE 120. GRAPHED FREQUENCIES OF PODIC AND RING BASES



Large flat and thick-walled bases are often slightly concave with a marked corner-point between the base and the lower body wall. In general this type is crudely finished — hand and finger marks are often visible, and the interior surface is lumpy and irregular. These base types presumably accompany flaring wheelmade bowls, large jars, and pithoi. In the early periods, the hard ware-fabric contains many inclusions - often burnt-out traces of vegetable matter are observed. The colors generally range in the drab salmon hues — but from the later periods (Bronze Age 2 on), they are pink in color and are better levigated. The flat large base is second in popularity — it maintains a high representation throughout all periods, but is particularly strong in the Late Neolithic (?), 31 %; Late Chalcolithic 1, 32 %; and after a slight decline through Late Chalcolithic 2-4, it again climbs to a significant position in Bronze Age 1, 24 %; Bronze Age 2, 29 %; and again achieves a high 31 % in the Bronze Age 3. It drops to 16 % in Bronze Age 4 and once more assumes a position of importance in Bronze Age 4 Middle Bronze, 31 %; drops in the Middle Bronze again to 16 %, yet representing the third most popular form in that period.

Round bases. The round base is curved or semicircular in cross-section. It is generally handmade, coiled and drawn up; and types are distinguished on the basis of the thickness and density of the clay. Among the most prominent are thick-walled, unarticulated, rounded types that belong to large jars or jugs, but unarticulated rounded forms are used for smaller vessels as well. The ware is hard with a coarse texture due to pebble inclusions; and the color is generally drab ranging form dirty grays to reds, browns and salmon-reds. Interior and exterior scraping marks are often evident. Many of these are recorded as having black-slip and burnish only on the exterior — which indicates they accompany closed forms.

Round bases are the third most popular family (389) fragments), comprised of nine types and accounting for 15 % of the bases encoded. As would be expected, round bases are particularly well-represented in the earliest periods. After a 2 % representation in the Late Neolithic (?), they jump to 40 % and 42 % of the bases excavated in the Late Chalcolithic 1 and 2 periods. In Late Chalcolithic 3, they account for only 25 % of the period, overwhelmed by podic forms. In Late Chalcolithic 4 their numbers increase again and they represent 46 % of the fragments for that period. In Bronze Age 1 they are the most popular base form (47 %). Once again they decline in numbers to hover between 12 %-18 % of the base families until by Late Bronze Age they account for only 1 % of the base family assemblage. But in the Iron Age, their representation is up to 12 %.





293. Grooved podic base 1473.5*, Pekmez trench 2; Bronze Age 2.

294. L. 1470.3*, Pekmez trench 2; Levels V-IVe Bronze Age 2 R. 1470.4*, Pekmez trench 2; Levels V-IVe, Bronze Age 2

Podic bases (Figures 293-294). A podic base rests on more than one point of solid support. It is manufactured by the formation of a small cone-shaped piece of clay which is attached to the underside of a round base and then projects from the lower body of the vessel. This type of base is almost always manufactured from coarse ware (CH or CP) and often exhibits large grits — it is coarse to the touch, even though the surface is wet-smoothed. In the manufacture, sometimes signs of pinching and twisting are evident. The cores are generally blackened. The ware colors are often mottled and in the reddish yellow-brown range; they are rarely slipped or burnished.

The few podic forms that do not fit into this general description are low knobbed types manufactured from a plain ware (PM). Sometimes they are affixed by scoring the base of the vessel — shown by the formation of clay on its interior. The exteriors are black-slipped and burnished and are gray-to-black in color. The frequencies of occurrence of these knobbed forms are not significant — and when examined separately from the rest of the podic base group, they are found to occur only from the Late Chalcolithic 4 through the Bronze Age 2 period.

The podic family is comprised of one group with 28 types — and 323 fragments or 13 % of the total bases. If we project that these fragments are elements of tripodic forms, more than 100 vessels are represented throughout the various periods. The podic family is introduced to Aphrodisias in the Late Chalcolithic 1 with a 5 % showing. It grows to be significant in all remaining Late Chalcolithic periods (L.Ch. 1, 27 %; L.Ch. 2, 46 %; L.Ch. 3, 31 %), but it nearly disappears in Bronze Age 1 (5 %), only to become important again in Bronze Age 2 (30 %), after which its numbers decline in significance.

« Omphalos » base. The distinctive « omphalos » base (BB26) is represented by one type that I thought would be of interest to chart. Statistically it is insignificant, represented by only six examples — five appearing in Bronze Age 3 and the sixth in Bronze Age 4.

Handles

3966 handles represent 12 % of the total typed fragments and 27 % of the diagnostics. In Table 121, the combined frequencies of handle families are presented for the understanding of their morphological development. As a class, handles appear in the earliest period excavated and have steady percentage patterns until Bronze Age 1, 10 %; in Bronze Age 2 they achieve both the highest frequency of occurrence as well as percentage, 22 % in relation to the sherds classified for that period. They then decline until Bronze Age 4 Middle Bronze when they climb back to a 19 % representation. Another high count is in the Middle Bronze Age when they account for 21 % of the excavated fragments.

At Aphrodisias, two major handle families appear — loop and lug. Each has major subdivisions that are composed of several groups. In the loop family the subdivi-

sions are basically dependent upon the decoration, size, placement and direction of the handle.

Thirteen type-groups comprise the loop family:

- 1. Loop (jar and jug)
- 2. Grooved and twisted
- 3. Horizontal
- 4. Central depression
- 5. Strap
- 6. Incised
- 7. Grooved
- 8. Ear
- 9. Small loop
- 10. Large loop
- 11. Cooking pot
- 12. Donut
- 13. Plug-affixed

TABLE 121. FREQUENCY OF OCCURRENCE FOR HANDLE GROUPS BY PERIOD

Count % Period % Family	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total	Total % Handles	Total % (62,244)
Lug	7	20	20	17	3	1	11	22	12	49	3	19	14	198	5	0
Ü	28 3	7 10	4 10	3 9	2 1	1 0	5 6	8 11	3 6	8 25	1 2	4 10	18 7	100		
Loop	3	172	301	537	131	49	139	173	287	326	96	389	53	2656	67	4
	12	60 6	64 11	85 20	77 5	60 2	65 5	60 7	65 11	54 12	55 4	76 15	70 2	100		
Untypeable	11	77	84	74	21	10	20	36	45	94	16	49	9	546	14	1
	44 2	27 14	18 15	12 13	12 4	12 2	9 4	13 7	10 8	16 17	9	10 9	12 2	100		
Handles	4	18	67	0	16	21	43	55	98	133	60	51	0	566	14	1
not in Families	16 —	6	14 12	_	9 3	26 4	20 8	19 10	22 17	22 23	34 11	10 9	_	100		
Total	25	286	472	628	171	81	213	286	442	602	175	508	76	3966		
Handles	100 1	100 7	100 12	100 16	100 4	99 2	99 5	100 7	100 11	100 15	100 4	100 13	100 2	99		6
% Period	5	2	5	6	5	10	22	10	6	19	21	8	5		100	12
Total Period	471	13364	9002	9989	3332	841	975	3003	7869	3213	816	6609	1509		-	
% Total	0.8	21.5	5 14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4			

TABLE 122. HANDLE FAMILIES AND TYPE ASSIGNMENTS

Family	Туре
LUG	
Crescentic	133. H30, CH28
Knob	134. H8, H66, H34, H94
Large lug-ledge	135. H80
Cordeye	136. CH1, CH15, CH17, CH21, CH23,
(horizontal)	CH25, CH24, H57
Cordeye	137. CH14, H28
(vertical)	
LOOP	
Jar and Jug	138. CH2, CH3, CH5, CH8, CH9, CH12,
	CH16, CH18, CH27, CH42, CH44,
	CH52, CH58, CH63, CH65, CH66,
	CH70, H7, H9, H12, H13, H15, H37
	H44, H47, H51, H58, H60, H68,
	H78, H89, MH21, MH30, MH39
Grooved and	
twisted	139. H16, H17, H19, H21, H24, H25
Horizontal	140. CH43, H42, H69, BH12, BH38
Central depression	n 141. H4, H5, CH11
Strap	142. (medium) CH4, CH30, CH39, CH37,
	CH59, CH60, H11, HA1
	(large) CH72, CH80, H18, H52, H26

Incised	143. H43, CH68
Grooved	144. BH9, H73
Ear	145. H81
Small loop	146. CH34, CH41, CH69, CH75, CH78,
	H48, H61, H62, H67, H74
Large loop	147. H33, H46, CH19, BH2
Cooking pot	148. CH32, CH61, H29, H41
Donut	149. CH45
Plug-affixed	150. (small) CH29, CH55, CH56
	(medium) CH26, CH33, BH6
	(large) CH31

In the lug family, shape is the most important factor and the family is roughly divided as follows:

Family of Lug Handles

- 1. Lunate Crescentic
- 2. Knob
- 3. Large lug
- 4. Cordeye
 - a. horizontal;
 - b. vertical

In Table 123 is given the lug handle distribution per period, and above in Table 122 are the breakdown of families, type-groups, and types.

TABLE 123. FREQUENCY OF OCCURRENCE FOR LUG HANDLE FAMILIES BY PERIOD

Count % Period % Family	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total	Total % Lugs	Total % (62,244)
Crescentic	0 	<u> </u>	1 5 4	2 12 8	0 _	0 _	0 	5 23 20	0 _ _	15 31 60	2 67 8	0 	0 —	25 100	13	0
Knob	5 71 4	7 35 5	12 60 10	12 70 10	3 100 2	1 100 1	10 91 8	15 68 12	10 83 8	27 55 21	1 33 1	11 58 9	11 79 9	125 100	63	0
Large Lug	0 <u>-</u>	<u> </u>	0 _ _	0 _ _	0 _ _	0 _ _	0 _ _	0 _ _	0 _ _	1 2 10	0 _ _	6 32 60	3 21 30	10 100	5	0
Cordeye	2 29 5	13 65 34	7 35 18	3 18 8	<u>0</u> _	0 	1 9 3	2 9 5	2 17 5	6 12 16	0 _ _	2 10 5	0	38 99	19	0
Total Lugs	7 100 3	20 100 10	20 100 10	17 100 8	3 100 1	1 100 1	11 100 6	22 100 11	12 100 6	49 100 25	3 100 2	19 100 10	14 100 7	198 100		0
% Period	1	0	0	0	0	0	1	1	0	2	0	0	1		100	0
Total Period	471	13364	9002	9989	3332	841	975	3003	7869	3213	816	6609	1509			
% Total	0.8	21.5	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4			

TABLE 124. FREQUENCY OF OCCURRENCE FOR LOOP HANDLE FAMILIES BY PERIOD

Count % Period % Family	LN(?)	LCI	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	LB	IA	Total	Total % Loops Handles	Total % (62,244)
Plain Jar &	2 67	108 63	171 57	225 42	69 53	23 47	57 41	80 46	131 46	127 39	36 38	58 15	10 19	1097	41	2
Jug	-	10	16	21	6	2	5	17	12	12	3	5	1	100		
Grooved &	0	3	1	1	4	4	1	5	26	12	28	23	0	108	4	0
a Twisted	_	2	1	1	3	8	1 1	3 5	9 24	4 11	29 26	6 21	_	99		
Horizontal	0	0	2 1 1	1 _ _	1 1 —	0 	4 3 2	8 4 4	11 4 5	18 6 9	2 2 1	148 38 72	12 23 6	207	8	0
Central	1	11	22	29	6	1	5	10	10	19	4	8	2	128	5	0
Depression	33 1	6	7 17	5 23	4 5	2	3 4	6 8	3	6	4 3	2	4 1	100	J	Ü
Strap	0 _ _	18 10 9	21 7 11	34 6 17	6 4 3	2 4 1	5 3 2	17 10 9	17 6 9	39 12 20	3 3 2	30 8 15	4 7 2	196 100	7	0
Incised	0	3	4	4	1	2	8	5	2	2	0	1	0	32	1	0
Loop	_	2 9	1 13	1 13	1 3	4 6	6 25	3 16	1 6	1 6	_	_ 3	_	100		
Grooved	0	0	0	0	0	1 2	1 1	3 2	5 2	3	0	59 15	10 19	82	3	0
·		_	_	_	_	1	1	4	6	4		72	12	100		
Ear	<u>0</u>	_0	<u>0</u>	_0 _	<u> </u>	0	0 —	<u>0</u>	1 -	<u>0</u>	1	19 5	0	21	1	0
			_		_		_	_	5		5	90	_	100		
Loop (small)	0 	11 6 6	12 4 6	39 7 21	10 8 5	3 6 2	9 6 5	10 6 5	9 3 5	44 13 23	4 4 2	30 8 16	8 15 4	189 100	7	0
Loop (large)	0 _ _	8 5 3	24 8 9	90 17 33	16 12 6	5 10 2	20 14 7	17 10 6	37 13 14	27 8 10	11 11 4	12 3 4	7 13 2	274 100	10	0
Co. altino				20					6	10	2	1	0	62	2	0
Cooking Pot	_ _ _	3 2 5	13 4 21	4 32	5 4 8	4 8 6	4 3 6	3 2 5	2 10		2 3		- -	100	2	U
Donut	0	0	0	3	0	0	0	0	4	1	0	0	0	8	0	0
	_	_	_	1 38	_	_	_	_	1 50	 12	_	_	_	100		
Plug- affixed	0	7 4	31 10	91 17	13 10	4 8	25 18	15 8	28 10	33 10	5 5	0	0	252	9	0
Loop		3	12	36	5	2	10	6	11	13	2		_	100		
Total Loop Handles	3 100 —	172 100 6	301 99 11	537 100 20	131 100 5	49 99 2	139 99 5	173 100 7	287 100 11	326 100 12	96 99 4	389 100 15	53 100 2	2656 100	98	4
% Period	0	0	1	37	1	2	6		1	3	3	13	1	100		6
Total Period	471	13364	9002	655	3332	841	975	3003	7869	3213	816	6609	1509			J
% Total	0.8	21.5		16.0							1.3					
70 10tai	0.8	21.3	14.5	16.0	5.4	1.4	1.6	4.8	12.6	5.2	1.3	10.6	2.4			

Loop handles

2656 loop handles are classified. Fractured loop handle fragments are discovered either attached to the parent pot or as separate piece. Often the clay used in handle formation is found to be coarser with more temper and not as plastic as the clay used for vessels. A large proportion of these handles are then of coarse ware and are black-cored in section.

The easiest way to classify handles, if the overall shape is known, is by the length of the attachment. This is done by taking measurements between the two interior points of attachment. The majority of our types, however, are small fragments that are classified not only by their length and shape but also by the measurement of the average length and width of the section — section shape and measurement are also factors in the classification of complete handles. The position of the handle on the vessel body is important to assess, but unfortunately few conclusions could be drawn regarding this factor because so few are found attached.

Most loop handles are manufactured either by the « drawn method » or by the coil method. With the first, a wedged clay ball of about 0.05 m is shaped into an elongated pear-shaped form; the wide end of the clay is held in one hand while the fingers of the other gently and gradually draw or pull the narrow end until it is squeezed off. The remaining clay is bent into the handle shape and attached to the body of the vessel when both are leather hard. The second method of manufacture is the formation of a folded or rolled coil. The thickness of the coil and its overall shape are prescribed by the type of vessel the handle is to carry. If the potter plans to create a decorative handle with ribbing, his fingers or a tool are used to create the desired effect. The Aphrodisias handles are then applied to the vessel wall by one of two methods: 1) the use of a thick adhesive slip, or 2) with a plug attachment plus a thick adhesive slip discussed infra.

The Aphrodisias potters did experiment with handle shapes, but none are as popular as the simple plain loop handle. Several incised handles and a few knobbed handles (those with pellet-like protrusions on the upper curve of the handle area) are also found. Often handles are slipped, but little painting occurs with the exception of those found in the Late Bronze and Iron Ages.

In the study of loop handle overall frequency, it is noted that the combined Late Chalcolithic 2 and Late Chalcolithic 3 periods represent 31 % of the total, and in the Bronze Age 4 Middle Bronze periods they represent 23 % of the total. The two single periods with the highest frequencies are Late Chalcolithic 3 with 537 (20 % of the period) and Late Bronze with 389 (15 % of the period). They are least popular during the Late Neolithic (?), Bronze Age 1 and Iron Age.

Horizontal loop. All handles horizontally placed on the vessel are captured by this family, comprising several different sizes and shapes. This handle is particularly popular in the later periods — 72 % are found in the Late Bronze Age from where 148 fragments of the total 207 are encoded. In study of the overall frequencies, this typegroup is in third place for popularity of loop handles.

Centrally depressed loop. This sub-group, like the grooved and twisted shape (infra), is associated with large jugs and jars. It is irregular in section, and is manufactured from a clay body slightly more inclusion-concentrated than the parent pot. Found throughout all periods, it is particularly strong in the earliest ones — Late Chalcolithic 1-3 where a combined 48 % of its presence is manifested.

Jar and Jug loop. 41 % of loop handles are represented by the plain vertical family which is found throughout all periods. It first appears as early as Late Neolithic (?), where only two handles represent 67 %. They continue to be strong in Late Chalcolithic 1 when 108 or 63 % are found. In Late Chalcolithic 2, 171 or 57 % are registered; in Late Chalcolithic 3, 225 or 42 %; and in Late Chalcolithic 4, 69 or 53 %. Their strong representation in the early periods begins a slow decline after Late Chalcolithic 4 that continues through the Late Bronze Age, 58 or 15 %; and Iron Age, 10 or 19 % of that period.

Grooved and twisted loop. This family of handles is represented by 108 or 4 % of their class. Its statistics are minimal in the early periods — it is more popular from Bronze Age 4, then it reaches its high point in the Middle Bronze with 29 %, and falls off in the Late Bronze Age. This family is associated with storage jars or large jugs; it is the ancestor of the amphora handle. It is characterized by having either one or two wide (0.01 m) grooves running down its length (probably to compact the clay) and by being twisted about 30-45° — the twisting action takes place when it is affixed to the parent pot. Generally manufactured from coarser wares than the parent pot, it may or may not be slipped; sometimes it is found to bear a burnish. It is wide (0.02-0.03 m) in section and irregular in shape, being flattened.

Strap loop. Strap handles are thin in section (0.01 m) with a flattened exterior and interior, or with a slight interior thickening. They are generally associated with jugs of a medium size (0.16 m), and are often decorated with a slip and burnish in the Bronze Age, or with a slipwash in the Late Bronze and Iron Ages.

196 fragments are classified in this family that has two type groups: medium and large with 13 members inclusive. Strap handles appear in Late Chalcolithic 1 and

grow in strength through Late Chalcolithic 4, after which they diminish in numbers only to regain their strength from Bronze Age 3 to Bronze Age 4 Middle Bronze where they peak to represent 12 % for that period division.

Incised loop. This family is represented by two types. It is a small spherical-sectioned handle associated with small jugs, characterized by multiple incisions made with a small tool that obliquely wraps around the exterior and sides of the handle. It is almost always both slipped and burnished.

This handle type is not among the most popular at Aphrodisias (1 % of the loop handles); it was selected for special study because its presence is found at other sites and we thought that it would appear in specific periods and not in others — this was not the case, however, for it appears in insignificant quantities from Late Chalcolithic 1 through the Bronze Age 4 Middle Bronze periods inclusive. It disappears from the assemblage in the Middle Bronze and Iron Ages.

Grooved. This family is similar in character and ware to the aforementioned grooved and twisted and also the centrally depressed types. One type-group with two types comprises this family. It is characterized in the Late Bronze and Iron Age by being round in section and having a localized vertical excised groove at the base of the handle where it is attached to the parent pot.

Grooved handles represent 3 % of the loop handles excavated. The family is introduced in the Bronze Age 1 period with a minor representation throughout the Early Bronze Age and disappears completely from the pottery corpus of the Middle Bronze. But in the Late Bronze Age and Iron Age it is a typical handle type and accounts for an 84 % presence.

Ear loop. The ear loop is represented by one type. This handle rises above the rim of the vessel in an ear-shaped projection. The numbers for this type are far from being meaningful because it always has to be found with a rim component to distinguish it as being singly an ear



295. Grooved handle, type H73 III.88 Acropolis trench 8; Complex A-4, Phase III, Late Bronze Age.

handle. Only 21 or 1 % of the loop handles could be so distinguished and these are concentrated in the Late Bronze period.

Small loop. Small loop handles are found associated with small vessels like cups or tankards. They are generally 0.06 m in diameter, spherical in section, and slipped and burnished in the Late Chalcolithic Bronze Ages until the Late Bronze Age when they are gold or silver micaceous wash-slipped. Although these handles appear throughout all periods after Late Chalcolithic 1, the relative popularity is particularly apparent in the Bronze Age 4 Middle Bronze period and in the Late Bronze and Iron Ages.

Large loop. These large handles with a diameter of 0.04-0.06 m are associated with pithos forms. They are characterized by being plain for rarely are they decorated.

This is the second largest family of loop handles — represented by 274 fragments within one type-group that is divided into four types. They appear in Late Chalcolithic 1, and are statistically interesting in the Late Chalcolithic 3 where they are 33 % of their handle class and 17 % of the entire period. They continue throughout the periods to play more or less a constant role.

Cooking pot. In this family there is one type-group with four types. It is characterized as having been manufactured from a drab brown or red-brown coarse ware, and generally has a black core. Rarely decorated by slip or burnish, it is often irregular in shape.

Only 62, or 2 % of the handles are classified as belonging to cooking pots. Its presence is most important in the Late Chalcolithic 2 and Late Chalcolithic 3 periods, but then its numbers fall off and its percentages become minimal. It all but leaves the handle corpus by the Bronze Age 4 Middle Bronze period, continues meagerly to the Iron Age at which time it disappears.

Donut. The donut-shaped handle is a peculiar form (1 type) which is shaped like a flattened and thick donut. It is most often found red-slipped. As a vertical attachment it would have been awkward, so it was probably attached horizontally. We questioned whether these fragments actually served as handles — they may have been used in another capacity, i.e., pot stands or weights. Only in three periods is this type found: Late Chalcolithic 3, Bronze Age 4 and Bronze Age 4 Middle Bronze period.

Plug-affixed. With the plug attachment, the body of the vessel is scored — with the prong extending from the handle. This may tell us something about the potter's manufacturing program — if the plug handle is applied to the vessel's surface, the handle probably is hardened more than the body fabric which has to be penetrated by the plug. Sometimes plugs are found at both ends of the handle, but more frequently they are associated with only the lower handle attachment. At Aphrodisias this family is found with vertical loop handles and not with horizontal types. When we first discovered these handles to be of a specialized plug manufacture, we created new types so that this data might be captured within the scope of this analysis — seven types, possibly an eighth, are attached by the plug method. The combined frequency of occurrence can be found charted on Table 124.

Plug handles make their earliest appearance in Late Chalcolithic 1 and continue through each of the succeeding periods. In Late Chalcolithic 2 and Late Chalcolithic 3 they begin to be an important manufacturing technique and their percentages increase until they peak in Bronze Age 2. After Bronze Age 4 - Middle Bronze they decrease in numbers.

Lug handles

As mentioned at the beginning of the handle section four different type-groups with a total of 17 types of lug handles are found. Although this family represents only 5 % (198) of the handles excavated and none of these forms are of statistical importance at Aphrodisias, their development is of interest - and the information provided by parallel types at other sites is important (infra). In Table 123, knob lugs represent 63 %; followed by a 19 % representation of the cordeye family; the crescentic family accounts for 13 %; and completing the family is the large lug, 5 %. No lugs represent more than 2 % of their period, and that number is achieved in Middle Bronze. But even if in insignifi-Bronze Age 4 cant numbers, these forms appear throughout all levels of the site.

Crescentic lugs. Of particular interest is the so-called crescentic, lunate, or horseshoe-shaped lug. This is a diagnostic lug family, manufactured from coarse ware and affixed to the upper body of the large jars for ease in lifting.

Only 25 fragments are found, and given the face value of their numbers, their presence at Aphrodisias is sporadic: three are found in Late Chalcolithic 2-3 contexts, five in Bronze Age 3, a peak of 15 in Bronze Age 4 - Middle Bronze and finally, just two in Middle Bronze. None appear in Late Neolithic (?), Late Chalcolithic 1, Late Chalcolithic 4 Bronze Age 2 inclusive, Bronze Age 4, Late Bronze or Iron Age.

This form finds no Late Chalcolithic - Early Bronze Age parallels at either Beycesultan or at Kum Tepe; however, it did find many parallels for those periods in western Anatolia and in the Eastern Aegean — including Tigani (Furness 1956: Figure 8.17); Thermi (Lamb 1936: Pls. XXXIV.9; XXXVII.442, 519); Vathy Bay Cave on Kalimnos (Furness 1956: Pl. XVIII.13, 14); Aghio Gala in the Upper Cave in Thessaly (*ibid.* 1956: Pl. XXII.30, 31); Saliagos (Evans and Renfrew 1968: Pl. XXXII.6; Figure 47.1-4, 13); Emborio (Levels IX and VIII); at both Dimini (Tsountas 1898: 264, Figure 172) and Sesklo (*ibid.*) — and on the Anatolian mainland at Troy (Blegen *et al.* 1950: Pls. 247.39, 248.12, 389 (top), 403 (top).

During the later Early Bronze Age, this crescentic form is still popular. Type CH28 (Figure 389.1) is distinctive and finds parallels at both Beycesultan in Level XXXI (Lloyd and Mellaart 1962: Figure P.7.24, a lug attached to a rim resembles Aphrodisias CX77, Figure 405.1) and at Kum Tepe in phase IA1 (Sperling 1978: Figure 10.135 — Sperling classes this under coarse ware). Without exception, the forms that appear at Aphrodisias are manufactured from coarse ware.

Knob lugs. Knob lugs are generally small coarse ware projections that serve both decorative and practical purposes. 125 knobs are found distributed throughout all periods at Aphrodisias. They appear most popular in Bronze Age 4 Middle Bronze when 27 or 21 % of the period are found.

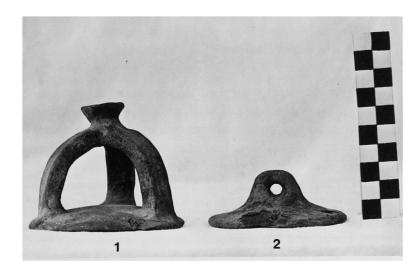
Large lug-ledge. This family comprises large lug or ledge handles associated with pithoi. Only ten fragments are found and those in the later periods: one in Bronze Age 4 Middle Bronze 1; six in the Late Bronze; and three in the Iron Age.

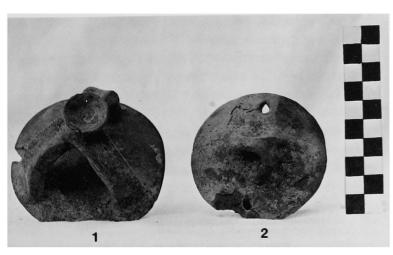
Cordeye lugs. 38 of these interesting cordeye handles are found: 25 registered from the Late Neolithic (?) through the Late Chalcolithic 3 periods. None appear in Late Chalcolithic 4 - Bronze Age 1; in Bronze Age 2 through Bronze Age 4 Middle Bronze they have a small showing; then they disappear again in the Middle Bronze period to reappear in Late Bronze; none are found in the Iron Age.

Within this type-group two subdivisions can be traced: 1) vertically perforated lugs, and 2) horizontally perforated lugs. The first subdivision contains two types: CH14; and H28 (Joukowsky 1982: Figure 43.7). The second subdivision has six types: CH1 (Figure 377.41); CH15; CH17 (Figure 377.42); CH21 (Figure 385.1); CH23 (Figure 385.20) and CH25 (Figure 385.18).

Vertically perforated lugs find parallels at Beycesultan in Levels XXXIV (Lloyd and Mellaart 1962: Figure P.5.23) of L.Ch. 2 and XXVII (*ibid*. Figure P.8.17) of L.Ch. 3. They are also charted by Furness to various sites including Troy, Kalimnos and Knossos (Furness 1956:190).

Horizontally perforated cordeyes have parallels that are found at Kum Tepe phase IA1 (Sperling 1976: Figure 10.133) — a parallel to our CH15; see also Figure 10.134 of phase IA1. The shape of this Kum Tepe lug is similar to H28 (Joukowsky 1982: Figure 43.7), but ours is perforated and this example is not. There are parallels around the Aegean — the Upper Cave at Aghio Gala (Furness 1956: Figure 14.7); Tigani (*ibid*. Figure 8.3-7); at Troy (Blegen *et al.* 1950:60, A 12, Pl. 260, 8.19; Pl. 261, 8.13.14); and at sites in Macedonia (Heurtley 1939: Cat. nos. 188, 216). These are all dated to the Late Neolithic and the Early Bronze Age. Diagonally-affixed lugs are found at Hacılar (Mellaart 1970a: 106), which parallels our type CH15.





296. Bronze Age lids (Photo: original excavators).

Lids (Figure 296)

Lid fragments are difficult to detect because of their characterless, rather flattened shape. It is probable that many were overlooked in the process of classification. Only 12 lids that could be identified are found at the site. In Figure 296 complete lids are shown. These photographs are taken by the original excavation team but unfortunately we are not sure what their catalogue numbers are because these lids could not be found at the site. (Only cat. no. 312.II has its catalogue number in the photograph.) Encoded in the computer study are eight lids; plus three that are described in the catalogue - cat. nos. 210.II from Acropolis trench 3, Bronze Age 4; and cat. no. 736.3* from Acropolis trench 7, Bronze Age 4 Middle Bronze period. Only two lids are found in the Late Chalcolithic period, the remaining eight in Bronze Age 3 and 4, Bronze Age 4 Middle Bronze Age contexts, and two in the Late Bronze Age.

Carinated body sherds

One of the diagnostics studied are carinated body sherds — i.e., those fragments that are biconical in shape with definite corner-points on the exterior, but with neither rim nor base attached.

In Table 125 the frequency of occurrence for these 217 fragments indicates that there were high points of use: in the Bronze Age 4 Middle Bronze, 34 %; and the Late Bronze, 44 %. Combined, these three periods account for 78 % or 186 fragments. Such carination appears to have taken hold in the Bronze Age 2 and it continues through to the Iron Age.

TABLE 125. PC (CARINATED BODY SHERDS)

PERIOD	Number	% of carinated fragments	% Period
Late Neolithic (?)	0	0	0
Late Chalcolithic 1	0	0	0
Late Chalcolithic 2	0	0	0
Late Chalcolithic 3	2	1	0
Late Chalcolithic 4	0	0	0
Bronze Age 1	0	0	0
Bronze Age 2	6	3	1
Bronze Age 3	2	1	0
Bronze Age 4	8	4	0
Bronze Age 4-			
Middle Bronze	74	34	2
Middle Bronze	16	7	2
Late Bronze	96	44	1
Iron Age	13	6	1
Total	217	100	7

This has been a comprehensive sample of significant shape and decoration families thus far recovered from the excavations... and provides an overall picture of the principal variants of ceramic production throughout each period. Through this analysis, some reasoned judgments can be made to determine the Aphrodisias cultural development.

There is now enough evidence to make tentative conclusions concerning the ceramic culture that existed at the site in each of the 13 prehistoric periods. Before these can be drawn, there follows a period-by-period analysis — which moves from general trends to the more specific type variables as they are sorted by the computer.

COMPUTER RESULTS

General information

This is a period-by-period analysis of the major variables sorted by the computer. Only the ceramic fragments that have been previously listed by family and type have been computerized. Below, the total fragments are listed by the percentage represented in each period — taken against the total corpus of 62,244 fragments and within each category, the overall percentages are set against the fragments in that period. All percentages have been rounded to the nearest unit. This means of sorting is dependent on diagnostic variables. A diagnostic is a fragment which has a finished form such as a rim, base or handle, however, it may also have a definable method of decoration or be distinguished by ware-fabric.

The pottery computer-sorting process is divided into the same periods as the Catalogue with the exception that there is no Middle Bronze Age-Mixed period — Middle Bronze is a mixed level with later intrusions. In addition, there is a division for errors made by the computer.

In an attempt to systematize the study of these ceramics, I have summarized each period's pottery under a number of broad class headings just as they were sorted by the computer. This categorization tends to emphasize linkages that exist between shapes and decoration techniques. Each type within each variable class has been set against each other. Thus in the following presentation of types, the format of variables is as follows: actual fragment count and percentage of shapes, decorative techniques, ware type by function, clays, ware colors, manufacture, cores, liquid decoration, liquid decoration condition, slip group, slip color, paint, plastic decoration, and finally burnish, and smoothing. The numerical values imply some sort of certainty that can be accorded to the trait or type. A type for which many examples were available for study is obviously more certain than a type that is based on only a few examples. We therefore have selected these standard factors for this presentation, many of which are numerically significant. These would be so distinctive they will be useful indicators for Aphrodisias' inward development — and for parallels with other sites.

For purposes of clarification, there is probably no substitute for a statistical summary giving an overall view of the frequencies of types. In this presentation, each period has its own statistical summary giving the totals of diagnostic shapes and decorative elements. The percentage number has been set against the total fragments typed for that period. The frequency-of-occurrence numbers have been rounded to the nearest unit. For example, the occurrence of burnishing is presented along with the other 30 ceramic variables, thus, in the Bronze Age 3 period, the percentage of bowl-shape families is set against the total number of fragments for all of Bronze Age 3*.

Each period is summarized — starting with Late Neolithic (?) and concluding with the Iron Age. Statistically important shapes are represented by line drawings before the summary information is given.

So that the readers can assess the material for themselves, only the facts are given. In conclusion, an interpretive statement will be offered.

Part per period: This presents class percentages of body sherds, rims, bases, handles, disks, i.e., a part of the ceramic that can be identified.

Size: Fragment size is a possible indicator of a concentration of activity. If the fragments had been repeatedly exposed to human or natural forces, the comminution of fragments will be a useful indicator of that factor. Fragment size was measured in meters: T=0.025 m and smaller; M=0.07 0.12 m and smaller; L=0.12 0.20 m: X=0.20 m and larger.

Families of bowls, cooking pots, pithoi, baking trays bases and handles are given in that order. (Since the major baking tray types are charted in Table 113, their statistics will not be repeated here.) The percentages of the class and family are taken against the period total.

Clays: Percentages of argillaceous (clay-based) and arenaceous (sand or mica schist-based) wares are followed by the percentages of specific wares. « Different wares » indicates the number of fragments under 0.03 m that were considered too small to individually study.

Ware colors: Unfortunately time and lack of funds precluded our ware color-encoding of 55 % of the Aphrodisias fragments. But of the 45 %, the following represents the distribution of 22 significant color types — out of a possible 51 Munsell-aligned ware-color variables. These are given with the percentage of occurrence plus the Munsell color and coded Munsell number: 7 % light red (40); 6 % very dark gray (18); 6 % red (20); 3 % light brown (37); 2 % yellowish red (39); 2 % red (42); 2 % black (15); 2 % reddish yellow (22); and 1 % dark reddish gray (07). The remaining are each less than 1 %: dark reddish gray brown (12), dark brown (16), dark reddish brown (17),

dark red (18), red-brown (19) reddish yellow (21), light reddish brown (23), brown (24), pale brown (29), pinkish white (35), pink (36), and reddish yellow (38).

Cores: 58 % of the fragments did not have their core color analyzed. Of the remaining: 20 % black; 5 % gray; and 17 % even.

Liquid decoration: 45 % decorated; 55 % undecorated; 45 % bear liquid decoration: 90 % slip; 1 % slip-wash; 7 % wash; and 2 % self-same slip.

Condition of decoration: 20 % good; 4 % flaky; 3 % mottled; 1 % patchy; 8 % decoration has worn-off, the ware fabric shows through.

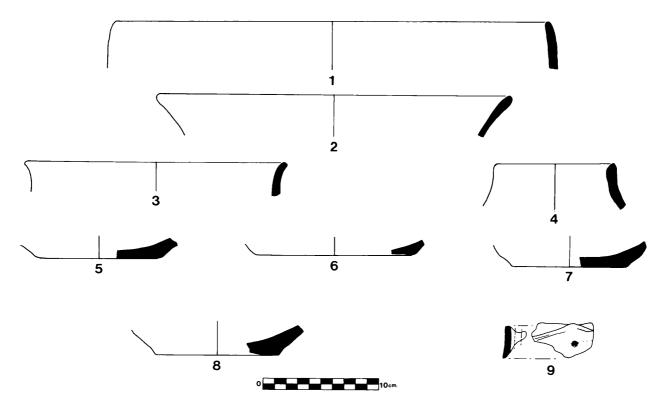
Slip families: 9 family members plus one miscellaneous family were founded for distinctive color variables. Within these families, the slips, slip-washes and washed ceramics of Aphrodisias are colored 29 % black; 19 % red; 19 % metallic; 12 % brown; 10 % salmon; 2 % gray; 4 % red-black mottled; 3 % tan; 2 % white.

Slip color: This variable is reserved for the collection of information regarding specific colors that were combined into families, but stand on their own and have a significant percentage. They include: 7 % gold; 1 % red brown; 3 % salmon red (2.5YR5/6). Painted decoration: This variable is used to collect data on painted wares. 99 % of the fragments from these levels are not painted.

Plastic decoration: Percentages are followed by fragment count of specific variables; including burnishing, smoothing, appliqué, incision and excision.

84 % of the fragments classified at Aphrodisias are unburnished or unsmoothed (they bear no finishing technique that could be recognized). Of those that are finished, 2 % are hand-burnished to a high glossy luster; 3 % are hand-burnished to a medium luster; 7 % are hand-burnished to a low luster; and 5 % are smoothed. There is no significant evidence for wheel-burnished wares.

^{*} In some instances, percentages are given for diagnostic types only, and untypable percentages are not given. The interested reader should refer to the frequency of occurence charts for overall percentage totals.



297. Late Neolithic (?) Prevalent Types.

1. CX9 bowl 2. CX11 bowl 3. CX14 bowl

4. CX21 bowl

5. B82 base

6. B81 base

7. B80 base 8. B83 base 9. H57 handle

LATE NEOLITHIC (?)

471 total fragments; 1 % of total sample.

Part % per period: 79 % body sherds; 9 % rims: 6 % bases; 5 % handles.

Size: 8 % not registered; 70 % small; 12 % large; 7 % tiny; 3 % medium.

Bowl families: (9 % representation) 69 % flaring; 26 % vertical; 2 % incurving; 2 % exterior-thickened.

Cooking Pot, Jar and Jug, Pithos and Baking Tray families: None represented.

Base families: (6 % representation) 31 % flat large; 31 % flat small; 7 % round.

Handle families: (5 % representation) 28 % lug; 12 % loop. Lug 71 % knob; 29 % cordeye. Loop plain jar/jug; 33 % central depression.

Ware-fabric by function: 61 % dining; 15 % fine; 8 % cooking pot; 8 % different; 6 % pithos; 1 % very coarse.

Clays: 91 % argillaceous; 8 % different wares; 1 % arenaceous. 75 % dining; 9 % cooking pot; 8 % different; 7 % pithos; 1 % coarse.

Ware colors: 8 % not recorded; 9 % light brownish gray (09); 10 % very dark gray (14); 29 % dark red (18); 37 % red (20); 2 % red-brown (19); 1 % dark reddish gray-brown (12); 1 % dark reddish brown (17); 1 % reddish yellow (21); 1 % yellowish red (39).

Manufacture: 92 % handmade; 8 % not analyzed.

Cores: 8 % cores not analyzed; 86 % black; 4 % even; 2 % gray.

Liquid decoration: 59 % decorated; 41 % undecorated. 47 % slip; 12 % uncertain.

Condition of decoration: 37 % intentionally mottled; 21 % good; 1 % decoration worn-off ware fabric shows through.

Slip families: 41 % unslipped; 59 % slip: 34 % red; 22 % brown; 2 % black.

Slip color: 59 % slip; 34 % red; 18 % red-brown; 3 % brown-gray; 2 % black; 1 % brown.

Painted fragments: 100 % not painted.

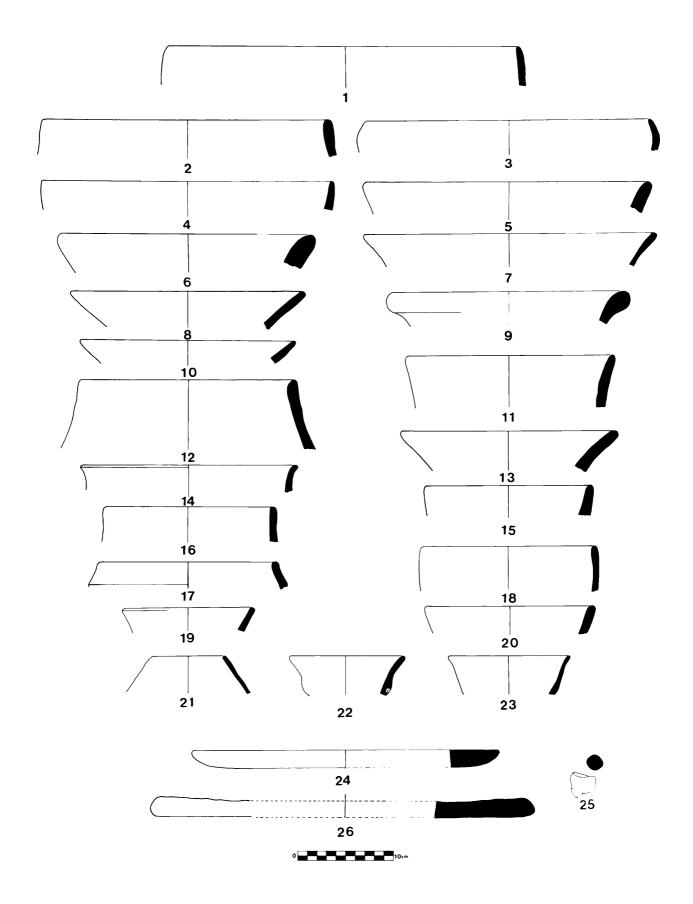
Plastic decoration: 58 % burnished or smoothed.

Burnish and smoothing: 42 % unburnished and unsmoothed; 2 % hand-burnished to a high glossy luster (100 % every which way). 8 % hand-burnished to a low luster (50 % horizontal, 11 % every which way, 40 % every-which-way); 48 % smoothed (100 %) every-which-way).

Appliqued = 0

Excision = 0

Incision



298. Late Chalcolithic 1 Prevalent Types.

1. <i>CX9</i> bowl	7. <i>CX11</i> bowl
2. X46 bowl	8. CX11 bowl
3. <i>CX12</i> bowl	9. <i>CX6</i> bowl
4. CX10 bowl	10. <i>X80</i> bowl
5. X82 bowl	11. CX35 bowl
6. CX7 bowl	12. CX2 bowl

2	Cnu	ncommic 1	Γ
	13.	CX36 bowl	
	14.	CX14 bowl	
	15.	CX26 bowl	
	16.	CX27 bowl	
	17.	CX29 bowl	
	18.	X94 bowl	

19. CX31 bowl 20. CX24 bowl 21. CX5 bowl 22. CX33 bowl 23. CX13 bowl 24. BT4 baking tray

25. CH16 handle26. BT1 baking tray

LATE CHALCOLITHIC 1

13,364 total fragments; 21 % of total sample.

Part % per period: 90 % body sherds; 6 % rims; 2 % handles; 1 % bases.

Size: 57 % not registered; 34 % small; 6 % tiny; 2 % medium; 1 % large and very large.

Bowl families: (4 % representation) 45 % flaring; 29 % vertical; 2 % inverted; 2 % exterior-thickened; 2 % interior-exterior thickened.

Cooking Pot families: (1 % representation) 35 % flaring; 17 % vertical; 17 % angular; 8 % incurving; 4 % everted; 3 % exterior-thickened.

Jar and Jug families: 4 % flaring.

Pithos families: No representation.

Baking Trays: 1 % representation.

Base families: (1 % representation) 40 % round; 32 % flat large; 7 % podic; 6 % flat small.

Handle families: (2 % representation) 7 % lug; 60 % loop. Lug 65 % cordeye; 35 % knob. Loop 63 % plain jar/jug; 10 % strap; 6 % central depression; 6 % small; 5 % large; 4 plug-affixed; 2 % incised; 2 % cooking pot; 2 % grooved and twisted.

Ware-fabric by function: 47 % different wares; 22 % dining; 9 % pithos; 5 % baking tray; 4 % cooking pot; 3 % fine.

Clays: 48 % argillaceous; 47 % different wares; 6 % arenaceous. 4 % cooking pot; 33 % plain; 8 % pithos; 2 % very coarse; 1 % coarse.

Ware colors: 58 % no ware color-coded; 8 % very dark gray (14); 4 % black (15); 4 % (20); 3 % light brown (37); 2 % dark reddish gray-brown (11); 2 % dark brown (16); 2 % dark reddish brown (17); 2 % dark red (18); 2 % reddish yellow; 2 % brown (24): 2 % light red (40); 2 % red (42); 7 types each representing 1 % are browngray (06), dark reddish gray (07), light brownish gray (09), reddish gray-brown (11), dark gray (13), red-brown (19),

reddish yellow (22), light reddish brown (23), and yellowish red (39).

Manufacture: 47 % not analyzed; 43 % handmade; 10 % analyzed, but manufacture could not be confirmed.

Cores: 57 % not analyzed; 22 % black; 13 % even; 8 % gray.

Liquid decoration: 14 % liquid decoration; 86 % no decoration; 12 % slip; 0.3 % slip-wash; 0.4 % self-same slip; 1 % uncertain.

Condition of decoration: 11 % good; flaky and worn-off; 1 % intentionally mottled.

Slip families: 9 % black; 3 % brown; 1 % red; 1 % all other colors.

Slip color: 9% black; 3% brown; 1% red; 1% all other colors.

Painted fragments: 99 % no painted decoration; 1 % white-painted.

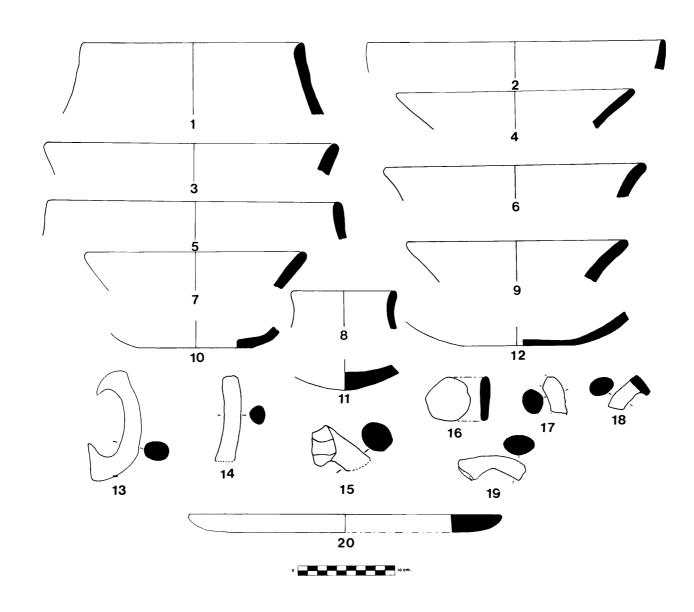
Plastic decoration: 17 % are burnished or smoothed.

Burnish and smoothing: 83 % unburnished; 2 % hand-burnished to a high luster (4 % vertical, 69 % horizontal, 27 % every which way); 1 % hand-burnished to a medium luster (25 % horizontally; 63 % oblique; 12 % vertical and horizontal); 10 % hand-burnished to a low luster (10 % vertical and horizontal); 10 % hand burnished to a low luster (10 % horizontally, 1 % pattern burnished, 3 % oblique, 73 % every which way, 13 % vertical and horizontal); 4 % smoothed (2 % horizontal, 27 % every which way, 72 % vertical and horizontal).

Appliqué: 36 or 0.3 % bands; 1 knob; 1 snake-like appliqué.

Excision: 1 grooved; 1 linear horizontal; 1 miscellaneous; 1 combing with pinpricks.

Incision: 1 linear horizontal; 1 squared-off pinprick; 1 combing and pinprick; 1 wavy bands.



299. Late Chalcolithic 2 Prevalent Types.

1. CX2 bowl	11. B28 base
2. CX10 bowl	12. B7 base
3. <i>X82</i> bowl	13. <i>H58</i> handle
4. CX37 bowl	14. <i>CH2</i> handle
5. <i>X46</i> bowl	15. CH26 handle
6. CX59 bowl	16. <i>CD3</i> disk
7. CP30 cooking pot	17. CH18 handle
8. <i>CX21</i> bowl	18. <i>CH44</i> handle
9. CX36 bowl	19. <i>CH11</i> handle
10. B87 base	20. BT4 baking tray

LATE CHALCOLITHIC 2

9002 total fragments; 15 % of total sample.

Part % per period: 82 % body sherds; 10 % rims; 5 % handles; 2 % bases; 1 % miscellaneous.

Size: 40 % not registered; 55 % small; 3 % medium; 1 % large or very large.

Bowl families: (6 % representation) 48 % flaring; 26 % vertical; 5 % inverted.

Cooking Pot families: (2 % representation) 54 % flaring; 8 % vertical; 8 % incurving; 7 % angular; 4 % exterior-thickened.

Jar and Jug families: (1 % representation) 82 % flaring; 7 % exterior-thickened.

Pithos families: No % representation.

Baking Trays: 1 % representation.

Base families: (1 % representation) 42 % round; 27 % podic; 18 % flat large.

Handle families: (5 % representation): 4 % lug; 64 % loop. Lug - 60 % knob; 35 % cordeye; 5 % crescentic. Loop 57 % plain jar/jug; 10 % plug-affixed; 8 % large; 7 % central depression; 7 % strap; 4 % small; 4 % cooking pot; 1 % incised; 1 % horizontal.

Ware-fabric by function: 35 % different wares; 34 % dining; 10 % pithos; 7 % baking tray; 4 % cooking pot; 4 % fine.

Clays: 60 % argillaceous; 40 % plain; 35 % different wares; 4 % arenaceous; 10 % pithos; 7 % cooking pot; 4 % sandy coarse; 3 % baking tray.

Ware colors: 41 % no ware color-coded; 11 % very dark gray; 5 % light brown (37); 5 % light red (40); 4 % red (20); 4 % yellowish red (39); 2 % dark reddish gray (07); 2 % reddish gray-brown (11); 2 % dark reddish gray-brown (12); 2 % dark reddish brown (17); 2 % dark red (18); 2 % reddish yellow (22); 2 % light reddish brown (23); the remaining represent 1 % respectively: gray (03), brown-gray (06), dark gray (13), black (15), dark brown (16) red-brown (19), brown, strong brown, pink (36), reddish yellow (38), red (42).

Manufacture: 35 % not analyzed; 59 % handmade; 6 % manufacture could not be determined.

Cores: 41 % not analyzed; 37 % black; 17 % even; 5 % uneven and gray.

Liquid decoration: 38 % liquid decoration; 62 % undecorated. 37 % slip; 1 % uncertain.

Condition of Decoration: 29 % good; 4 % flaky; 3 % intentional mottling; 2 % patchy.

Slip families: 16 % black, 8 % brown; 5 % salmon; 4 % red; 2 % gray; 2 % tan; 1 % red-black. Slip color: 16 % black; 6 % brown-maroon; 4 % salmon-red; 2 % red; 2 % dark brown; 2 % red-brown; 2 % gray; 2 % weak red (10R4/4); 2 % tan; 1 % black-brown mottled; 1 % brown-gray; 1 % red-black intentionally mottled: 1 % salmon-pink.

Painted fragments: 97 % unpainted; 3 % white-painted.

Plastic decoration: 20 % either burnished or smoothed.

Burnish and smoothing: 80 % unburnished; 1 % hand-burnished to a high luster; 12 % hand-burnished to a low luster (1 % vertical; 25 % horizontal; 1 % pattern burnish; 65 % every which way; 9 % vertical and horizontal); 7 % smoothed.

Appliqué: 4 knobs.

Excision: 1 combing; 1 combing and pinprick.

Incision: 1 linear vertical; 1 linear horizontal; 9 linear oblique.

LATE CHALCOLITHIC 3

9989 total fragments; 16 % of total sample.

Part % per period: 81 % body sherds; 10 % rims; 6 % handles; 2 % bases.

Size: 58 % not registered; 41 % small.

Bowl families: (7 % representation) 27 % flaring; 17 % inverted; 6 % vertical; 4 % curving; 4 % incurving; 4 % exterior-thickened.

Cooking Pot families: (1 % representation) 61 % flaring; 13 % angular; 10 % exterior-thickened; 4 % incurving; 4 % vertical; 3 % everted.

Jar and Jug families: (1 % representation) 68 % flaring; 5 % exterior-thickened; 5 % angular.

Pithos families: (1 % representation) 53 % flaring.

Baking Trays: No representation.

Base families: (2 % representation) 46 % podic; 25 % round; 12 % flat-large.

Handle families: (6 % representation) 85 % loop; 3 % lug. Lug 70 % knob; 18 % cordeye; 12 % crescentic. Loop 42 % plain jar/jug; 17 % large; 17 % plugaffixed; 7 % small; 6 % strap; 5 % central depression; 4 % cooking pot; 1 % donut; 1 % incised.

Ware-fabric by function: 35 % different wares; 23 % dining wares; 11 % pithos; 4 % cooking pots; 4 % baking tray; 1 % fine wares.

Clays: 62 % argillaceous; 35 % different wares; 3 % arenaceous. 29 % dining; 17 % pithos; 7 % cooking pot; 5 % baking tray; 3 % coarse; 3 % sandy coarse.

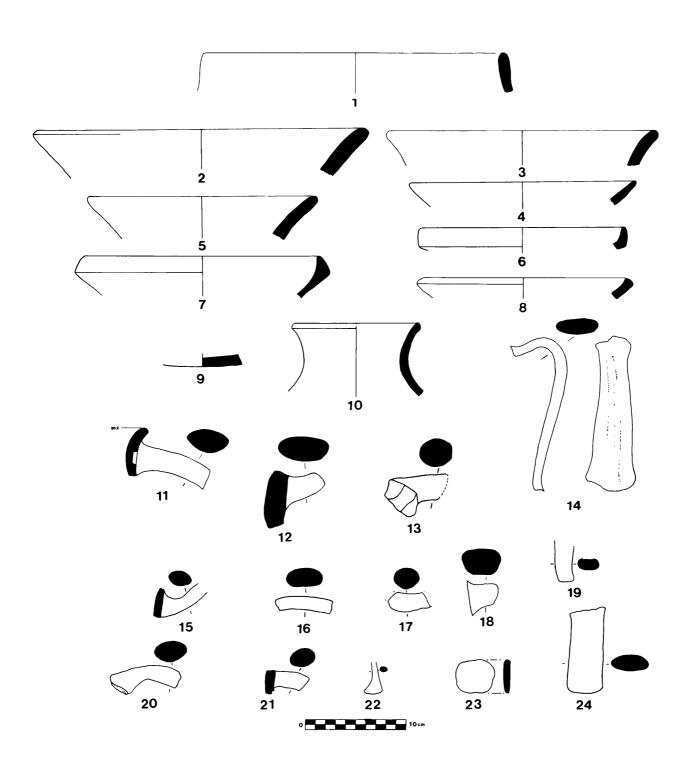
Ware colors: 53 % not coded; 14 % very dark gray (14); 7 % light red (40); 6 % light brown (37); 4 % yellowish red (39); 3 % red (42); 2 % dark reddish gray (07); 2 % dark reddish gray-brown; 2 % light reddish brown (23); and the following wares are each represented by 1 %: gray (03); black (15); dark reddish brown (17); red (20); reddish yellow (21); reddish yellow (22); mottled red-black (53).

Manufacture: 46 % handmade; 35 % not analyzed; 19 % manufacture could not be determined.

Cores: 56 % not analyzed; 33 % black; 5 % even; 5 % uneven and gray; 1 % lighter than surrounding fabric.

Liquid decoration: 36 % liquid decoration; 64 % undecorated. 35 % slip; 1 % uncertain.

Condition of decoration: 29 % good; 4 % intentionally mottled; 1 % flaky; 1 % the ware shows through.



300. Late Chalcolithic 3 Prevalent Types.

13. CH26 handle 1. X46 bowl 14. H13 handle 2. CE8 bowl 15. CH63 handle 3. CX59 bowl 16. CH27 handle 4. X80 bowl 17. CH18 handle 5. CX36 bowl 18. CH58 handle 6. X72 bowl 19. H(B)52 handle 7. X77 bowl 20. CH11 handle 8. XC7 bowl 21. CH44 handle 9. B28 base 22. CH75 handle 10. *CJ5* jar/jug 23. CD3 disk 11. CH72 handle 24. CH38 handle 12. CH80 handle

Slip families: 13 % black; 9 % salmon; 5 % brown; 3 % red-black; 3 % red; 1 % tan.

Slip color: 13 % black; 7 % salmon-red (2.5YR5/6); 2 % salmon-pink; 3 % red-black intentionally mottled; 2 % weak red (10R4/4); 2 % red-brown; 1 % red; 1 % brown-gray; 1 % dark brown; 1 % gray; 1 % tan.

Painted decoration: 98 % bear no paint; 2 % are white-painted.

Plastic decoration: 19 % burnished or smoothed.

Burnish and smoothing: 81 % unburnished; 2 % hand-burnished to a high luster (100 % oblique); 2 % hand-burnished to a medium luster (2 % vertical,

34 % horizontal, 64 % oblique); 11 % hand-burnished to a low luster (54 % horizontal, 1 % pattern, 43 % every-which-way, 2 % vertical, 34 % horizontal, 64 % oblique); 10 % hand-burnished to a low luster (54 % horizontal, 1 % pattern, 43 % every which way, 2 % vertical and horizontal); 5 % smoothed (4 % horizontally, 74 % every-which-way, 21 % vertical and horizontal).

Appliqué: 0.8 % bands; 2 knobs; 1 double knobs.

Excision: 1 linear horizontal.

Incision: 10 combing; 1 pinpricks plain.

LATE CHALCOLITHIC 4

3332 total fragments; 5% of total sample.

Part % per period: 83 % body sherds; 9 % rims; 5 % handles; 2 % bases; 1 % disks.

Size: 71 % not registered; 28 % small.

Bowl families: (6 % representation) 37 % flaring; 13 % vertical; 9 % inverted; 5 % incurving; 5 % curving; 3 % exterior-thickened.

Cooking Pot families: (2 % representation) 54 % flaring; 11 % everted; 10 % exterior-thickened; 7 % angular; 4 % vertical.

Jar and Jug familes: (1 % representation) 55 % flaring; 11 % angular.

Pithos and Baking Tray families: None represented.

Base families: (2 % representation) 46 % round; 31 % podic; 11 % flat large; 2 % ring large.

Handle families: (5 % representation) 5 % loop handles. Lug 100 % knob. Loop 53 % plain jar/jug; 12 % large; 10 % plug-affixed; 8 % small; 4 % strap; 4 % cooking pot; 4 % central depression; 3 % grooved and twisted; 1 % horizontal; 1 % incised.

Ware-fabric by function: 24 % different wares; 15 % pithos; 15 % dining; 8 % cooking pot; 2 % baking tray.

Clays: 74 % argillaceous; 24 % different wares; 2 % arenaceous. 32 % pithos; 11 % cooking pot; 18 % dining; 11 % coarse; 2 % very coarse; 1 % sandy coarse.

Ware colors: 48 % not coded; 7 % very dark gray (14); 6 % black (15); 5 % light reddish brown (23); 4 % light brown (37); 4 % light red (40); 3 % dark reddish brown; 3 % red (20); 3 % reddish yellow (21); 3 % yellowish red (39); 2 % dark reddish gray (07); 2 % brown (24); 2 % reddish yellow (38); 2 % red (42); 1 %

brown-gray (06); 1 % pinkish gray (08); 1 % dark reddish gray brown (12); 1 % red-brown (19).

Manufacture: 54 % not determined; 46 % handmade.

Core: 70 % unanalyzed; 22 % black; 5 % even; 3 % uneven or gray.

Liquid decoration: 30 % liquid decoration; 70 % undecorated. 29 % slip; 1 % self-same slip.

Condition of decoration: 25 % good; 2 % intentionally mottled; 2 % worn-off, ware shows through; 1 % flaky.

Slip families: 17 % black; 5 % salmon; 3 % brown; 3 % red; 1 % gray; 1 % tan.

Slip color: 17 % black; 4 % salmon-red (2.5YR5/6); 2 % weak red (10R4/4); 2 % browngray; 1 % salmon-pink; 1 % red-brown; 1 % gray; 1 % tan; 1 % red.

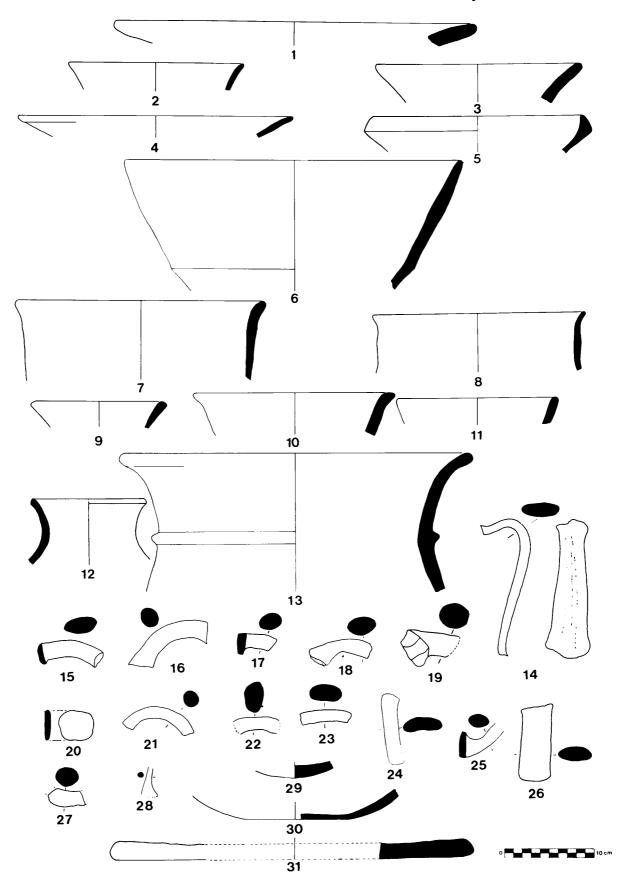
Painted decoration: 99 % unpainted; 1 % white-painted.

Plastic decoration: 21 % burnished or smoothed.

Burnish and smoothing: 79 % unburnished; 2 % hand-burnished to a high luster (15 vertical, 31 horizontal, 43 % oblique, 12 % every which way); 4 % smoothed (2 % horizontally, 75 % every which way, 23 % vertical and horizontal); 8 % hand-burnished to a medium luster (2 % vertical, 49 % horizontal, 49 % oblique); 7 % hand-burnished to a low luster (2 % vertical, 42 horizontal, 5 % pattern, 52 % every which way).

Appliqué: 76 or 2 % bands; 1 smoothed raised band.

Excision: 1 linear oblique. *Incision:* 1 linear oblique.



301. Late Chalcolithic 4 Prevalent Types.

- 1. X66 bowl 2. X48 bowl 3. CX36 bowl
- 4. X50 bowl
- 5. X77 bowl
- 6. CC32 cooking pot
- 7. CC11 cooking pot
- 8. CP25 cooking pot

- 9. X78 bowl
- 10. X67 bowl
- 11. CX24 bowl
- 12. CJ5 jar/jug
- 13. P5 pithos
- 14. H13 handle 15. H18 handle
- 16. H15 handle

- 17. CH44 handle
- 18. CH11 handle
- 19. CH26 handle
- 20. CD3 disk
- 21. H14 handle 22. CH9 handle
- 23. CH27 handle
- 24. *H26* handle

- 25. CH63 handle
- 26. CH38 handle
- 27. CH18 handle
- 28. CH75 handle
- 29. B74 base
- 30. B7 base
- 31. BT2 baking tray

BRONZE AGE 1

841 total fragments; 1 % of total sample.

Part % per period: 70 % body sherds; 15 % rims; 10 % handles; 3 % bases; 2 % disks.

Size: 99 % not registered; 1 % small.

Bowl families: (8 % representation) 27 % flaring; 19 % incurving; 17 % curving; 13 % inverted; 10 % vertical; 6 % exterior-thickened; 3 % rolled (thickened).

Cooking Pot families: (3 % representation) 43 % flaring; 11 % incurving; 11 % vertical; 7 % everted; 7 % angular; 7 % exterior-thickened.

Jar and Jug families: (3 % representation) 48 % flaring; 16 % exterior-thickened; 16 % everted; 8 % angular.

Pithos families: None represented.

Baking Tray: 1 % representation.

Base families: (3 % representation) 47 % round; 24 % flat-large; 5 % podic.

Handle families: (10 % representation) 60 % loop; 1 % lug. Lug - 100 % knob. Loop 47 % plain jar/jug; 10 % large; 8 % grooved and twisted; 8 % cooking pot; 8 % plug-affixed; 6 % small; 4 % incised; 4 % strap; 2 % grooved; 2 % central depression.

Ware-fabric by function: 15 % pithos; 14 % cooking pot; 1 % fine; 1 % straw-impressed.

Clays: 98 % argillaceous; 1 % different wares; 1 % arenaceous. 47 % pithos; 30 % cooking pot; 7 % sandy dining; 6 % dining ware; 1 % fine ware; 12 % coarse; 1 % very coarse.

Ware color: 62 % no ware color-coded; 6 % dark gray (13); 5 % pinkish gray (08); 4 % light brownish gray (09); 3 % light brown (37); 2 % black (15); 2 % brownish yellow (26); 2 % light olive-brown (34); 2 % reddish yellow (38); 2 % yellowish red (39); 1 % light red (40);

1 % gray (05); 1 % light brownish gray (10); 1 % very dark gray (14); 1 % dark brown (16); 1 % red-brown (19); 1 % red (20); 1 % reddish yellow (21); 1 % light reddish brown (23); 1 % strong brown (25); 1 % mottled red-black (53).

Manufacture: 64 % not determined; 36 % handmade.

Cores: 85 % not analyzed; 14 % uneven or gray; 1 % black.

Liquid decoration: 38 % decorated; 62 % undecorated. 31 % slip; 6 % self-same slip, 3 % slip-wash.

Condition of decoration: 24 % good; 7 % flaky; 3 % intentionally mottled; 2 % worn-off, the ware shows through; 1 % patchy.

Slip families: 25 % black; 7 % red; 5 % brown; 1 % salmon.

Slip color: 25 % black; 7 % red; 2 % brown; 1 % black-brown mottled; 1 % salmon-red (2.5YR5/6); 1 % brown-maroon.

Painted decoration: 99 % unpainted; 1 % white-painted.

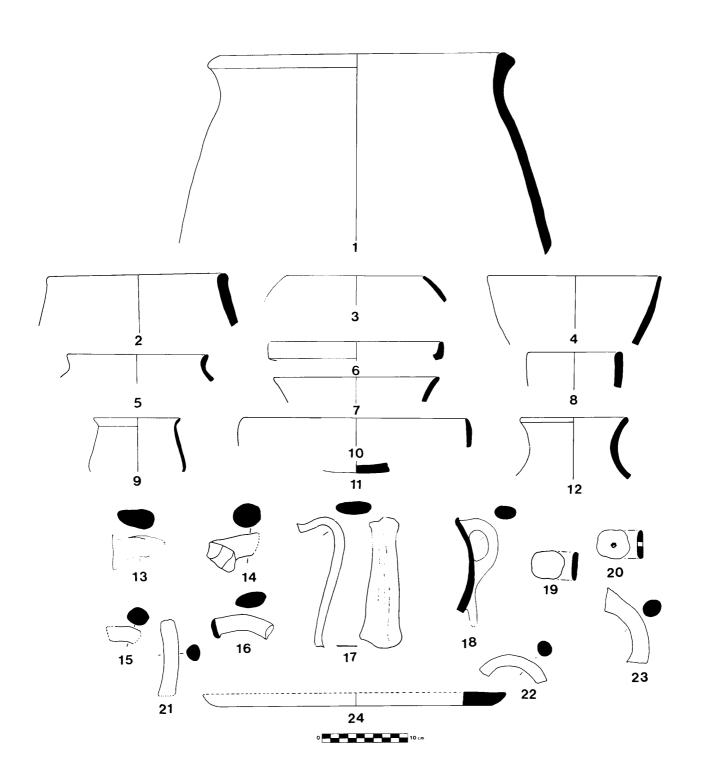
Plastic decoration: 26 % burnished or smoothed.

Burnish and smoothing: 74 % unburnished; 5 % hand-burnished to a high luster (24 % vertical, 76 % horizontal); 19 % hand-burnished to a medium luster (5 % vertical, 69 % horizontal, 26 % oblique); 1 % hand-burnished to a low luster (83 % every-whichway, 17 % horizontally); 1 % smoothed (100 % horizontal).

Appliqué: 120 bands or 14 %.

Excision: 1 linear horizontal.

Incision: 1 linear horizontal; 1 concentric circles; 1 diagonally grooved.



302. Bronze Age 1 Prevalent Types.

13. H19 handle 1. *J29* jar 14. CH26 handle 2. CX52 bowl 15. CH18 handle 3. CP32 cooking pot 16. H18 handle 4. CPI cooking pot 17. H13 handle 5. CP37 cooking pot 18. H29 handle 6. X72 bowl 19. CD3 disk 7. X48 bowl 20. CD4 disk 8. *X75* bowl 21. CH2 handle 9. *X74* bowl 22. H14 handle 10. X2 bowl 23. H15 handle 11. B28 base 24. BT4 baking tray 12. CJ5 jar/jug

BRONZE AGE 2

975 total fragments 2 % of total sample.

Part % per period: 56 % rims; 22 % handles; 11 % bases; 6 % body sherds; 4 % disks; 1 % miscellaneous.

Size: 100 % not registered.

Bowl families: (40 % representation) 64 % flaring; 8 % vertical; 8 % curving; 3 % incurving; 2 % inverted; 1 % plain carinated small; 1 % rolled (thickened); 1 % exterior-thickened.

Cooking Pot families: (6 % representation) 40 % flaring; 18 % vertical; 10 % incurving; 9 % everted; 4 % exterior-thickened; 7 % angular.

Jar and Jug families: (6 % representation) 68 % flaring; 6 % angular; 5 % everted; 2 % exterior-thickened.

Pithos families: (3 % representation) 54 % flaring.

Baking Tray families: 1 % representation.

Base families: (11 % representation) 30 % podic; 29 % flat large; 14 % round; 4 % ring high; 2 % flat small; 1 % ring large.

Handle families: (22 % representation) 65 % loop; 5 % lug. Lug 91 % knob, 9 % cordeye. Loop 41 % plain jar/jug; 18 % plug-affixed; 14 % large; 6 % incised; 6 % small; 3 % horizontal; 3 % central depression; 3 % strap; 3 % cooking pot; 1 % grooved and twisted; 1 % grooved.

Spout families: (1 % representation) 60 % beak; 20 % cutaway.

Ware-fabric by function: 52 % dining; 13 % cooking pot; 5 % coarse; 5 % pithos; 3 % fine; 1 % baking tray.

Clays: 90 % argillaceous; 10 % arenaceous. 47 % dining; 11 % fine; 11 % coarse; 11 % cooking pot; 8 % sandy; 6 % pithos; 4 % straw-tempered; 2 % sandy very coarse; 1 % very coarse.

Ware colors: None determined.

Manufacture: 58 % handmade; 10 % manufacture could not be determined; 32 % wheelmade.

Cores: (Not analyzed).

Liquid decoration: 67 % decorated; 33 % undecorated. 57 % slip; 8 % self-same slip.

Condition of decoration: 38 % good; 17 % flaky; 11 % intentionally mottled; 1 % patchy; 1 % worn-off, the ware shows through.

Slip families: 32 % red; 17 % black; 5 % brown; 5 % salmon; 2 % gray; 2 % red-black; 2 % tan; 1 % white; 1 % metallic.

Slip color: 32 % red slip; 17 % black slip; 4 % red-black, intentionally mottled; 3 % salmon-red (2.5YR5/6); 2 % brown; 2 % salmon-pink; 2 % red-brown; 2 % gray; 2 % brown-maroon; 1 % buff; 1 % black-brown mottled; 2 % tan; 1 % brown-gray; 1 % dark brown; 1 % gray metallic. Painted decoration: 98 % unpainted; 1 % white-painted; 1 % red-painted.

Plastic decoration: 52 % burnished or smoothed.

Burnish and smoothing: 48 % unburnished; 12 % hand-burnished to a high luster (22 % vertical, 74 % horizontal, 3 % every which way); 12 % hand-burnished to a medium luster (5 % vertical, 92 % horizontal, 2 % pattern, 1 % oblique, 1 % every-whichway); 1 % hand-burnished to a low luster (100 % horizontal); 28 % smoothed (100 % horizontal)

Appliqué: 4 raised bands; 4 knobs; 5 raised bands with incisions; 1 perpendicular raised band.

Appliqué: 1 miscellaneous; 1 diagonal hatching.

Excision: None.

Incision: 3 miscellaneous; 1 carved; 1 grooved; 1 herringbone; 1 linear horizontal.

BRONZE AGE 3

3003 total fragments; 5 % of total sample.

Part % per period: 52 % body sherds; 28 % rims; 10 % handles; 6 % bases; 1 % disks; 1 % miscellaneous.

Size: 100 % not registered.

Bowl families: (19 % representation) 35 % flaring; 15 % curving; 6 % incurving; 6 % vertical; 4 % exterior-thickened; 3 % rolled (thickened); 3 % inverted; 2 % angular; 1 % carinated large.

Cooking Pot families: (4 % representation) 41 % flaring; 14 % everted; 12 % angular; 11 % incurving; 5 % vertical.

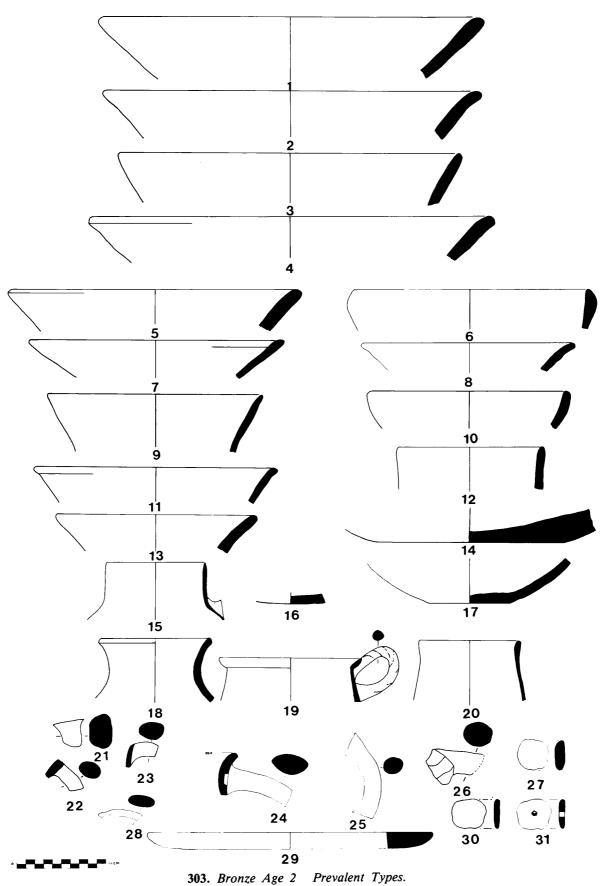
Jar and Jug families: (5 % representation) 44 % flaring; 9 % exterior-thickened; 6 % angular; 6 % everted.

Pithos families: (2 % representation): 33 % everted; 20 % exterior-thickened; 16 % flaring.

Baking Trays: (No representation).

Base families: (6 % representation) 31 % flat large; 15 % podic; 14 % round; 5 % ring large; 5 % flat small; 4 % ring high; 3 % omphalos; 2 % ring small.

Handle families: (10 % representation): 60 % loop; 8 % lug. Lug 68 % knob; 23 % crescentic; 9 % cordeye.



1. BXI bowl

9. BX12 bowl

10. BX15 bowl 11. BX14 bowl

16. B28 base

17. BB18 base

- 18. *CJ5* jar/jug
- 19. *H43* handle
- 20. BJ8 jar-jug
- 21. CH58 handle
- 22. CH44 handle
- 23. CH42 handle 24. CH72 handle

- 25. H15 handle
- 26. CH26 handle
- 27. CD1 disk
- 28. CH29 handle
- 29. BT4 baking tray
- 30. CD3 disk
- 31. CD4 disk

^{2.} BX2 bowl

^{3.} BX3 bowl

^{4.} BX4 bowl

^{5.} CE8 bowl

^{6.} BX26 bowl 7. BX19 bowl

^{8.} BJ3 jar/jug

^{12.} CC7 cooking pot

^{13.} CX36 bowl

^{14.} BB1 base

^{15.} *J31* jar

Loop - 46 % plain jar/jug; 10 % strap; 10 % large; 8 % plug-affixed; 6 % small; 6 % central depression; 4 % horizontal; 3 % incised; 3 % grooved and twisted; 2 % grooved; 2 % cooking.

Spout families: (No representation) 36 % cutaway; 29 % beak; 14 % trefoil.

Ware-fabric by function: 24 % dining; 17 % cooking pot; 18 % pithos; 4 % fine; 3 % baking tray.

Clays: 97 % argillaceous; 3 % arenaceous. 35 % dining; 25 % cooking pot; 19 % pithos; 12 % coarse; 4 % fine; 3 % straw-tempered; 3 % sandy.

Ware colors: 79 % no ware colors determined; 6 % light red (40); 5 % red (20); 3 % reddish yellow (22); 2 % pink (36); 1 % dark reddish gray (07); 1 % light reddish brown (23); 1 % weak red (43).

Manufacture: 45 % handmade; 39 % manufacture not determined; 16 % wheelmade.

Cores: 86 % not analyzed; 5 % even; 9 % uneven or gray.

Liquid decoration: 43 % decorated; 56 % undecorated. 33 % slip; 2 % slip-wash; 2 % wash; 8 % self-same slip.

Condition of decoration: 24 % good; 15 % flaky; 5 % intentionally mottled; 3 % worn-off, the ware shows through; 1 % patchy.

Slip families: 18 % red; 12 % black; 4 % brown; 4 % red-black; 3 % salmon; 1 % gray; 1 % metallic; 1 % tan; 1 % white.

Slip color: 21 % red; 11 % black; 5 % salmonred; 2 % gray; 2 % red-black intentionally mottled; 1 % brown; 1 % brown-gray; 1 % salmon-pink; 1 % red-brown; 1 % brown-maroon; 1 % buff; 1 % tan; 1 % red-black.

Painted decoration: 99 % unpainted; 1 % white-painted.

Plastic decoration: 25 % burnished or smoothed.

Burnish and smoothing: 75 % unburnished; 4 % hand-burnished to a high luster (76 % horizontal, 1 % oblique, 1 % every-which-way, 22 % vertical); 10 % hand-burnished to a medium luster (7 % vertical, 72 % horizontal, 20 % oblique); 2 % hand-burnished to a low luster (100 % horizontal); 9 % smoothed (99 % horizontal, 1 % every-which-way).

Appliqué: 82 bands or 3 %; 7 nipples; 1 snake; 1 raised band with a concave groove; 3 raised bands with incisions; 1 raised band with thumb impressions; 1 smoothed raised band.

Excision: 1 grooved; 1 diagonal hatching.

Incision: 2 linear oblique; 1 zigzag; 3 miscellaneous; 1 combed waves.

BRONZE AGE 4

7869 total fragments; 13 % of total sample.

Part % per period: 77 % body sherds; 13 % rims; 6 % handles; 3 % bases; 1 % disks.

Size: 93 % not registered; 7 % small.

Bowl families (7 % representation) 17 % curving; 15 % flaring; 13 % vertical; 12 % inverted; 7 % exterior-thickened; 6 % incurving; 4 % rolled (thickened); 3 % angular; 2 % carinated large; 1 % interior-exterior thickened.

Cooking Pot families: (3 % representation) 26 % everted; 25 % flaring; 6 % angular; 8 % exterior-thickened; 4 % incurving; 2 % vertical.

Jar and Jug families: (3 % representation) 30 % flaring; 25 % exterior-thickened; 11 % angular; 4 % everted.

Pithos and Baking Tray families: (No representation).

Base families: (3 % representation) 18 % ring-large; 18 % round; 16 % flat large; 14 % podic; 9 % flat small; 3 % ring small; 1 % ring high.

Handle families: (6 % representation) 65 % loop, 3 % lug. Lug 83 % knob; 17 % cordeye. Loop - 46 % plain jar/jug; 13 % large; 10 % plug-affixed; 9 % grooved and twisted; 6 % strap; 4 % horizontal; 3 % small; 3 % central depression; 2 % grooved; 2 % cooking pot; 1 % incised; 1 % donut.

Spout families: (No representation) 28 % trefoil; 22 % cutaway; 19 % beak; 9 % tubular.

Ware-fabric by function: 21 % dining; 8 % cooking pot; 4 % different; 4 % pithos; 2 % fine; 1 % baking tray.

Clays: 95 % argillaceous; 3 % different wares; 2 % arenaceous. 42 % pithos; 34 % dining; 12 % cooking pot; 3 % coarse; 2 % plain sandy; 2 % fine; 1 % strawtempered.

Ware colors: 88 % no ware color determined; 3 % red (20); 2 % light red (40); 1 % reddish gray brown (11); 1 % very dark gray (14); 1 % reddish yellow (22); 1 % pink (36); 1 % yellowish red (39); 1 % red (42).

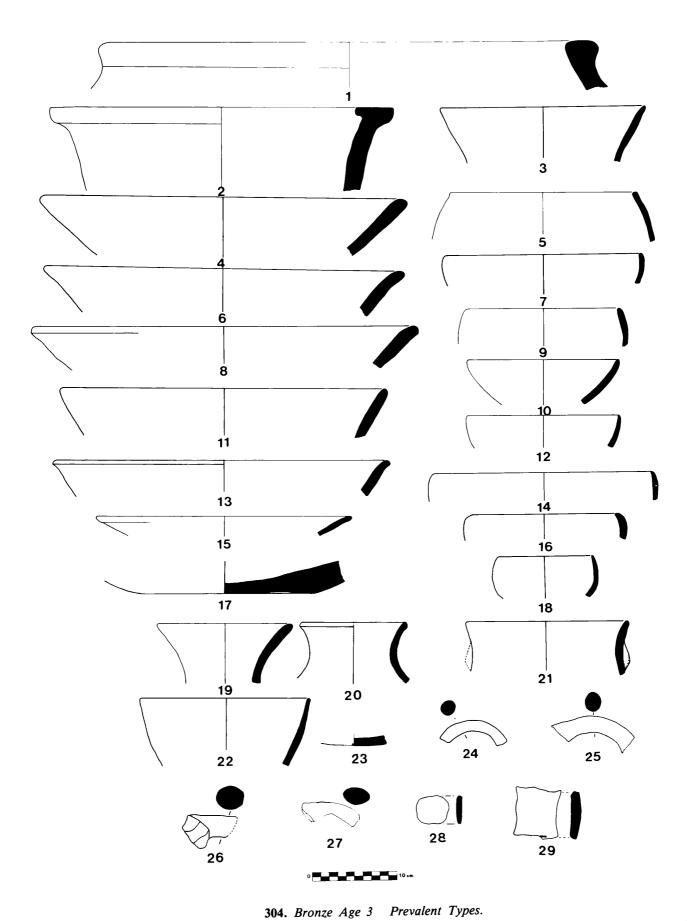
Manufacture: 63 % not determined; 19 % handmade; 13 % wheelmade; 4 % not analyzed.

Cores: 94 % not analyzed; 3 % black; 2 % even; 1 % grav.

Liquid decoration: 19 % decorated; 81 % undecorated. 15 % slip; 2 % slip-wash; 3 % self-same slip; 1 % gray or uneven.

Condition of decoration: 8% flaky; 20% good; 3% intentionally mottled; 1% patchy; 2% worn-off, the ware shows through.

Slip families: 8 % red-black; 6 % red; 5 % black; 3 % salmon; 2 % brown; 1 % gray; 1 % tan; 1 % white.



- P2 pithos
 P7 pithos
 BXI2 bowl
- 4. BXI bowl
- 5. CP2 cooking pot
- 6. BX2 bowl
- 7. *BX13* bowl
- 8. BX4 bowl
- 9. CP23 cooking pot
- 10. BX5 bowl
- 11. BX3 bowl
- 12. XI bowl

- 13. XY20 bowl
- 14. X2 bowl
- 15. X50 bowl
- 16. *BX23* bowl 17. BBI base
- 18. BX49 bowl

- 19. CJ14 jar/jug
- 20. CJ5 jar/jug
- 21. CC26 cooking pot
- 22. CP1 cooking pot
- 23. B28 base
- 24. H14 handle
- 25. H15 handle
- 26. CH26 handle
- 27. CH11 handle
- 28. CD3 disk
- 29. MF12 miscellaneous fragment

Slip color: 13 % red; 6 % black; 4 % salmon red; 2 % red-black intentionally mottled; 2 % buff; 1 % brown; 1 % salmon-pink; 1 % red-brown; 1 % gray; 1 % brown-maroon; 1 % tan.

Painted decoration: 99 % unpainted; 1 % white-painted.

Plastic decoration: 8 % burnished or smoothed.

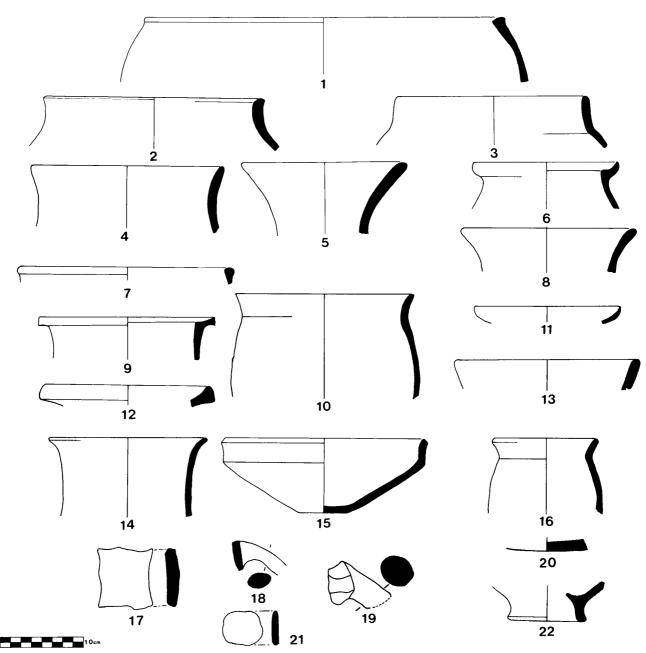
Burnish and smoothing: 92 % unburnished; 1 % hand-burnished to a high luster (80 % horizontal, 1 % pattern, 13 % every-which-way, 3 % vertical and horizontal, 1 % uncertain, 2 % vertical); 2 % hand-burnished to a medium luster (1 % unknown direction, 10 % vertical, 82 % horizontal, 7 % oblique);

3 % hand-burnished to a low luster (38 % horizontal, 49 % every-which-way, 12 % vertical and horizontal); 2 % smoothed.

Appliqué: 38 bands; 10 nipples; 4 snake design; 1 raised band with thumb impressions; 1 smoothed-raised band.

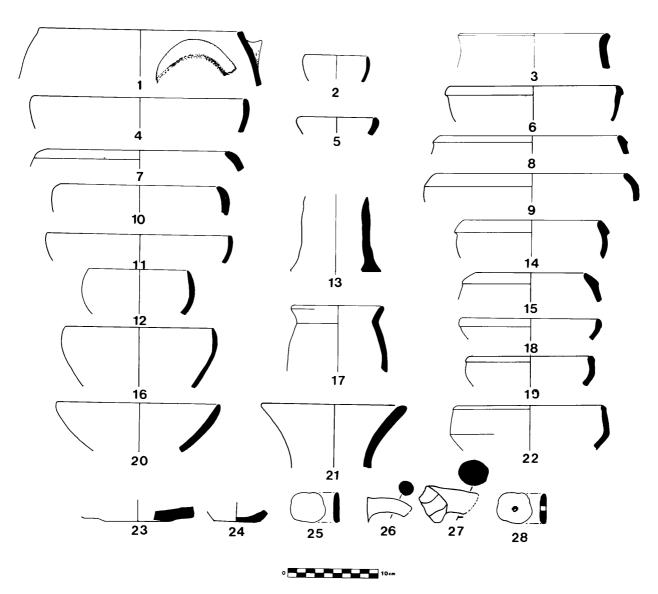
Excision: 1 combing; 2 linear oblique; 2 miscellaneous; 2 combing and pinprick; 2 random slashing.

Incision: 2 combed horizontal bands with waves; 3 combed; 1 herringbone; 2 miscellaneous; 2 linear horizontal; 1 linear oblique; 2 zigzag; 1 diagonal hatching on neck; 1 square ribbing; 1 rounded ribbing.



305. Bronze Age 4 Prevalent Types.

- 1. *X7* bowl
- 2. CP3 cooking pot
- 3. BC11 cooking pot
- 4. CC26 cooking pot
- 5. CJ14 jar/jug
- 6. CP9 cooking pot
- 7. X45 bowl
- 7. A43 DOWI
- 8. CC10 cooking pot 9. CP10 cooking pot
- 10. BC2 cooking pot
- 11. XX56 bowl
- 12. *X71* bowl
- 13. CX24 bowl
- 14. CC15 cooking pot
- 15. X4 bowl
- 16. CC13 cooking pot
- 17. MF12 miscellaneous fragment
- 18. CH63 handle
- 19. CH26 handle
- 20. B28 base
- 21. *CD4* disk
- 22. *B17* base



306. Bronze Age 4 Middle Bronze Prevalent Types.

1. H30 (on CP2) cook-	6. <i>X60</i> bowl	12. <i>BX49</i> bowl	18. <i>XY8</i> bowl	25. CD3 disk
ing pot with handle	7. <i>BX47</i> bowl	13. <i>N1</i> neck	19. <i>XY26</i> bowl	26. BH39 handle
2. <i>BX55</i> bowl	8. <i>X22</i> bowl	14. <i>MX76</i> bowl	21. <i>CJ14</i> jar/jug	27. CH26 handle
3. CC33 cooking pot	9. <i>X38</i> bowl	15. <i>XY12</i> bowl	22. XY25 bowl	28. CD4 disk
4. <i>BX13</i> bowl	10. <i>BX23</i> bowl	16. <i>XX56</i> bowl	23. <i>B67</i> base	
5. <i>BX51</i> bowl	11. X17 bowl	17. CC13 cooking pot	24. B1 base	

BRONZE AGE 4 - MIDDLE BRONZE

3213 total fragments; 5 % of total sample.

Part % per period: 57 % rims; 19 % handles; 13 % bases; 5 % body sherds; 3 % disks; 1 % spouts; 2 % miscellaneous.

Size: 93 % not registered; 7 % small.

Bowl families: (37 % representation) 14 % rolled (thickened); 14 % curving; 12 % exterior-thickened; 12 % incurving; 9 % vertical; 9 % inverted; 8 % flaring; 1 % carinated large; 1 % angular; 1 % everted.

Cooking Pot families: (9 % representation) 38 % flaring; 18 % everted; 10 % exterior-thickened; 7 % angular; 6 % vertical; 3 % incurving.

Jars and Jug families: (9 % representation) 47 % flaring; 12 % exterior-thickened; 7 % everted; 4 % angular.

Pithos families: (2 % representation) 19 % everted; 17 % flaring; 6 % exterior-thickened.

Baking Trays: 6 % representation.

Base families: (13 % representation) 31 % flat large; 12 % round; 12 % flat small; 10 % podic; 10 % ring large; 4 % ring small; 2 % ring high.

Handle families: (19 % representation) 54 % loop; 8 % lug. Lug 55 % knob; 31 % crescentic; 12 % cordeye; 2 % large lug. Loop - 39 % plain jar/jug; 13 % small; 12 % strap; 10 % plug-affixed; 8 % large; 6 % central depression; 6 % horizontal; 4 % grooved and twisted; 1 % grooved; 1 % incised.

Spout families: (1 % representation) 28 % trefoil; 22 % cutaway; 19 % beak; 9 % tubular; 6 % quatrefoil.

Ware-fabric by function: 62 % dining; 16 % cooking pot; 6 % pithos.

Clays: 98 % argillaceous; 2 % arenaceous. 55 % dining; 20 % cooking pot; 13 % fine; 7 % pithos; 3 % coarse; 2 % sandy.

Ware color: 84 % not determined; 8 % pale brown (29); 7 % reddish yellow (22); 1 % red (20).

Manufacture: 17 % manufacture not determined; 44 % wheelmade; 39 % handmade.

Cores: (Not analyzed).

Liquid decoration: 66 % decorated; 34 % undecorated. 53 % slip; 1 % slip-wash; 12 % self-same slip.

Condition of decoration: 18 % good; 7 % flaky; 3 % worn-off, the ware shows through; 2 % mottled. Slip families: 27 % red; 10 % salmon; 10 % black; 7 % brown; 4 % red-black; 4 % white; 3 % tan; 2 % gray.

Slip color: 27 % red; 10 % black; 9 % salmon-red; 4 % red-black intentionally mottled; 3 % buff; 3 % tan; 2 % brown-maroon; 1 % brown; 1 % browngray; 1 % gray; 1 % salmon.

Painted decoration: 100 % unpainted.

Plastic decoration: 12 % plastic decoration.

Burnish and smoothing: 97 % unburnished; 12 % hand-burnished to a medium luster (100 % horizontal).

Appliqué: 1 band; 1 knob; 1 raised band; 6 raised bands with incisions.

Excision: 1 carved; 1 linear vertical; 1 linear oblique; 2 miscellaneous.

Incision: 2 linear vertical; 1 zigzag; 1 linear horizontal; 1 dots; 1 carved; 4 diagonal hatching/slashing on neck; 1 slashing between excised bands; 2 linear oblique; 2 miscellaneous.

MIDDLE BRONZE AGE

816 total fragments; 1 % of total sherd count.

Part % per level: 35 % rims; 23 % body sherds; 21 % handles; 14 % bases; 3 % disks; 1 % spouts; 1 % miscellaneous.

Size: 100 % not registered.

Bowl families: (18 % represented) 23 % exterior-thickened; 19 % rolled (thickened); 10 % curving; 5 % incurving; 5 % everted; 5 % inverted; 4 % carinated-large; 3 % flaring; 3 % vertical; 1 % angular; 1 % interior-exterior thickened.

Cooking Pot families: (7 % representation) 33 % everted; 23 % flaring; 3 % vertical; 15 % exterior-thickened; 3 % angular; 2 % incurving.

Jars and Jug families: (7 % representation) 18 % flaring; 17 % exterior-thickened; 11 % everted; 6 % angular.

Pithos families: (3 % representation) 27 % everted; 4 % exterior-thickened; 4 % flared.

Baking Trays: No representation.

Base families: (14 % representation) 77 % ring large; 22 % flat small; 16 % flat large; 15 % round; 2 % podic; 2 % ring high; 2 % ring small.

Handle families: (21 % representation) 55 % loop; 1 % lug. Lug 67 % crescentic; 33 % knob. Loop 38 % plain jar/jug; 29 % grooved and twisted; 11 % large; 5 % plug-affixed; 4 % small; 4 % central depression; 3 % strap; 2 % cooking pot; 2 % horizontal; 1 % ear.

Spout families: (1 % representation) 78 % cutaway; 11 % trefoil.

Manufacture: 52 % wheelmade; 28 % manufacture not determined; 20 % handmade.

Ware-fabric by function: 53 % dining; 17 % cooking pot; 9 % pithos; 1 % fine.

Cores: 78 % not analyzed; 15 % black; 4 % even; 3 % uneven or gray.

Ware color: 84 % ware color not coded; 4 % pale red (41); 3 % black (15); 3 % pink (36); 3 % light red (40); 1 % red (20); 1 % reddish yellow (22).

Liquid decoration: 50 % decorated; 50 % undecorated. 35 % slip; 1 % slip-wash; 1 % wash; 11 % self-same slip; 1 % Hellenistic glaze; 2 % feldspathic Islamic glaze.

Condition of decoration: 13 % good; 6 % flaky; 2 % worn-off, the ware-fabric shows through.

Slip families: 18 % red; 1 % tan; 8 % black; 7 % salmon; 5 % white; 4 % red-black; 3 % brown; 1 % red metallic; 2 % miscellaneous; 1 % gray.

Slip color: 18 % red; 8 % black; 8 % salmon; 5 % buff; 4 % red-black intentionally mottled; 1 % brown; 1 % black metallic; 1 % red-brown; 1 % gray; 1 % brown-maroon; 2 miscellaneous.

Painted decoration: 100 % unpainted.

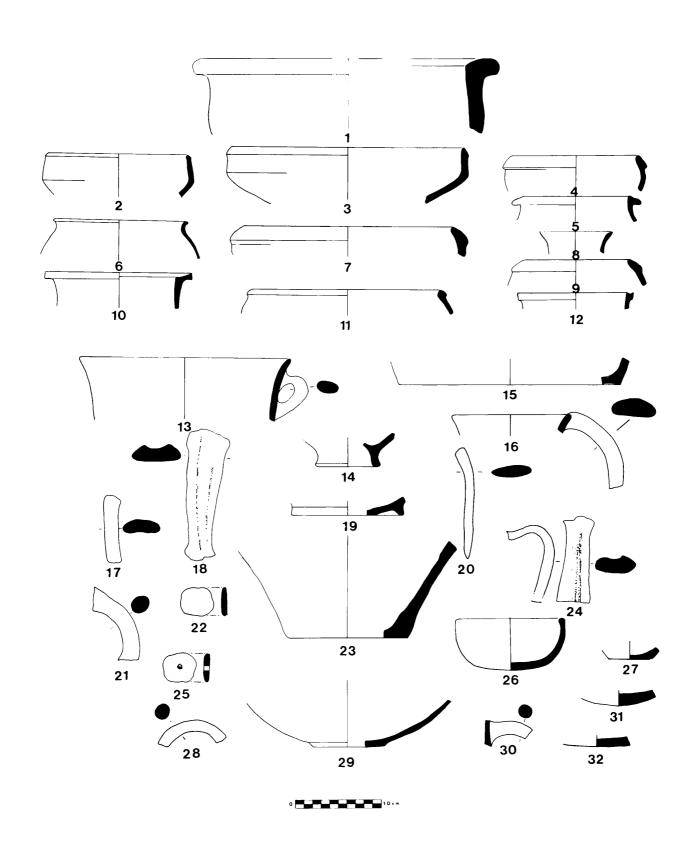
Plastic decoration: 4 % plastic decoration.

Burnish and smoothing: 96 % unburnished; 3 % hand-burnished to a medium luster (90 % horizontal, 10 % every which way); 1 % either smoothed or burnished.

Appliqué: 0

Excision: 1 combing; 2 grooved.

Incision: 1 miscellaneous; 1 linear vertical; 1 linear horizontal; 3 linear oblique; 1 arc; 3 wavy bands; 1 combing; 2 carved.



1. P4 pithos

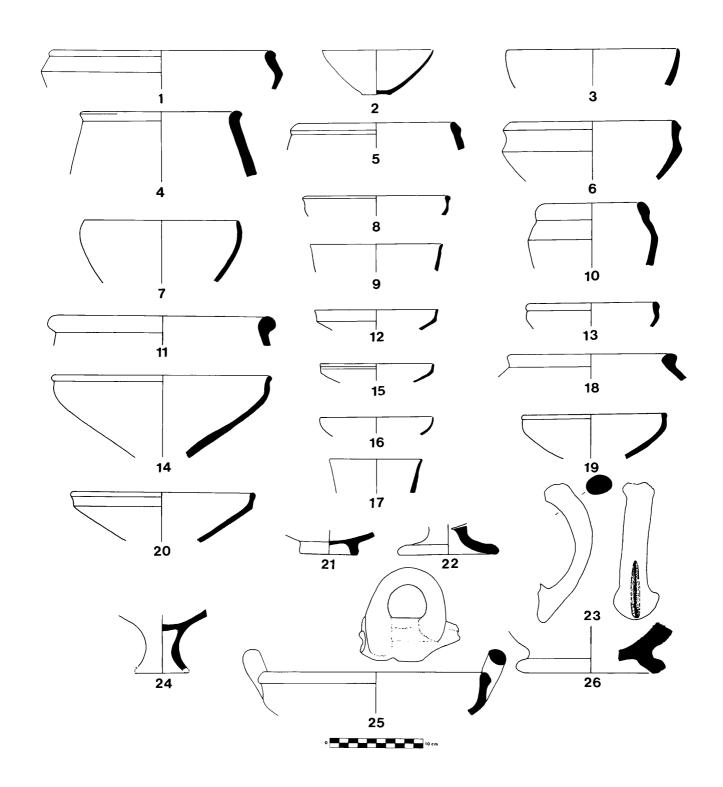
- 2. XY25 bowl
- 3. *MX80* bowl
- 4. MX76 bowl
- 5. CP17 cooking pot
- 6. CP39 cooking pot
- 7. BX32 bowl
- 8. J49 jar

307. Middle Bronze Age Prevalent Types.

- 9. XY12 bowl
- 10. CP10 cooking pot
- 11. *BX93* bowl
- 12. CP12 cooking pot
- 13. H7 handle
- 14. B17 base
- 15. B6 base 16. H25 handle

- 17. H26 handle
- 18. H25 handle
- 19. B18 base
- 20. H91 handle
- 21. H12 handle
- 22. CD3 disk
- 23. MB10 base 24. H29 handle

- 25. CD4 disk
- 26. B86 base
- 27. B1 base
- 28. H14 handle
- 29. B2 base
- 30. BH39 handle
- 31. B74 base
- 32. B28 base



308. Late Bronze Age

- 1. XX35 bowl
- 2. B50 base of a bowl
- 3. XI bowl
- 4. CP50 cooking pot
- 5. XX33 bowl
- 6. XX32 bowl
- 7. XX56 bowl
- 8. XX42 bowl
- 9. XXI bowl
- 10. XX18 bowl
- 11. CP42 cooking pot
- 12. XX28 bowl
- 13. XX43 bowl

- Prevalent Types.
 - 14. XX17 bowl
 - 15. XX40 bowl
 - 16. XX45 bowl
 - 17. XX44 bowl

 - 18. CP43 cooking pot
 - 19. XX41 bowl
 - 20. XX36 bowl
 - 21. B53 base
 - 22. B49 base
 - 23. H73 handle
 - 24. B55 base
 - 25. H69 handle
 - 26. B47 base

LATE BRONZE

6609 total fragments; 11 % of total sample.

Part % per period: 46 % body sherds; 30 % rims; 11 % bases; 8 % handles; 4 % miscellaneous.

Size: 100 % not registered.

Bowl families: (22 % representation) 40 % exterior-thickened; 17 % rolled (thickened); 13 % curving; 9 % carinated small; 5 % vertical; 3 % carinated large; 1 % angular; 1 % flaring.

Cooking Pot families: (5 % representation) 68 % exterior-thickened; 15 % everted; 4 % flaring; 1 % angular.

Jar and Jug families: (2 % representation) 42 % exterior-thickened; 15 % everted; 10 % flaring; 3 % angular.

Pithos families: (1 % representation) 54 % exterior-thickened; 30 % everted; 1 % flaring.

Baking Trays: No representation.

Base families: (11 % representation) 44 % ring large; 27 % flat small; 16 % ring high; 5 % ring small; 3 % flat large.

Handle families: (8 % representation) 76 % loop; 4 % lug. Lug 58 % knob; 32 % large lug; 10 % cordeye. Loop 38 % horizontal; 15 % grooved; 15 % plain jar/jug; 8 % strap; 8 % small; 6 % grooved and twisted; 5 % ear; 3 % large; 2 % central depression.

Spout families: (1 % representation) 42 % tubular; 30 % trefoil; 18 % long beak; 3 % trough.

Ware-fabric by function: 11 % fine wares; 7 % cooking pot; 3 % pithos.

Clays: 99 % argillaceous; 1 % arenaceous. 7 % cooking pot; 75 % dining; 3 % pithos 12 % fine; 1 % sandy.

Ware colors: 12 % not determined. 30 % light red (40); 17 % red (20); 9 % pale brown (29); 9 % pinkish white (35); 4 % reddish yellow (21); 3 % dark yellowish brown (37); 2 % dark reddish brown (17); 2 % reddish yellow (38); 1 % light brown gray (03); 1 % dark reddish gray (07); 1 % reddish gray brown (11); 1 % dark reddish gray-brown (12); 1 % light reddish-brown (23); 1 % pink (36).

Manufacture: 76 % wheelmade; 14 % handmade; 10 % manufacture not determined.

Cores: 74 % even; 12 % not analyzed; 11 % black; 2 % lighter than surrounding fabric; 1 % gray.

Liquid decoration: 68 % decorated; 32 % undecorated. 6 % slip; 1 % slip-wash; 62 % wash.

Condition of decoration: 62 % worn-off, the ware-fabric shows through; 5 % good; 1 % flaky.

Slip families: 62 % metallic; 3 % red; 2 % black; 1 % brown.

Slip color: 61 % gold; 3 % red; 2 % black.

Painted decoration: 95 % unpainted; 3 % redpainted; 1 % black-painted.

Plastic decoration: 1 % plastic decoration.

Burnish and smoothing: 99 % unburnished; 1 % hand-burnished to a high luster (4 % vertical, 62 % horizontal, 23 % lattice pattern, 3 % every which way, 8 % direction undetermined).

Appliqué: 22 raised bands; 1 two broad bands; 1 raised band with a concave groove.

Excision: 1 combing; 6 miscellaneous; 11 grooved; 6 linear vertical; 7 linear horizontal; 1 plain pinprick; 1 shaved; 4 ribbed; 3 wavy bands with lateral combing.

Incision: 2 combing; 19 miscellaneous; 8 grooved; 7 herringbone; 2 slashing between excised bands; 2 linear horizontal; 1 linear oblique; 1 plain pinpricks; 3 ribbed squared-off ribbing; 3 ribbed rounded ribbing; 1 rope; 7 arc.

IRON AGE

1509 total fragments; 2 % of total sample.

Part % per period: 57 % body sherds; 27 % rims; 8 % bases; 5 % handles; 2 % miscellaneous.

Size: 100 % not registered.

Bowl families: (18 % representation) 29 % curving; 19 % exterior-thickened; 8 % carinated small; 7 % carinated large; 5 % rolled (thickened); 4 % vertical; 1 % flaring; 1 % inverted.

Cooking Pot families: (7 % representation) 64 % exterior-thickened; 9 % angular; 5 % incurving; 1 % flaring; 1 % vertical.

Jar and Jug families: (1 % representation) 40 % exterior-thickened; 25 % everted; 10 % flaring.

Pithos families: (1 % representation) 39 % everted; 5 % exterior-thickened.

Baking Trays: None represented.

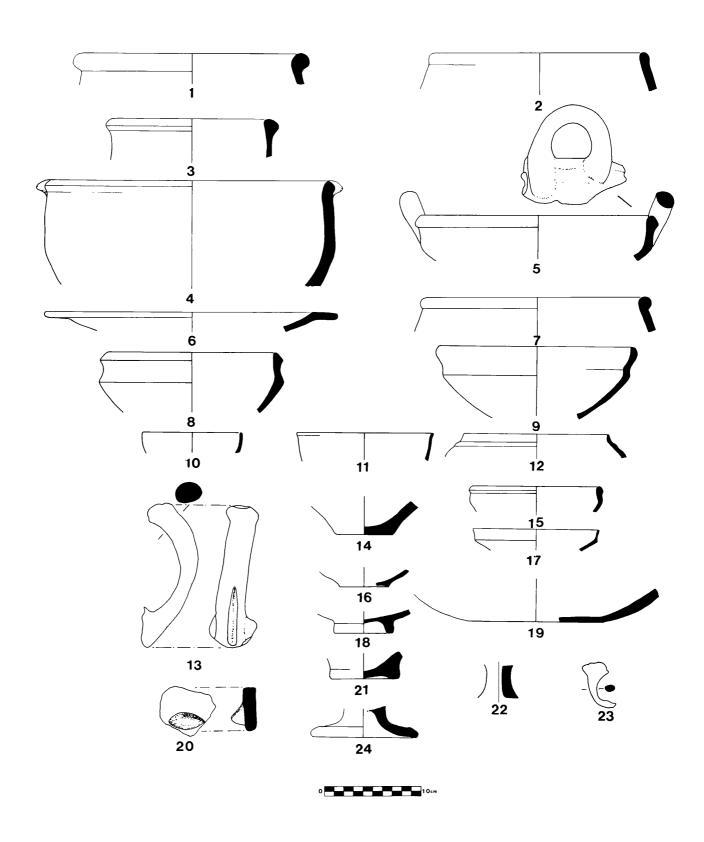
Base families: (8 % representation) 34 % ring large; 14 % flat large; 13 % ring high; 12 % round; 8 % flat small; 7 % ring small; 5 % podic.

Handle families: (5 % representation) 70 % loop; 18 % lug. Lug 79 % knob; 21 % large lug. Loop 23 % horizontal; 19 % plain jar/jug; 19 % grooved; 15 % small; 13 % large; 7 % strap; 4 % central depression.

Ware-fabric by function: 56 % dining; 18 % fine; 12 % cooking pot; 8 % pithoi.

Clays: 98 % argillaceous; 1 % arenaceous; 1 % different wares. 60 % dining; 16 % fine; 10 % cooking pot; 8 % pithos; 4 % coarse; 1 % sandy; 1 % sandy coarse.

Ware color: 4 % not determined. 27 % red (20); 25 % light red (40); 8 % pinkish white (35); 6 % red-brown (19); 5 % reddish yellow (21); 4 % dark reddish gray (07); 4 % light brown (37); 3 % reddish yellow (22); 3 % pink (36); 2 % pale brown (29); 2 % reddish yellow (38); 1 % white (01); 1 % light brownish gray (09); 1 % reddish gray brown (11) 1 % very dark gray (14); 1 % dark red (18); 1 % reddish yellow (23); 1 % yellow (28).



309. Iron Age Prevalent Types.

- 1. CP42 cooking pot
- 2. CP53 cooking pot
- 3. CP41 cooking pot
- 4. CP46 cooking pot
- 5. *H69* handle
- 6. XXI bowl
- 7. CP57 cooking pot
- 8. XX32 bowl

- 9. XX21 bowl
- 10. XX51 bowl
- 11. XXI bowl
- 12. XX4 bowl
- 13. H73 handle
- 14. B5 base 15. XX43 bowl
- 16. B35 base

- 17. XX28 bowl
- 18. B53 base
- 19. B7 base
- 20. *H94* handle
- 21. B46 base
- 22. N2 neck
- 23. *H48* handle
- 24. B49 base

Manufacture: 60 % wheelmade; 29 % handmade; 12 % manufacture not determined.

Cores: 63 % even; 27 % black; 4 % not analyzed; 3 % uneven; 1 % lighter than surrounding fabric.

Liquid decoration: 50 % decorated; 50 % undecorated. 32 % slip; 9 % slip-wash; 9 % wash.

Condition of decoration: 23 % worn-off, the ware-fabric shows through; 19 % good; 6 % flaky; 1 % mottled.

Slip families: 18 % red; 11 % brown; 9 % black; 9 % metallic; 2 % red-black; 1 % white; 1 % salmon.

Slip color: 18 % red; 9 % black; 7 % gold; 7 % brown-maroon; 2 % red-brown; 1 % brown; 1 % silver; 1 % brown-gray; 1 % red-black intentionally mottled.

Painted decoration: 96 % unpainted; 1 % painted in black, red, and white respectively.

Plastic decoration: No smoothing or burnishing.

Appliqué: 11 raised bands.

Excision: 4 miscellaneous; 7 grooved; 1 zoned; 1 linear horizontal.

Incision: 2 combing; 9 miscellaneous; 1 grooved; 1 herringbone; 1 slashing between excised bands; 5 linear horizontal; 2 linear oblique; 1 squared-off ribbing; 3 random slashing; 2 rope.

Summary

The picture that emerges from the analysis of the pottery on the basis of the type series and its computer analyses is one of broken development. There are several phases discernable:

Phase 1. Late Neolithic (?) (Gap)

Phase 2. Late Chalcolithic Anatolian Early Bronze I

Phase 3. (Gap?) Early Bronze II (Gap)

Phase 4. Early Bronze IIIA-B Middle Bronze (Gap?)

Phase 5. Late Bronze Iron Age (Gap) Lydian

Late Neolithic (?). As already noted, relatively little which could be called typically Late Neolithic was identified in this level — about 80 % of the diagnostics and 94 % of the decoration was Hacılar Level VII in type. Typical handmade bowls, handles, knob appliqués, and bases showed affinities with Hacılar forms, as did the ware-fabrics in terms of color, manufacture, and texture. In this period vertical and flaring bowls achieved a high frequency of occurrence; no cooking pots, jars/jugs, pithoi or baking trays occurred; large handles dominated loop handles and flat bases accounted for 38 % of the assemblage. 59 % of the fragments were slipped — 34 % with red; 18 % red-brown and 2 % in black

None of the fragments were painted. Over one-third of the slipped fragments were intentionally mottled and 58 % were burnished or smoothed. Only four fragments bore impressions which were the result of turning on a mat.

The Late Chalcolithic 1. With this period, the proportion of Hacılar forms common to Late Neolithic (?) fell off abruptly. Red-brown slips all but disappeared; smoothing, flaring bowl shapes and ware-fabrics were replaced by 45 % less liquid decoration (a decrease of 36 % that were slipped) and with a high proportion of black and dark gray colors. Along with excision and incision, white-painted wares made their appearance and there was a small rise in burnished wares while there was a significant loss in smoothed wares — a drop of 44 %. The red brown, Thin Plain a fabric (PTa), was replaced by dark gray-black Thin Plain b wares. There was a 64 % decrease in black cores indicating that firing programs changed. Although flaring forms dominated this assemblage they dropped 24 % over the Late Neolithic (?) period and shared the stage with a new repertoire of classes and shapes. Identifiable bowl families characteristic of the Late Chalcolithic began to emerge, including inverted, exterior-thickened shapes that made their first appearance. Cooking pots appeared as did baking trays. Loop handle families gained 48 % over their showing in the Late Neolithic (?) and dominated the handle class — there was a 21 % decrease in lug handle appearances. Squat irregular spindle whorls made their earliest appearance. The differences were major between the Late Neolithic (?) and the Late Chalcolithic 1, indicating that there was either a gap between these two periods as was suggested earlier, or that a significant cultural change took place.

Late Chalcolithic 2. Between Late Chalcolithic 1 and 2 periods, there were so few changes in the ceramic repertoire that this period reflects the continuation of an established potting tradition. The use of slip was on the increase (24 %), and white-painted wares reached their highest occurrence representing 2 % of the sherd bulk. Along with a greater variety of slip colors, there were slight increases in burnishing and smoothing. Podic bases which had appeared in Late Chalcolithic 1, gained 20 % greater popularity in use and flat large bases decreased by 24 %. The use of the cordeye handle dropped by 30 % and the crescentic lug appeared. Jar and jug families occurred in greater numbers and flaring forms continued to dominate this class, as did flaring and vertical forms in the bowl class. Biconically-shaped spindle whorls first appeared.

Late Chalcolithic 3. The pottery of this period had clear antecedents in earlier periods, but it represented

some major changes within the Chalcolithic. There was a 21 % decrease in both flaring and vertical bowl families and a 12 % increase in the inverted family. The inverted form reached its highest frequency of occurrence in this period, 17 % of the bowl families. As for the bases, there was a 19 % increase in the podic family which now dominated the class. Handles witnessed a 17 % drop in the use of the cordeye family, a 7 % increase in crescentic types — and a 7 % gain in the plug-affixed family. Although black slip continued to be in favor, there was an increase of salmon red and brighter-colored slips. The earliest incised spindle whorls appeared in this period, as did globularly-shaped loom weights *infra*.

Late Chalcolithic 4. A reversal took place in the bowl families: i.e., there was a return to flaring and vertical families, a respective 10 % and 7 % increase, that in part supplanted the 6 % decreased use of the inverted family. Bases showed a 15 % decrease in the podic family and a 21 % increase in the use of the round base; crescentic lug handles disappeared. Black and salmon reds continued to be the favored slip colors and white-painted decoration continued. No dramatic changes took place, so it can be reasoned that this period represented a continuum of Late Chalcolithic development.

Bronze Age 1. From the ceramic evidence there was no hiatus between the Late Chalcolithic 4 and Bronze Age 1 at Aphrodisias. There were, however, changes that cannot be dismissed when comparing this period to its predecessor. In the bowl class, flaring forms continued to dominate the rim assemblages, but they decreased by 10 %; increases in the incurving family were 14 %, and 12 % in curving families. The rolled (thickened) family made its appearance. Cooking pot and jar and jug classes reflected the same sort of changes — a decrease in flaring forms: in the cooking pot class, incurving forms appeared and accounted for 11 %, and the flaring family decreased by the same amount. Flaring rimmed jars and jugs decreased by 7 %, and the newly arrived exterior-thickened and everted forms each represented 16 % of this class. Bases had a 26 % decrease in the podic family and a 13 % increase in flat large types. Slip decoration showed an upsurge with an 8 % increase in black slip, and 4 % increase in the use of red and salmon colors. No white-painted wares occurred. Crescentic loom weights infra first appeared in this period.

Bronze Age 2. There were a number of changes in this period's ceramics that indicated a break between it and Bronze Age 1. 32 % of the wares were now wheelmade and there was a 23 % increase in plastic decoration with 26 % of this an increase in burnishing.

Ceramic classes also indicated change: bowls had a 37 % increase in flaring forms and an 11 % decrease of exterior-thickened shapes. Podic bases once again gained favor and increased 25 %, whereas round bases decreased 33 %. High ring or pedestal bases were present along with the large ring family. Handles had a 12 % increase in overall representation. Although insignificant in numbers, beak and cutaway spouts were introduced and appeared simultaneously. There was a 29 % increased use of slip for decoration — a 25 % higher representation for red slips and a drop of 8 % for black slips; metallic slip-wash appeared in a minor way; intentionally mottled slips found favor. White-painting reappeared but with a minimal presence.

Bronze Age 3. The morphological development of Bronze Age 3 from Bronze Age 2 is not clear. The changes that occurred include the reduction of flaring forms in bowl rim classes. Flared bowl families reflected a decrease of 29 %, flaring-cooking pots of 24 %, and flaring pithoi 38 %; the everted family dominated the pithos class. Baking trays disappeared, straw-tempered wares appeared for the first time and crescentic lug handles reappared. The use of slips decreased 24 \%; there was no dramatic color change, but less use of slip decoration along with an increased use of appliqué. White-painted wares continued with a minor representation. Although spout families had no significant percentage, cutaway and beak forms continued in Bronze Age 3 and were joined by the earliest appearance of the trefoil spout family. For some reason, perhaps indicating a different use of the excavated areas, the ceramics of Bronze Age 3 are incompletely understood. There were, however, more fine dining wares, 58 %, in Bronze Age 2 than in Bronze Age 3 representing 3 %.

Bronze Age 4. The change of families from Bronze Age 3 to Bronze Age 4 indicated an interrelationship among important factors. There continued to be a reduction of flaring forms in most classes; the bowl class had a 20 % decrease, but there were slight percentage increases of curving exterior-thickened, rolled, (thickened) angular, and large carinated families with the vertical family exhibiting a 7 \mathfrak{m} increase. Inverted bowls disappeared. For cooking pots there was a 16 % decrease of the flaring family as well as decreases in the angular, incurving and vertical families. Everted forms in this class gained 8 % over Bronze Age 3. In jars and jugs there was a 14 % decrease in the flaring family and a 16 % increase in the exterior-thickened and 5 % increase in the angular families. At Aphrodisias depas cups are introduced in this period. Base families found a 13 % increase in large ring bases and a 15 % decrease in large flat bases. Continuing in use were cutaway spouts. This period marked the first appearance of the tubular spout family.

Conically-shaped spindle whorls with and without flattened tops appeared side by side. Incised designs on spindle whorls were unilateral, and brush handles made their first appearance. Handles decreased by 4 %.

Liquid decoration exhibited a 24 % over-all decrease — but red-black mottled slips were favored. Also there was a decline in burnishing and smoothing, probably due to the fact that many of the slips in this period were lustrous. The most dramatic indicators for wares was the 23 % increased use of pithos fabrics and a substantial decrease in dining and a straw-tempered wares. The ceramics from this period, it would seem, served in an intensified domestic capacity that included both the storage and serving of foodstuffs.

Bronze Age 4 Middle Bronze. Wheelmade ceramics dominated the ceramic assemblage for the first time in this period at Aphrodisias. Again there appeared to be a change in the use of the area because of the presence of smaller-sized forms and the 47 % increased use of slips. Red slips were in vogue and increased by 27 % and salmon slips also increased by 10 % reaching a high point for their use. Dining wares, returning to a 55 % occurrence plus 13 % fine wares, equalled 68 % — a 32 % increase. Pithos wares decreased by 35 % and straw-tempered wares disappeared completely. The bowl family was dominated by the rolled (thickened) family which increased 10 % over its presence in Bronze Age 4. In the cooking pot class, flaring and everted families changed roles and flaring forms increased 13 % whereas everted forms had an 8 % decrease. Depas cups continued in use. Large flat bases, increased by 15 %, pithoi had a 2 % frequency, crescentic handles were again in the assemblage, and a great variety of spouts occurred — led by trefoil, cutaway, beak, and two quatrefoil forms which made their appearance in this period.

Middle Bronze. There was no marked change between this period and its precedessor. Although handmade wares still occurred, wheelmade wares continued to dominate the assemblage. There was a 3 % decrease in burnish and smoothing, and an 18 % increase in the use of slips. There were no fine wares and there was a 9 % decrease in dining wares. Exterior-thickened and rolled (thickened) rims dominated the bowl class; a slightly larger representation of pithoi; an increase in crescentic lugs; and a 56 % use increase of cutaway spouts which along with the trefoil shape dominated the assemblage. Depas cups disappeared. Finally, there was an increased use of unilaterally incised spindle whorls.

Late Bronze. There were factors in this period that were indices of change, and for this reason a hiatus is suggested in the excavation record. Ware colors were dominated by light red and red colors whereas dark gray

colored fabrics continued to occur in the Middle Bronze period. 74 % of the cores were even in color (whereas of the 22 % of Middle Bronze cores examined, 68 % were black). There was a 24 % increase in wheel-manufactured wares. Exterior-thickened bowl families increased by 17 % and in cooking pots by 53 %. Everted and flaring cooking pots decreased respectively by 18 % and 19 %. Jars and jugs also reflected a change of a 25 % increase in the exterior-thickened family and the pithos class had a 50 % increase in exterior-thickened rims. Absent were cutaway spouts — in this period tubular, trefoil and trough spouts were joined by the appearance of the long beak spout. Podic bases disappeared and large ring and small flat bases dominated the base class. No crescentic handles appeared, but horizontal handles increased by 36 %; the grooved loop handle appeared with a 15 % representation and there was a decrease in plain jar/jug forms of 23 %. The most dramatic indicator was an overall 18 % increase in liquid decoration, slip decreased by 29 % and slip-wash and wash increased by 61 %. Worn-off slips increased 60 %. There was a 62 % increase in gold and silver metallic wash-slip decoration and a 52 % increase in the use of brown slips. In addition there was a strong appearance of red and black-painted decoration. Plastic decoration decreased generally by 8 %, although there was an increase of incised decoration. There is little question that between Middle Bronze and Late Bronze Aphrodisias there was a hiatus in the ceramic development and probably in the stratigraphy as well, for the contrasts between them were significant.

Iron Age. On the basis of the pottery sorted, there were also important changes that took place between the Late Bronze and Iron Ages. In part, this may have been due to the ceramics having been pre-sorted. There was a 16 % drop in wheelmade fine wares. An 18 % decrease in liquid decoration: of that, a decline of 53 % for metallic slip washes but a 15 % increase in red slips. There was a 15 % decrease in dining wares, and a small increase in cooking pots and pithos wares, but together these were not enough reason for the changes that seem to have taken place. Bowl families showed a 16 % increase of curving forms, a 21 % decrease in exteriorthickened families, and 12 % decrease in rolled (thickened) families. In cooking pot, jar/jug, and pithos classes the exterior-thickened forms dominated. There was a 47 % loss in the representation of spouts.

Although no computer analysis was given to the Acropolis trench 6 Lydian deposits, it was clear that these deposits were different in surface treatments and shapes from the ceramics that have been assigned to the Iron Age of Acropolis trench 9. On the basis of the given evidence, there was a gap in both the ceramic and stratigraphic records.

In this volume, emphasis has been placed on the design of a pottery typology for the prehistoric Aphrodisias ceramics. We have also assessed the kinds of plastic and liquid decoration as well as finishing, and have summarized the major type series elements in statistical charts and in drawings for each of the major periods that represent the prehistoric settlement. One of our study goals has been achieved. Within the stratum-by-stratum study, a tentative ceramic chronology for Aphrodisias has been presented. This chronological reconstruction based on the pottery by itself is but one datum for understanding the site.

This discussion has been devoted to the classification and analysis of the content of each period's pottery plus an inward analysis of the development at Aphrodisias. Now we turn to a comparative analysis of miscellaneous ceramics.

310. (L) Incised juglet 247.I; (R) Face urn 253.I Acropolis trench 3; Bronze Age 4 (Photo: M. Ali Döğenci).

MISCELLANEOUS CERAMICS

The objects discussed below complete the repertoire of ceramic finds - that were not encoded in the computer analysis. Most of the ceramics at Aphrodisias are represented in the type series, however, there are a limited number of distinctive pieces, i.e., those that are given special mention, and singled out for the following reasons: a) they are unique, or are complete forms that do not fall within the type series analysis; b) they bear distinguishing characteristics of decoration, manufacture or a combination of these attributes. These groups of artifacts include spindle whorls, disks, loom weights, brush handles, and stamp seals. Their discussion will be followed by a presentation of miscellaneous pieces that I found to be of unusual interest, beginning with Late Chalcolithic ceramics and following chronologically with Bronze Age bowls, jugs and other horizon markers, i.e., depas cups, and finally Late Bronze and Iron Age pieces. This section concludes with a presentation of the pithos burials. For the principal parallels, only sites with similar occupation dates and in the main, those restricted to western Anatolia are considered. These principally include Beycesultan, Troy, and Yortan.



Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	970
Trench																
Pek 1								3							3	1
Pek 2		4	4	7	1	1	5		3	6					31	14
Ac. 1-2																
Ac. 3							4	4	27	5					40	18
Ac. 4								2	5	16					23	10
Ac. 5										19	18	12			49	22
Ac. 6								3						4	7	3
Ac. 7										9	21	21			51	22
Ac. 8													12		12	5
Ac. 9														11	11	5
K-1																
K-2																
Total		4	4	7	1	1	9	12	35	55	39	33	12	15	227	100

TABLE 126. FREQUENCY OF OCCURRENCE FOR SPINDLE WHORLS



0

0

Spindle Whorls

070

At Aphrodisias, spindle whorls are found in every level. In toto 227 were recovered. While most of these (Figures 311, 312-314) are manufactured from clay, cat. no. 1576.1 from Pekmez trench 2 (Figures 311.4, 387.6, 389.43) is carved from bone, and 13 others are made of stone (see Ground Stone p. 239). Table 126 shows the frequency of occurrence for spindle whorls, and Table 128 the frequency for ceramic spindle whorls.

Seven type shapes were identified: 1) squat irregular, 2) biconical, 3) hemispherical, 4) conical, 5) flat, 6) cylindrical, and 7) conical with a flattened top. The incidence of each of these shapes appears in Tables 127, 129. Blegen et al. (1951: Fig. 42) present 31 types that correspond

311. Pekmez trench 2; Spindle whorls, Levels VIIIA-VI.

15

17

1. 1533.4, Level VIIA

24

- 8. 1576.9, Level VIID
- 2. 1506.1, Level VII

15

5

- 9. 1547.2, Level VIIB
- 3. 1598a.7, Level VIIIA
- 10. 1598e3.10, Level VIIIA

99

- 4. 1576.1, Level VIID (bone)
- 11. *1538.1*, Level VIIA (stone) 12. *1580.1*, Level VIID
- 5. 1538c.4, Level VIIA
 6. 1598e3.3a, Level VIIIA
- 13. 1563.1, Level VIIB
- 7. 1598a.II, Level VIIIA

to the Aphrodisias classification. Aphrodisias type 1 = Troy types 1, 29; Aphrodisias type 2 = Troy types 15, 16 (Blegen et al. 1951:15), state that in Troy III, these are the most commonly represented types); Aphrodisias type 3 = Troy type 4; Aphrodisias type 4 = Troy type 12; Aphrodisias type 5 = Troy types 3, 13, 18, 19, 20; Aphrodisias type 6 = Troy types 6, 7; and Aphrodisias type 7 = Troy types 9-12, 30. Thus, 17 of the Troy types have been combined into seven broad spectrum Aphrodisias types.

Spindle whorls at our site are introduced in the Late Chalcolithic 1 period (Pekmez trench 2), and continue through to the Iron Age. The quantity and variety of whorls indicates that spinning was a regular activity. At Troy, Blegen reports three times more the number recovered there in comparison to those unearthed at Aphrodisias; 609 whorls were found in Levels I-V inclusive (Blegen et al. 1951:304, Table 26). At Aphrodisias there is an approximate threefold increase in their number from Bronze Age 3 to Bronze Age 4 and they are most commonly found in Bronze Age-4-Middle Bronze periods, with lesser numbers appearing in the Late Bronze and Iron Age periods. In the earlier or pre-Bronze Age 3

periods at Aphrodisias, the majority of whorls are thinner in shape than their counterparts in later periods. The same progression holds true for Kusura (Lamb 1937:253) and Mersin (Garstang 1953:52). The squat irregular whorl seems to have been the earliest and to have the longest life span at Aphrodisias, beginning in Late Chalcolithic 1 and continuing through to the Iron Age (with a gap in Bronze Age 1). At Beycesultan similar shapes are found in Late Chalcolithic levels (Lloyd and Mellaart 1962: Fig. F.2.16-18, Level XII).

The most popular shape is the biconical (Type 2) which first appears at Aphrodisias in Late Chalcolithic 2, after which it fades and then reappears in the Bronze Age 2 period. It is also popular at Beycesultan (Lloyd and Mellaart 1962:277), making its first appearance there in the E.B. 1. The conical shape, Type 4, first appearing in Late Chalcolithic 1 and absent since Late Chalcolithic 3, reappears and holds its own in popularity along side Type 7, the conical form with a flattened top in Bronze Age 4. This form occurs at Beycesultan in the E.B. 3 period (Lloyd and Mellaart 1962:277), which fits in well with its incidence at Aphrodisias in Bronze Age 4 — both periods belonging to the later part of the Anatolian EB IIIA, and the beginning of EB IIIB.

Generally these artifacts are manufactured from an unrefined clay. The Late Chalcolithic whorls are particularly coarse with large pebble inclusions of mica schist and large grit. The condition is often poor, but improves when the whorl is protected with a slip. The majority whorls at Aphrodisias were found to have been smokeblackened on one surface. It is not known if this was the result of primary or secondary firing.

74 examples are plain or undecorated; 138 examples are decorated with plastic decoration, liquid decoration or a combination of the two. Table 129 shows their frequency of occurrence. Plastic decoration is effected either by incision with a sharp instrument or punching with a round-nosed tool. The motifs are illustrated in Figures 312-313. They are composed of groups of parallel radiating lines, single lines, zigzags, dots, arcs, zoned chevrons, and single or multiple lines around the point of greatest diameter. No decoration appears on any of the early whorls, until Level VIIA of the Late Chalcolithic 3 period when one crudely-shaped example with rough incisions was recovered (cat. no. 1553.1, Figure 397.20). It is worth noting that no ornamented spindle whorls have been dated earlier than Late Chalcolithic 3 at any other site in Anatolia.

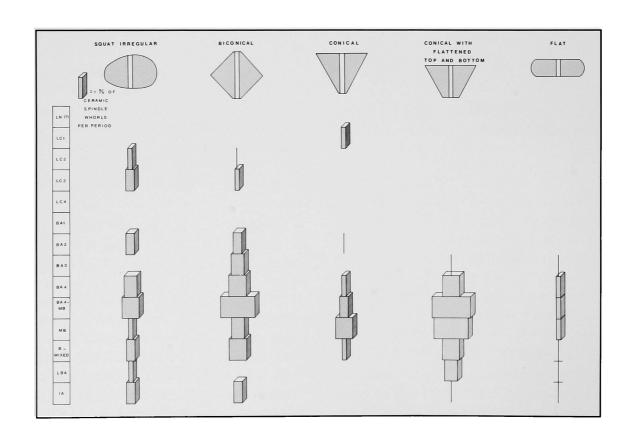


TABLE 127. GRAPHED FREQUENCIES OF SPINDLE WHORL SHAPES

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	970
Trench																
Pek 1								3	.,	## W C.					3	1
Pek 2 Ac. 1-2		4	4	6	1	1	5		3	6					30	14
Ac. 3							4	3	21	5					33	15
Ac. 4								2	5	14					21	10
Ac. 5										19	18	12			49	23
Ac. 6								3						2	5	2
Ac. 7										9	21	19			49	23
Ac. 8													12		12	6
Ac. 9														11	11	5
K-1																
K-2													-			
Total		4	4	6	1	1	9	11	29	53	39	31	12	13	213	99
070		2	2	3	0	0	4	5	14	25	18	15	6	6		100

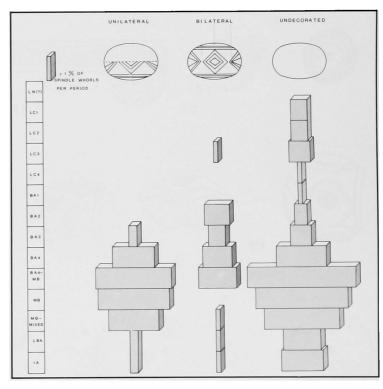
TABLE 128. FREQUENCY OF OCCURRENCE FOR CERAMIC SPINDLE WHORLS

Liquid decoration is comprised of slip and/or whitefilled incisions. Late Chalcolithic and Bronze Age 1 and 2 whorls seem to be unslipped, or if they were, it has worn away. For this reason, the unslipped category is designated « unknown ». The results of Table 129 suggest that decorated spindle whorls outnumber plain examples in all periods at Aphrodisias with the exception of the Late Chalcolithic deposits. This is a pattern, for at Beycesultan (Lloyd and Mellaart 1962:277), undecorated whorls are also in the minority. The placement of the design is important. Biconical and conical whorls with a flattened top are types which are most often decorated. The designs appear unilaterally (on one side) or bilaterally (on both sides). These two methods of decoration are found in Bronze Age 2 deposits where bilateral design occurs with 25 % greater frequency than unilateral design. At E.B. 1 Beycesultan bilateral design is seen (Lloyd and Mellaart 1962:277). At Mersin, Garstang (1953:52) did not distinguish between design placement, but did state that incised designs are seen there also in the Early Bronze 1 period.

At Aphrodisias, unilateral design becomes more popular than bilateral design in Bronze Age 4. This may be due to the advent of the new conical shape with a flattened top and with a depression around the central hole, Type 7 (Figure 312.14). Incision for this whorl type is reserved for this area around the hole. The dominance of unilateral design increases tenfold in the Middle Bronze deposits.

We have seen that whorl types at Beycesultan and Aphrodisias are roughly synchronous. Incised design appears at Beycesultan in E.B. 1 and at Aphrodisias as

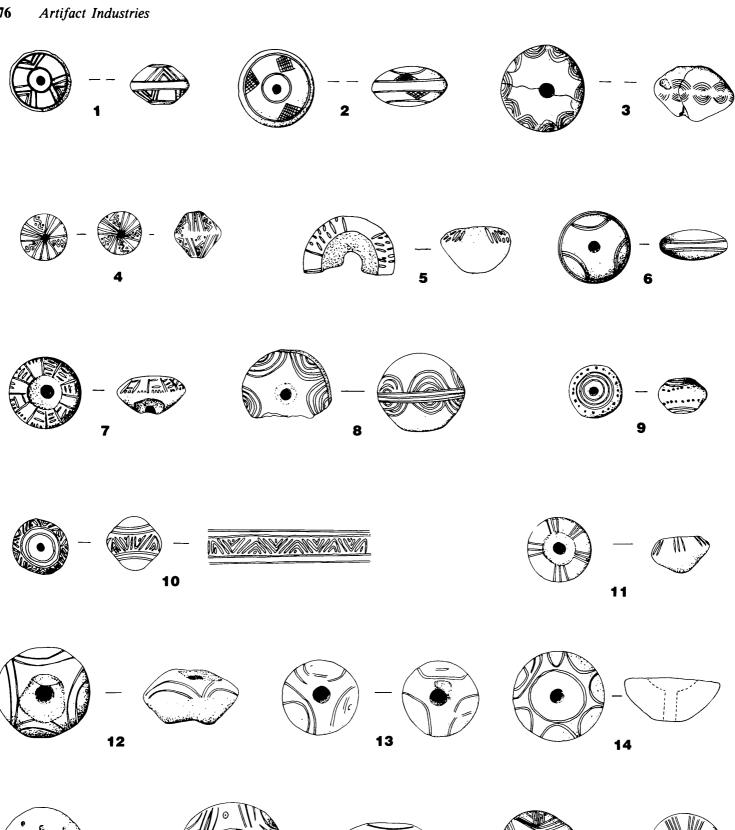
TABLE 129. SPINDLE WHORL DECORATION: UNILATERAL AND BILATERAL INCISION: GRAPHED FREQUENCIES



early as Late Chalcolithic 3. The conical shape with the flattened top arrives at both sites at about the same time.

The single most important period, Bronze Age 4 (or Anatolian EB IIIA-B) is a hallmark for spindle whorls at Aphrodisias. We note four important developments. There is a threefold increase in their incidence, two new shapes are introduced, unilateral design dominates bilateral design, and the proportion of slipped to unslipped spindle whorls increases.

15



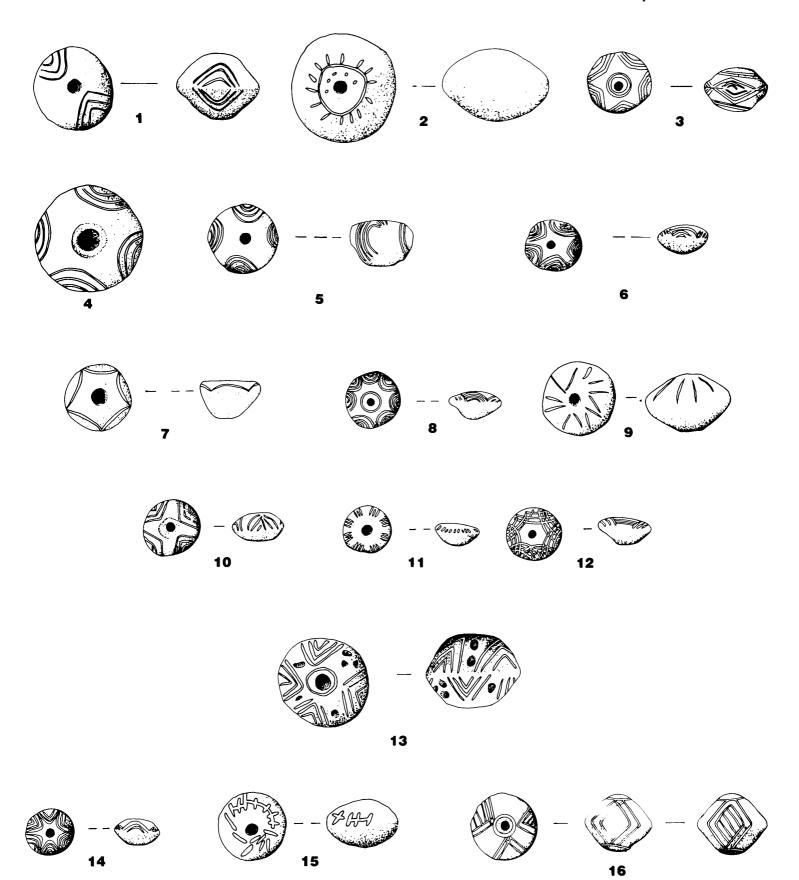
312. Incised Spindle Whorls: (Numbers 1 = BA2; 2-4 = BA3; 5-13 = BA4; 14-17 = BA4-MB).

10 cm.

17

16

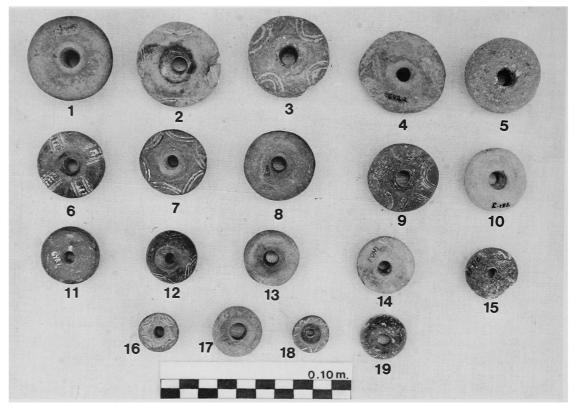
11. Ac.3 9A.1 Acropolis 3 6. 343.2 Acropolis 4 1. 289.1 Acropolis 3 16. 233.3 Acropolis 3 12. Ac.3 7D.1 Acropolis 3 7. 210.3 Acropolis 3 2. 278.1 Acropolis 3 17. 513.1 Acropolis 5 8. 210.1 Acropolis 3 13. Ac.3 7C.1 Acropolis 3 3. 268.1 Acropolis 3 9. 228.1 Acropolis 3 14. 233.1 Acropolis 3 4. 1401.18 Pekmez 1 15. 513.6 Acropolis 5 10. 219.2 Acropolis 3 5. 223.2 Acropolis 3



313. Incised Spindle Whorls: (Numbers 1-7 = BA4-MB; 8-13 = MB; 14-17 = MB-Mixed; 18-I.A.).

10 cm.

5. 529.1 Acropolis 5 9. 485.2 Acropolis 5 1. 528.I Acropolis 5 13. 478.1 Acropolis 5 6. 507.3 Acropolis 5 10. 492.1 Acropolis 5 2. 513.2 Acropolis 5 14. 456.1 Acropolis 5 3. 323.15 Acropolis 4 7. 317.3 Acropolis 4 11. 493.2 Acropolis 5 15. 483.1 Acropolis 5 4. 513.5 Acropolis 5 8. 501.3 Acropolis 5 12. 501.2 Acropolis 5 16. 3128C.1 Acropolis 9



314. Acropolis trench 7; Spindle whorls of the Bronze Age.

1. 627.1 Complex B	5. 739.1 Complex D	9. 715.1 Complex B'	13. 702.5 Complex D	17. 766.2 Complex Ia
2. 703.10 Complex D	6. 712.5 Complex D	10. 751.3 Complex D	14. 640.1 Complex B'	18. 781.2 Complex Ib
3. 712.4 Complex D	7. 753.2 Complex Ia	11. 648.1 Complex B	15. 713.41 Complex D	19. 657.1 Mixed deposit
4. 642.2 Complex B'	8. 756.1 Complex D	12. 766.6 Complex Ia	16. 749.2 Complex Ia/Ib	(stone)

529.1 Ac.5

313.5

TABLE	130.	PARA	LLELS	OF	APHRODISIAS	SPINDLE
•	WHORL	LS TO	TROY	AND	BEYCESULTAN .	+*

			323.15 Ac.4	313.3
•	s Drawing eriod / Figure	Troy/Beycesultan Reference; Level	513.6 Ac.5	312.15
Bronze Age 4			513.1 Ac.5	312.17
223.2 Ac.3	312.5	Blegen <i>et al.</i> 1950:367, no. 35-230; IId-IIg		
		Lloyd and Mellaart 1962; Fig. F.6 EB2-EB3; Level VIII	233.1 Ac.3	312.14
210.3 Ac.3	312.7	Schliemann 1881:418 « very	MIDDLE BRONZE	ı
		unique » no. 1892 10M III	492.1 Ac.5	313.10
9A.1 Ac.3	312.11	Blegen et al. 1951:237, no.		
		35.145 ; V	501.3+ Ac.5	313.18
		Schliemann 1881:1977, III;		
		Lloyd and Mellaart 1962: F.6. Level VI; EB2-EB3	493.2 Ac.5	313.11
210.1 Ac.3	312.?	Blegen et al. 1951:152, no. 33-105;	485.2 Ac.5	313.9
210.1 110.5	y. 2	IV	403.2 AC.3	313.7
228.1 Ac.3	312.9	Blegen et al. 1950:366, no. 35-29;		
		IId-IIg		
		(Broken line in center ring)	Middle Bronze	-MIXED
343.2 Ac.4	312.6	Blegen et al. 1951:57, no. 34-239;	317.3 Ac.4	313.7
		III	456.1 Ac.5	313.14
Bronze Age 4-	MIDDLE BRONZE			
528.I Ac.5	313.1	Blegen et al. 1950:366, no. 36-12;	478.1 Ac.5	313.13
		IId-IIg	483.1 Ac.5	313.15
		Schliemann 1881: no. 1976-7M; Troy III		
233.3 Ac.3	312.16	Blegen et al. 1950:366, no. 3-5-	+ Whorls that a	-
		299 ; IId-IIg	* In large part,	•
507.3 ⁺ Ac.5	313.6	Blegen <i>et al.</i> 1951:152, no. 33-105; IV	B. Kersh (198 of Classics.	3) for an Hono

¹ Ac.5 313.15 Blegen et al. 1951:58, no. 33-162; III

Blegen et al. 1951:58, no. 33-200;

Blegen et al. 1951:153, no. 37-183;

Blegen et al. 1951:57, no. 34-305;

Blegen et al. 1951:58, no. 34-311;

Blegen et al. 1951:152, no. 36-

Lloyd and Mellaart 1962: Fig. F.6.

Schliemann 1881: no. 1848 8M; III (more center rings at Troy)

Blegen et al. 1950:367, no. 35-

Blegen et al. 1951:57, no. 34-243;

Blegen et al. 1951:153, no. 37-8;

Blegen et al. 1951:237, no. 34-142 Lloyd and Mellaart 1962: Fig. F.6

Blegen et al. 1951:153, no. 37-8;

1951:237, no. 35-145; V

EB2-EB3; Level IX

EB2-EB3, Level VIII

IV

334; IV

516; IId-IIg

large part, the analysis of this data was contributed by Sarah Anne Kersh (1983) for an Honors Thesis, Brown University, Department of Classics.

Perforated ceramic disks may also have served as spindle whorls. The supposition that spindle whorls were used as offerings to a tutelary deity is interesting but one that cannot be confirmed by their find spots in the prehistoric Aphrodisias excavations.

Loom Weights

One-hundred-ten loom weights were catalogued. The rate of incidence is at its high point during the period of the Middle Bronze Age. Their distribution by period is found in Table 131. They first appear in the Late Chalcolithic 3 period and with the exception of Bronze Age 1 and Middle Bronze Age, they are present in all other periods. Comparative numbers of these artifacts are found at Troy I-V where 96+ loom weights were registered (Blegen 1951:304, Table 26).

With the exception of cat. no. 3192.1 (Figures 487.9, 495.1), none of these bear decoration; they are plain. Most representative of this tool class are four shapes plus a miscellaneous shape class — they include globular, triangular, crescentic and rectangular. Their distribution by periods and shape is shown in Table 132.

Globular shapes are the most popular, representing 45 % of the class. These weights are coarse ware objects (the fabric is densely packed with organic and inorganic inclusions). They are the most friable of the shapes for they are unbaked or only partially fired, and their condition is poor. They are apt to crumble or exfoliate when handled. This is typical of those that were unearthed throughout the deposits. They are the earliest, appearing in Late Chalcolithic 3 — after a gap, reappearing in Bronze Age 3 and, with the exception of the Middle Bronze period, continuing down through the Iron Age. Troy has its parallels for this shape (Schliemann 1881:559, no. 1202, and Blegen et al. 1951:150, nos. 36-388, 37-285, 36-389, 32-483).

Crescentic loom weights are the second most representative shape type, accounting for 37% of this object class. Its material is heavier than the globular type, they are brick-red in color and pierced at each end. They have been well-fired from a leaner clay. Such weights first appear in Bronze Age 1. Then as a class they disappear, only to be seen again in the Bronze Age 4-Middle Bronze contexts where they make a strong showing, and then continue right through the Iron Age (with the exception of the Middle Bronze Age).



315. Loom weights: Acropolis trench 4 Complex Sub I, Bronze Age 4 Middle Bronze.

1. 323.7 2. 318.1 3. 323.11 4. 324.3 5. 323.18 6. 323.9 7. 324.2

TABLE 131. FREQUENCY OF OCCURRENCE FOR LOOM WEIGHTS

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	%
Trench																
Pek 1 Pek 2 Ac. 1-2 Ac. 3 Ac. 4 Ac. 5 Ac. 6 Ac. 7 Ac. 8 Ac. 9 K-1 K-2				1		1	1	1 1 1	1 11 3	1 8 21 5		1 2 11 4	16	1	2 4 1 20 27 16 1 11 16 12	2 4 .9 18 24 15 .9 10 15
Total	-			1 .9		1 .9	1 .9	3 3	15 14	42 38		18 16	16 15	13 12	110	100.7

TABLE 132. FREQUENCY OF OCCURRENCE FOR LOOM WEIGHTS — BY SHAPE

Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	0%
Trench																
Globular				1				3	13	23		8		1	49	45
Triangular										3		4	2	2	11	10
Crescentic						1				10		6	14	10	41	37
Rectangular	r						1		1	4		1			7	6
Other										1		1			2	2
Total				1		1	1	3	14	41		20	16	13	110	
970				.9		.9	.9	3	13	37		18	15	12		100.7

It seems that once this type of weight is established, it became not only prolific in numbers but also widespread in acceptance and enjoyed a useful longevity. In the analysis of this form, W. Lamb even suggests that this crescentic shape resembles modern Anatolian loom weights (Lamb 1937:256). Since these objects were standardized and became ubiquitous, the usefulness of comparisons for dating is doubtful. At Kusura they were first found in Period C where 30 were unearthed lying close together in a single deposit (Lamb 1937: Fig. 19.5). At Troy, they were first reported in Phase II deposits (Blegen et al. 1950: Fig. 369, top right, lowest row), and found in connection with pear-shaped loom weights (Ibid. 338). Blegen et al. discuss the earliest loomweights associated with the deposits of Troy I, but they do not specify if the crescent-shaped weights are included. At Aphrodisias any possible pear-shaped weights were too fragmented to bear discussion. No crescentic weights are represented or recorded at Beycesultan.

An interesting representative of this shape class is cat. no. 3192.1 (Figures 487.9, 495.1), mentioned above as being a decorated exception. (Also see Marchese 1976: Fig. 23.) This weight bears a fragmented stamped double lozenge impression.

Triangular and rectangular loom weights together represent only 16 % of the class. Of the triangular weights cat. no. 639.1 (Figures 482.11, 484.11) is the best example. This particular weight finds a parallel in Troy IV contexts (Blegen et al. 1950, no. 37-285). Cat. no. 2039.1 (Figure 490.34) is a model for the so-called rectangularly shaped types. A similar rectangular double-holed loom weight appeared in Troy III contexts (Schliemann 1881:411, no. 479).

Two artifacts that we have classified as ceramic weights were unearthed in the Pekmez trench 2 deposits. In shape each is different from the other — therefore their functions were probably different. Both of these weights are manufactured from coarse wares mixed with



316. Ceramic weight 1573.2 Pekmez trench 2; Level VIIC.

husks and pebble-sized inclusions that are found both pounded or whole in the ware-fabric. The larger weight, cat. no. 1573.2 (Figure 316) was discovered in unit 1573 in Level VIIC, Late Chalcolithic 2. It is of coarser ware than the smaller weight discussed below. It has a large horizontal tubular hole located just above its base. It is not clear how this perforation was used; it does not appear as if it were for suspension although that cannot be ruled out.

The smaller weight, cat. no. 1533.5 (Figure 397.6) appeared in Level VIIA of Late Chalcolithic 3. It is categorized as a loom weight although it may have served in another capacity. It is perforated and fragmented near its top where thongs had been attached for its connection to the loom.

The incidence of loom weights and spindle whorls are our only indication that spinning wool into yarn or thread was practiced at the site. Yet we noted with interest that both popular classes — globular and crescentic — disappear in the Middle Bronze Age. Perhaps future research at Aphrodisias will turn up a plausible explanation.

Disks

The term « disks » refers to more or less round pieces of pottery, ca. 0.035 to 0.07 m in diameter, which had almost always been chipped from previously fired pottery. These fragments are generally flat disk-shaped objects (Figure 394.13) and some have single perforations.

525 disks were recovered from the excavated areas. 59 % were unperforated. In periods Bronze Age 4-Middle Bronze they appear to reach their peak representing 20 % of the sherd corpus collected for those levels.

Often these reused fragments were made of coarse ware, but they could also be found to be slipped and burnished. Most probably they were used as jar covers or lids, or the smaller version (Figure 397.30) may have served as gaming pieces.

Contemporary disks have been found at many sites but few of them have been published. Blegen *et al.* (1951:304, Table 36) note the incidence rate for these objects is 19 for the first five levels at Troy. Similar pieces appear at Kum Tepe (Sperling 1976:323, no. K-63, K-64) and at Saliagos (Evans and Renfrew 1968: Fig. 84-85). Disks enjoy a wide distribution in the early pottery of both western Anatolia and the eastern Aegean, and it seems that both the ware fabric and shapes are similar. Schliemann (1881:231), found many of these in Troy I contexts and suggested that perforated types may have served as spindle whorls.

Pierced Sherd Pendants

One further group of note are two pierced sherds that may have served as pendants or possible weights. (The other pierced spherical disk shapes have already been discussed.) These are spherical or ovoid in shape. One is simply a reused sherd that in order to be suspended, has been bilaterally pierced after firing. This earlier one, which occurs in Level VIID Late Chalcolithic 2, cat. no. 1576.10 (Figures 387.10, 389.48), is a spherical pendant. The second pendant, curiously shaped, appears to have been intentionally manufactured — (cat. no. 1563b.3, Figure 390.15) — it was pierced before firing. It was recovered in the Level VIIC assemblage. The original shape was probably triangular, but unfortunately its form is too fragmented to reconstruct accurately.

TABLE 133. FREQUENCY OF OCCURRENCE FOR DISKS BY PERIOD

Period :	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	070
Total %	1	34 6	49 9	47 9	18 3		40 8					60 11	25 5	17 3	525	98

TABLE 134. FREQUENCY OF OCCURRENCE	FOR NON-PERFORATED DISKS
------------------------------------	--------------------------

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	МВ	MB- Mixed	LB	IA	TOTAL	970
Total	1	22 7	44 14	40 13	15 5	6 2		22 7		61 20	20 7	5 2	9	4 1	307	100

TABLE 135. FREQUENCY OF OCCURRENCE FOR PERFORATED DISKS

Period	LN(?) LC	C1 L	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4 MB	MB	MB- Mixed	LB	IA	TOTAL	9%
Total %	1:	2 6	5 2	7			15 7			14 6		55 25	16 7	13 6	218	98



317. Brush handles, Acropolis mixed trenches and periods.

- 1. 323.19 Acropolis trench 4, Complex Sub I (BA4-MB)
- 2. 228.2 Acropolis trench 3, Complex II, Room 2 (BA4)
- 3. 628.6 Acropolis trench 7, Complex B' Middle Bronze-Mixed
- 4. 323.2 Acropolis trench 4, Complex III-?II (BA4)

Brush Handles

The Trojan brush handles closely resemble those of Aphrodisias (Schliemann 1881:414, nos. 488, 489). These are dated by Blegen to Troy II (Blegen *et al.* 1950: Fig. 369 (a)ff), and by both Schliemann (1881:414) and Blegen to Troy III contexts (Blegen *et al.* 1951: Fig. 56, no. 33-183). Blegen also presents them along with Troy IV artifacts (*Ibid.* 1951: Fig. 56-20; 33-183; 150, nos. 37-210, 37-213 and 37-163). He reports 12 in total at Troy: six in Troy II; one in Troy III; and five in Troy IV (1951:304, Table 26).

This class of objects does not appear to have been fired, but if so, was probably hardened by secondary accidental firing. Generally the fabric is soft, friable and crumbly. The catalogue numbers, trench and period listings are presented below.

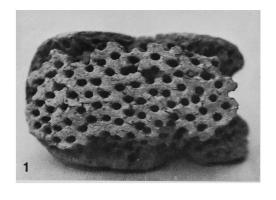
- 1. Acropolis Trench 3 (Bronze Age 4): *Cat. no. 228.2*, Figures 317.2, 318.1, 430.12.
- 2. Acropolis Trench 4 (Bronze Age 4-Middle Bronze): *Cat. no. 323.2*, Figure 440.24.
 - 3. Cat. no. 323.19, Figures 317.1, 440.23, 449.5.
- 4. Acropolis Trench 7 (Middle Bronze-Mixed): Cat. no. 628.6, Figures 317.3, 485.40.

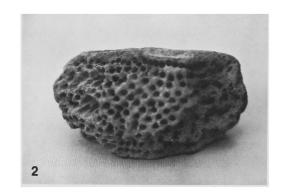
At prehistoric Aphrodisias, four brush handles were recovered. None appear before the Bronze Age 4 period; they then continue through Middle Bronze Mixed contexts. Based on the evidence at hand, brush handles appear later at Aphrodisias than they do at Troy. This time lapse could be the result of either a discrepancy between the chronologies or the time necessary for ideas to travel.

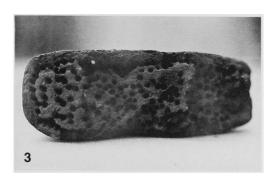
Stamp Seals

Three ceramic stamp seals are found at Aphrodisias. Below is a listing of their catalogue numbers, trench and period attributions.

Cat. no.	Trench	Illustrations	Period
317.2	Ac. 4	449.6, 622.19	Bronze Age 4- Middle Bronze
288.1	Ac. 3	420.13	Bronze Age 2
334.1	Ac. 4	428.66, 437.19	Bronze Age 4- Middle Bronze

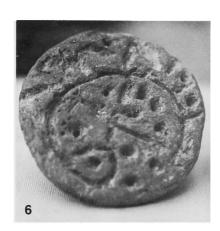












318. Brush Handles and Stamp Seals, Acropolis trenches 3-4.

- Brush handle detail 228.2 Acropolis trench 3, Complexes II - III, Bronze Age 4
- Brush handle detail 323.2 Acropolis trench 4, Complexes II - III, Bronze Age 4
- 3. Brush handle (detail) 323.19 Acropolis trench 4, Complexes II III, Bronze Age 4
- 4. Seal 334.1 Acropolis trench 4, Complexes II III, Bronze Age 4
- 5. Seal 288.1 Acropolis trench 3, Complexes VII VIII, Bronze Age 2
- Seal 317.2 Acropolis trench 4, Complexes I E, Bronze Age 4 Middle Bronze

In addition, a loom weight/possible seal and a sealimpressed pithos fragment were found. These are briefly discussed below, and appear above in Figure 318.

The earliest stamp seal, cat. no. 288.1, appears in Acropolis trench 3 of Bronze Age 2 contexts. It is conically shaped, and its rounded base is deeply incised and punched with a curious design that has the intriguing appearance of being a code, or a personal emblem. Although Schliemann's Trojan seals have rounded bases, there is little similarity in design.

The two other seals that were recovered from Acropolis trench 4 are both fragmented. The earliest, cat. no. 334.1, is from the Bronze Age 4 period. Its base is curvilinear and incised with lines between rows of punched dots. It has a stalk-like head with a pierced hole for hanging, perhaps around the owner's neck. Cat. no. 317.2 from Bronze Age 4-Middle Bronze Age is an irregular triangular shape with a round base. It bears a lightly

incised six-branched design (perhaps a tree) with circular incisions in the center of each of the curved arms. Dotted incisions effected with a hollowed out tool, perhaps a straw, border the main motif. Although this design may have been strictly decorative, it is possible that a symbolic meaning was intended (i.e., tree of life).

In Acropolis trench 5, cat. no. 469.1 was recovered in mixed contexts. It may be only a discarded loom weight, as was previously mentioned. The squared base is divided into four irregular squares by central incisions running perpendicular to one another. Within each of the four squares is a circular design which has been impressed with a stalk-like instrument in its center.

In Acropolis trench 9, was found the seal-impressed pithos sherd, *cat. no. 3197*. It has been dated to the Iron Age. This object is not illustrated in the Figures but it has been published by Marchese (1976:399, Fig. 9).

384 Artifact Industries

Schliemann (1881:415, no. 492-498) shows eight seals belonging to Troy III contexts, but Blegen et al. report only one seal-impressed sherd and no actual seals recovered from their excavations. Seals with stalk-like heads somewhat resembling the one found at Aphrodisias, were found at Beycesultan in Levels XVIII and Level XIV (Lloyd and Mellaart 1962: Fig. F.4.8 and F.4.7 respectively); also see those from Karataş (Mellink 1967: Plate 84, Figs. 54-55; 1970: Plate 58, Fig. 23a, b). In the study of these objects, Lloyd and Mellaart (1962:275) write that the earlier seal is almost square in shape and the later is lozenge-shaped; and

that parallels are difficult to locate. A small collection of square-shaped seals was also found by Mellink (1970: Fig. 23) at Karataş-Semayük and by Lamb in Kusura Period B (1936:30, Fig. 12, no. 17-21). Differences exist between these and the Aphrodisias seals. This is one of the most exciting object classes in prehistoric Anatolia — and one of the least understood. It is a class of extreme importance — they may be personal signatures. Unfortunately, it is an artifact we know nothing about. To solve the problems posed by their design, more attention has to be given to a comparative analysis of seal shapes and iconography.

TABLE 136. FREQUENCY OF OCCURRENCE FOR SLING PELLETS

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	970
Trench				i												
Pek 1																
Pek 2		4	17					4		1					26	13
Ac. 1-2																
Ac. 3								1	1						2	1
Ac. 4																
Ac. 5										51					51	25
Ac. 6											•	•			4	•
Ac. 7											2	2			4	2
Ac. 8																
Ac. 9							34	,	17						54	27
K-1							34 30	3 28	17 7						65	27 32
K-2															63	32
Total		4	17				64	36	25	52	2	2			202	
970		2	8				32	18	12	26	1	1				100

TABLE 137. FREQUENCY OF OCCURRENCE FOR ENIGMATIC OBJECTS

Period:	LN(?)	LC1	LC2	LC3	LC4	BA1	BA2	BA3	BA4	BA4- MB	MB	MB- Mixed	LB	IA	TOTAL	%
Trench																
Pek 1																
Pek 2		8	2		1			5							16	18
Ac. 1-2																
Ac. 3																
Ac. 4																
Ac. 5										18	2				20	23
Ac. 6																
Ac. 7																
Ac. 8														İ		
Ac. 9							-		-							
K-1							5	1	7						13	15
K-2							27	7	4						38	44
Total		8	2		1		32	13	11	18	2				87	
970		8 9	2		1		37	15	13	21	2					100

Air-dried Clay Objects - (?) Sling Pellets

A particular group of 202 air-dried or accidently fired clay balls that I tentatively call « sling pellets » were found in pottery collection containers. Sling pellets are either spherical or ovoid in shape. Their surfaces are rounded and they range in size from an average of 0.016 to 0.020 m. They weigh on the average of 2-5 grams. It is not clear if these objects all had stone inclusions; but often a small stone was found to have been enveloped in a layer of clay. The majority are preserved in an undamaged condition. Some of the Aphrodisias pellets are found to have been fired, but they may have been accidentally fired if adjacent to a heat source. X-ray analysis would aid in the determination of their manufacture.

Both spherical and ovoid shapes appear together for the first time in the site deposits of Pekmez trench 2 Level VIIIA as early as Late Chalcolithic 1. No information can be offered for their morphological development. Table 136 gives their frequency of occurrence and indicates that oddly enough few were retrieved from the Middle Bronze Age to the Late Bronze Age periods. They achieve their high point in the Bronze Age 4-Middle Bronze periods of Kuşkalesi trenches 1 and 2 and Pekmez trench 1. Their scarcity in other periods may have been due to the fact that during the original excavation they were discarded, or being unbaked, were dissolved in the pottery washing procedure. Therefore, we do not think the Frequency of Occurrence Table is indicative of their true presence at the site. (The highest frequency of sling pellets was found in the collection containers containing objects that had not been sorted, washed or catalogued. Unfortunately, the in situ positions of these artifacts cannot be reconstructed. We offer the evidence of their presence, but have to defer a thorough evaluation.)

This is not the first time these objects have been recognized in Late Chalcolithic and Bronze Age contexts. They have been published by the excavators of Tülintepe (G. Arsebük and M. Korfman 1976:163-172). Arsebük and Korfman provide a list of the following sites where they have been found: Tepecik (*Ibid.*, no. 2, 163); Alaca Hüyük (Arik 1937: pl. 141, AI 924); Alisar Höyük (von der Osten 1937:269, Fig. 271); Beycesultan (Lloyd and Mellaart 1962:21); Can Hasan (French 1965:89; *idem* 1966:115); Fikirtepe (Arne 1922/1923: 124, 271, Fig. 66, 69); Karaağaçtepe (Demangel 1926: Fig. 34, 35, 52); Carchemish (Woolley 1934:158); Mersin (Garstang 1953: 109, 133, 135, 172); Pulur (Koşay 1964: 94, 96, pl. 62); and at Tabara al Akrad (Hood 1951: 147, Fig. 12.22).

From classical writers it is known that for a short distance shot, one should use a short sling (*Diod.*, 5, 18; *Strabo* 3.5.1.; *Flor.* 1.8), with a larger and heavier pellet, and for a greater distance, a longer sling and a smaller

pellet. Pellet and sling have to fit together for an accurate shot (*Livy* 38, 19.6). A range of up to 500 m is possible for a good slinger. The dimensions of these pellets give us a rough hint that the width of the sling cradle would be approximately the same diameter as the pellet — its length would depend on the distance to be covered.

Enigmatic Objects

The enigmatic objects of either stone or air-dried clay cannot be placed in definite functional relationship with any of the other objects. They do not resemble any particular form, and all of them seem to be of quite different shapes and sizes. Eighty-seven appeared in the prehistoric deposits at Aphrodisias, and the incidence of their occurrence can be found in Table 137. Two common factors are: they are natural formations; and all their surfaces are heavily encrusted with a buff-tan deposit similar to the spotty encrustation found on ground stone objects. There is reason to suppose that some of them are stone, and they served a specific function, but what that was remains obscure.

COMMENTS ON LATE CHALCOLITHIC CERAMICS



319. Pinch pots, Pekmez trench 2, Late Chalcolithic.

1. 1576.I Level VIID; 2. 1573.I Level VIIC; 3. 1576.II Level VIID.

Pinch Cups

Eight irregular crude pinch pots were recovered in Late Chalcolithic contexts of the Pekmez trench 2 excavation. A photograph of these is shown by Kadish (1971: P. 26, Fig. 13). These have irregular plain surfaces and are poorly finished. In contrast to the usual mode of coil construction, all of these cups were manufactured by « pinching ». After the clay had been formed into a ball, it was pinched or squeezed into shape with the fingers of one hand while it was turned in the palm of the other — the outer pot edge against the heel of the hand. Finger impressions were roughly erased by a cursory smoothing process, but the irregularity of the vessel wall, in most cases, remained.

The ware-fabric is coarser than the usual plain wares, with large pebble and organic inclusions. All of these vessels have black cores. Two of these that are completely preserved (cat. nos. 1547.I, 1566c.I, Figure 394.13), have crude vertical loop handles attached from the rim to just above the turn at the base. (Cat. no. 1598a.I, Figure 385.3, also has a fragmented loop handle.) Three of these found in Level VII of Late Chalcolithic 4 are shown on Figure 319. These coarse ware cups are part of the ceramic assemblage of Late Chalcolithic levels at other sites.



320. White painted incurving bowl fragment 1597.I, Pekmez trench 2, Level VIIIA.

Incurving Bowl

One unusually distinctive incurving bowl fragment, cat. no. 1597.I (Figure 320) was found in Pekmez trench 2 Level VIIIA Late Chalcolithic 1 deposits. It is manufactured from a very dark gray ware-fabric with a black even core characteristic of the Late Chalcolithic 1. The interior-exterior is black-slipped, and the body bears a white-painted decoration with a quadruple-lined, intersecting triangle motif on the body. Five white horizontal bands encircle the rim. The exterior is burnished to a high glossy luster. Just under the rim the body is scored twice — one perforation is complete, the other has been left incomplete.

This rare bowl has no direct parallels — but the ware-fabric, manufacture, and decoration may be easily paralleled to Beycesultan in the Late Chalcolithic deposits (Lloyd and Mellaart 1962:79). Decoration of cross-hatched triangles is commonly found at Beycesultan (see Joukowsky 1982:434-36, Table 36 for parallels of white-painted motifs), but the quadruple-lined, cross-hatched triangles are not common).

Jug with one Handle

This rimless, large, sack-bodied jug, cat. no. 1598f.I of Pekmez trench 2 of the Late Chalcolithic 1 (Figure 385.24), was the single largest domestic ceramic found in Late Chalcolithic deposits that could be reconstructed with some accuracy. Its gray ware-fabric was classed as both plain medium ware, (PM), and plain thick ware (CH), before it was reconstructed — for at the base the inclusions were significantly more prolific and densely packed in the fabric than they were in the upper and thinner half of this vessel. The exterior bears a mottled brown-black burnished slip. One loop handle is attached from just under the rim edge to the upper-body shoulder. Although the rim is missing, it is assumed to be flared in shape.

No direct parallels can be found for this particular jug, but neither the coloration nor the ware are uncommon. The Aphrodisias example is more globular than vessels that would have served in a similar capacity at Beycesultan (Lloyd and Mellaart 1962: Fig. P.5.2, 14 of Level XXXIV).

Hemispherical Bowl

Pekmez trench 2, cat. no. 1598e3.I (Figure 384.26) is a round-based bowl of thick ware-fabric which has a flared rim grooved on the exterior. It is fired to a black color and is covered on the interior-exterior with a black slip burnished to a low luster. This form does not find a direct parallel at Beycesultan, but its rim shape is not unlike a similar rim found in Level XXXVIII dated to L.Ch.1 (Lloyd and Mellaart 1962: Fig. P.1.9). Other rims in this deposit, the earliest of the levels at Beycesultan, are also manufactured of a thicker ware-fabric (Ibid. Fig. P.1.10-11, 30-32) than is usual in later Late Chalcolithic levels — however, the Beycesultan examples are larger in diameter than this unique bowl from Aphrodisias. The thick, rounded base is also found at Beycesultan associated with a similar hemispherical form (Ibid. Fig. P.1.4).

Knobbed Projection

Unique to Aphrodisias is this shape form. Cat. no. 1598d.3 (Figures 379.24, 385.35) of Pekmez trench 2 may have served as a stopper or lid. It resembles a mushroom with an irregular cap and a small conically shaped stub. It appears to be complete and is neither slipped nor burnished. As far as we know, no other similar artifact has been located in Late Chalcolithic contexts.

Baking Tray

I was fortunate to find a nearly complete specimen that made it immediately obvious to me just what this form's function was. But cat. no. 1484.II (Figure 405.26) from Level V-IVe of Pekmez trench 2 had a completely different type of fabric than is usually associated with baking trays. It was harder and more refined. In addition, the coloration was different, being light reddish brown; and the core was not completely even as is the case with most of the forms in the baking tray class. As this was a singular object at Aphrodisias, it was not allocated a type number.

It is worth noting that a like form, plus three other baking trays, were paralleled with deposits of Level VI at Beycesultan (Lloyd and Mellaart 1962: Fig. P.13.15-Level XXII), and that these were manufactured in two traditional shapes: those from Late Chalcolithic levels are rimless and completely flat; and those (resembling our Aphrodisias tray from a Bronze Age 2 level) have a raised rim. This baking tray form does not appear in Troy I contexts.

Jar/Jug Rim

This red ware jar/jug rim, cat. no. 1524b.I (Figure 414.4) of Pekmez trench 2 Level VI, combines a loop handle and rim type that appears to be common to the Late Chalcolithic 4 period, for at Beycesultan similar rims are found in coarse wares (Lloyd and Mellaart 1962: Fig. P.13.4, 6.1). A loop handle similar to this form is found associated with yet another coarse ware form (*Ibid*. Fig. P.13.9, but the section of our handle is round; it is not clear what shape the Beycesultan's section is).

Handles in the late Late Chalcolithic are often found positioned just below the rim edge instead of on the rim itself. In Troy I, there is a predilection for even lower placement of the handles, for many of them are positioned on the upper shoulder (Blegen *et al.* 1950: Fig. 229, nos. 36.738, 36-683).

Ladles

Two ladles were found in the Pekmez trench 2 Late Chalcolithic deposits: cat. no. 1597f.I (Figures 251.6, 379.2, 385.33) of Level VIIIA and cat. no. 1576.III (Figure 389.44) of Level VIID.

Characteristically these are manufactured from a coarse ware mixed with large grits and sometimes are found with organic inclusions such as straw. Ladles are manufactured similarly to the pinch pots; the walls are irregularly-shaped, clumsy, and are rarely burnished or

slipped. The surfaces show cursory smoothing and wiping. Cores are black and surface coloration is a drab redbrown.

No so-called ladles have been found at parallel sites, but pinch pots are typical of the Late Chalcolithic Anatolian potting industry and the Aphrodisias ladles are probably just a variation of this.

COMMENTS ON BRONZE AGE CERAMICS

Tripodic Bowl

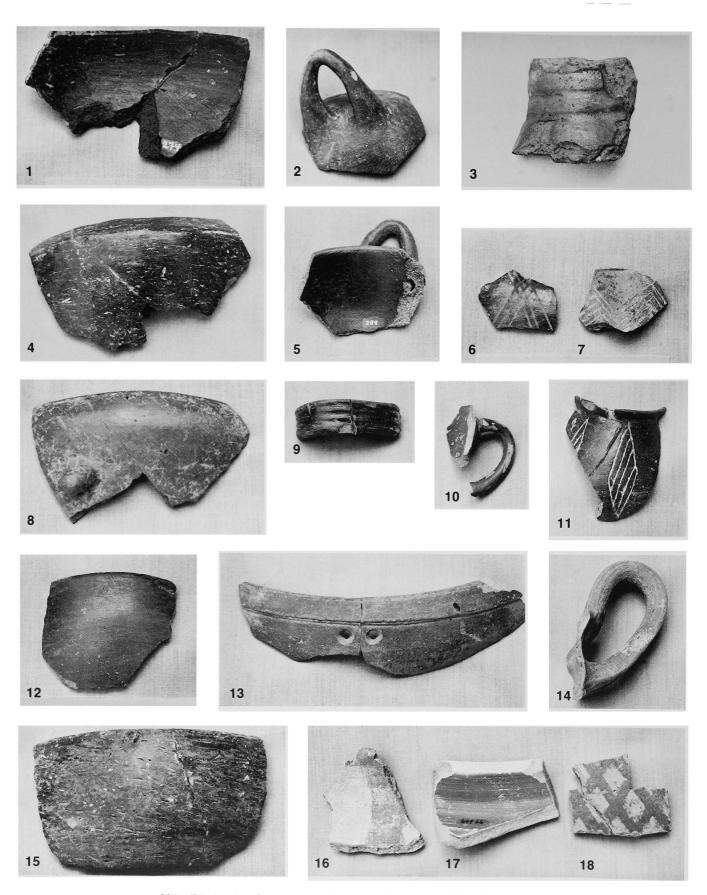
This tripodic footed bowl, cat. no. 1484.I (Figure 405.27) from Pekmez trench 2, has a concave rounded base, a squat globular body and an obliquely positioned flaring rim. Its gray ware-fabric is finer than the characteristic wares found at Aphrodisias during the Late Chalcolithic and it is analogous to the fine polished ware found at Troy. It is covered with a jet black slip on both the interior and exterior which is burnished to a glossy high luster. In addition it carries two rows of raised rounded bands horizontally positioned at its mid-body section. This form clearly appears to have been based on a metal counterpart. The legs of this bowl are conically-shaped, tapered, and are slightly bent in towards the bottom.

Although no exact parallel has been found, it seems that it may be attributed as the basis of corresponding shapes and decoration to the late Anatolian EBII or EBIIIA periods. The overall shape of the body can be found at Beycesultan in Level XVIIb (Lloyd and Mellaart 1962: Fig. P.19.3 no. 803; Fig. P.19.4 no. 800) on forms that are manufactured from black-burnished wares. The plastic bands are characteristic of EB IIIA, but the thin fine ware fabric points more to an EB II dating.

Bowl with Horizontal Loop Handle

A hemispherical fragment, cat. no. 1495.I (Figure 405.15), showing a horizontal loop handle and rim was found in Levels V-IVe of Pekmez trench 2. It is fired to a light brown color, and exhibits a black core. The exterior is colored to a reddish yellow, and both surfaces are horizontally burnished to a high luster.

This combination of rim and handle is reminiscent of many forms in the Pekmez deposits, and yet up to this point, we are unable to parallel it with exactitude. Its ware type suggests an Early Bronze I date, but until a parallel can be found we must leave its style and form open to question. A close similar shape-and-handle combination might be found in Level XIV at Beycesultan (Lloyd and Mellaart 1962: Fig. P.36.6), but these bowls cannot be considered exact parallels for both their handles



321. Distinctive Bronze Age Ceramic Fragments, Mixed trenches.

- 279.2* bowl rim (interior of Figure 321.4), Acropolis trench 3, Complexes VIII-XII (BA2)
- 289.1* cup with a horizontal handle (exterior of Figure 321.5), Acropolis trench 3, Complexes VIII-XII (BA2)
- 289.6* pedestal base, Acropolis trench 3, Complexes VIII-XII (BA2)
- 279.2* bowl rim (exterior of Figure 321.1), Acropolis trench 3, Complexes VIII-XII (BA2)
- 289.1* cup with a horizontal handle (interior of Figure 321.2), Acropolis trench 3, Complexes VIII-XII (BA2)

- 6. 288.10* white-painted fragment, Acropolis trench 3, Complexes VIII-XII (BA2)
- 7. 289.11* incised fragment, Acropolis trench 3, Complexes VIII-XII (BA2)
- 290.1* incurving bowl with a cord-eye handle, Acropolis trench 3, Complexes VIII-XII (BA2)
- 286c.1* incised handle, Acropolis trench
 Complexes VIII-XII (BA2)
- 288.7* juglet or cup, Acropolis trench 3, Complexes X-XI (BA2)
- 11. 282.2* small incised bowl, Acropolis trench 3, Complexes VIII-VII (BA2)

- 12. 282.3* bowl, Acropolis trench 3, Complexes VIII-XII (BA2)
- 13. 682.13* repaired bowl rim, Acropolis trench 7, Complex D, (BA4-MB; MB)
- 14. 277.1 cup with a grooved ear handle, Acropolis trench 3, Complexes IV-VI (BA3)
- 15. 301.4* incurving bowl, Acropolis trench 4, Complexes I-E (BA4-MB)
- 16. 698.5* Red Cross bowl fragment, Acropolis trench 7, Complex D' (BA4-MB)
- 17. 744.1* incurving rim, Acropolis trench 7, Complex D (MB)
- 18. 9A.1* decorated fragment, Acropolis trench 3, Complexes II-III (BA4)

and rims appear variants of this form. It is not clear whether this piece was originally manufactured with one or two handles. Perhaps the closest parallel is found at Kum Tepe in Period II, which is almost identical (Sperling 1976: Fig. 24; no. 907) for the only appreciable difference is that the handle on the Kum Tepe bowl is placed slightly higher on the body.

Perforated Bowl

Cat. no. 1502a.II (Figure 405.7) of Pekmez Levels IVd-IVb is a large shallow bowl which is common enough in shape, but it is of interest because of the possibility of its manufacture on the wheel, and because of the perforations associated with its probable repair in antiquity. Its incurving form is not uncommon to the L.Ch.4 levels at Beycesultan (Lloyd and Mellaart 1962: Fig. P.12.13) nor to the E.B.1 levels there (Ibid. Fig. P.14.10-12). But there are differences in ware-fabric color for this is a light-red, which leads us to speculate that this form may be intrusive to this deposit. All the Beycesultan shapes that are similar are reported to be black burnished.

A Painted Bowl Fragment

Also an import, cat. no. 9A.1* (Figures 321.18, 425.29) appeared in Acropolis trench 3 in Aphrodisias Bronze Age 4. There is a similarly painted bowl fragment found at Beycesultan in Level VIII (Lloyd and Mellaart 1962, Fig. P.56.3), which the authors state they too believe to have been an import — due to the color of the clay and the paint.

Bowl with an Everted Rim

Cat. no. 311.I (Figures 326.6, 442.11) is found in Acropolis trench 4 in the Bronze Age 4-Middle Bronze period. Its shape look-alike is form A 21 found at Troy in Level III (Blegen et al. 1951: Fig. 59a). The Aphrodisias piece probably held a horizontal loop handle on its rim which has broken away. The form continues to Troy IV when the rim is not as everted, but more upright in stance. At Beycesultan, this form enjoys great popularity, particularly in Levels XII and XI of the E.B.3 (Anatolian EB IIIB at that site: Lloyd and Mellaart 1962: Fig. P.472-6, 25-31). As at Aphrodisias its type may have carried a metallic slip.

A Red-Cross Bowl Fragment

Cat. no. 698.5* (Figures 321.16, 477.20) is the only fragment at Aphrodisias of that well-known Anatolian horizon-marker, the Red Cross bowl. The wheelmade fragment was found in Acropolis trench 7 in Complex C',

attributed to the Middle Bronze Age period at Aphrodisias. Red crosses painted on the interior of red-slipped and burnished bowls have been the subject of numerous studies. It can definitely be stated that this fragment is an import, for it differs considerably from other Aphrodisias wares of the period, being made of a light fabric with granule inclusions. These bowl types are not foreign to the Anatolian southwest for they have been found at Beycesultan (Lloyd and Mellaart 1962: Fig. P.57, 64 in Levels VI and VII). They appear to be more popular at Beycesultan than they are at Aphrodisias. They are common to the Troy deposits of the Fifth Settlement as representative of shape A 18 (Blegen et al. 1951: Fig. 240).

A Bowl Fragment with an Ancient Repair

Few artifacts that showed signs of ancient repairs were unearthed at Aphrodisias. One exception is a red-slipped and burnished bowl rim from Complex D of Acropolis trench 7 with bilateral drill holes. Cat. no. 682.13* (Figures 321.13, 477.31) is dated to the Middle Bronze deposits at Aphrodisias. The rim shape is a common one found in the later deposits of the Trojan Early Bronze Age. Its most prolific representation is found in Troy V, shape A 23 (Blegen et al. 1951: Figs. 238, and 257.18). These bowl rim types, (there are several at Aphrodisias — type BX47 is the most representative) are also popular at Beycesultan throughout the E.B.3 period (Anatolian EB IIIB) there.

(Ancient repairs of Cycladic figurines have been the topic of recent study by Getz-Preziosi (1982). A similar study should be directed to the pottery of the Early Bronze Age.)

The Wheelmade Plate/Platter

One of the hallmarks of the Trojan Bronze Age is the red-slipped wheelmade plate/platter. This form is well-represented at Aphrodisias, but the most complete specimen that has been restored is cat. no. 273.I of Acropolis trench 3 found in Complexes VI-V and dated to the Aphrodisias Bronze Age 3 period. Its drawing can be found on Figure 423 and its photograph is on Figure 322, below.

At Troy this form is known as A 1. It appears in Troy I contexts and continues through Troy II (Blegen *et al.* 1950: no. 33.245). It is curious that whereas stacks of these plates were found at Aphrodisias, Lloyd and Mellaart (1962: Fig. P.47.1) report only one that was found at Beycesultan in Level XIIc.

Knobbed Bowl-drum

The knobbed bowl from Acropolis trench 8, cat. no. II.38 (Figures 487.10, 490.42) is classified as a bowl with multiple horn-shaped lugs. Its rim shape is similar to



322. Wheelmade plate 273.I, Acropolis trench 3; Complexes VI-V, Bronze Age 3 - 4.

Beycesultan shape 33 (Lloyd and Mellaart 1965: Fig. P.23.2). The Beycesultan authors refer to the shape as a drum and state several such fragments of this vessel type were found in Level IVc ascribed to the Middle Bronze Age. From the Beycesultan evidence, it would appear that this form appears there earlier than at Aphrodisias. It is listed (*ibid*.) as being rare in Level IVa, the Middle Bronze-Late Bronze transitional period, and non-existant in the Late Bronze Age — when it makes its appearance at Aphrodisias.

Depas Amphikypellon

At Aphrodisias, eight depas cups were discovered. Their catalogue numbers, periods and illustrations are listed below:

Cat. no.	Trench	Period	Illustration
8B.II	Acropolis 3	BA4-MB	325.4, 426.11
222.IV	Acropolis 3	BA4	325.2, 426.16
225.III	Acropolis 3	BA4	325.3, 426.10
225.IV	Acropolis 3	BA4	323.3, 426.13
204.IV	Acropolis 3	BA4	325.5, 426.1
228.I	Acropolis 3	BA4	426.9, 445.5
313.VI	Acropolis 4	BA4	323.2, 444.2
320.I	Acropolis 4	BA4-MB	325.1, 444.3



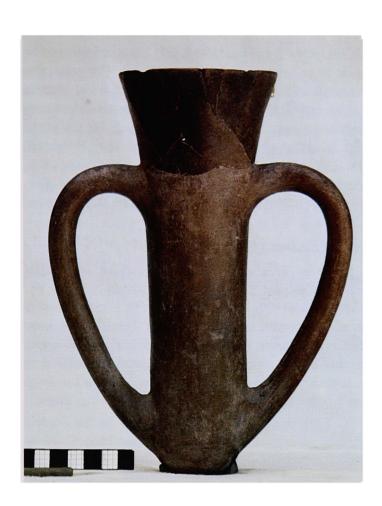
1. 320.I Acropolis trench 4, Bronze Age 4-Middle Bronze

323. Three Depas Cups.2. 313.VI Acropolis trench 4, Bronze Age 4

3. 225.IV Acropolis trench 3, Bronze Age 4-Middle Bronze

It seems that this vessel form was not introduced to Aphrodisias earlier than the site's Bronze Age 4 period, dated to the last half of Anatolian EB IIIA. This corresponds fairly well with its inception at Troy which is related to the Second, Third and Fourth Settlements by Blegen et

al. (1951: Fig. 59a, 154a, shape A 45). The vessels shown by Blegen et al. (1950: Figs. 381-382, Phases IId-g, and 1951: Fig. 87) are no strangers to the Aphrodisias repertoire — the Trojan ones especially resemble the very dark gray and burnished cat. no. 228.I (Figures 286, 324, 426.9).



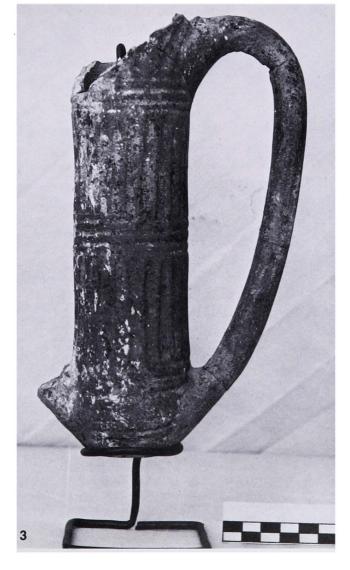
324. Depas Cup 228.I, Acropolis trench 3, Bronze Age 4.

A useful comparative analysis for this form has been published by Spanos (1972) who subdivides the class on the basis of depas that he considers to have been Trojan exports, southwestern Anatolian exports, and those that were locally manufactured (*Ibid.* Tafel 1). His thesis states that the depas cups from Aphrodisias, Beycesultan Levels XII-IX, and Karataş, Level V are local export wares. This may in part be true, but the similarities and differences of the Beycesultan and Aphrodisias shapes and wares in this group should be re-examined before any conclusions can

325. Depas Cups, Acropolis trenches 3-4.

- Depas cup 320.1 Acropolis trench 4, Complexes I-E, Bronze Age 4-Middle Bronze
- 2. Depas cup 222.IX Acropolis trench 3, Complexes I-III, Bronze Age 4
- Grooved Depas cup 225.III Acropolis trench 3, Complexes III-II, Bronze Age 4
- 4. Depas cup 8B.II Acropolis trench 3, Complex III, Bronze Age 4
- 5. Depas cup 204.IV Acropolis trench 3, Complexes III-II, Bronze Age 4











be drawn. It is curious that all the Beycesultan depas cups are short and squat, and there does not seem to be the range of size and shapes that are found at Aphrodisias.

Tankards

A Pekmez trench 2 Bronze Age 1 tankard, cat. no. 1497.II (Figure 405.19), is manufactured from a fine plain ware which is fired to a light red color and has a flattened concave base, a spherical body, a concave neck and a plain thin flaring rim. A loop handle is plug-attached to the body at its widest part. It is slipped and fired-gray on the interior and red on the exterior; it is burnished to a high luster. Other well-preserved tankards are Cat. no. 350.IV (Figures 326.4, 439.22), and from the Bronze Age 4 period, cat. no. 311.III (Figure 444.11) of Bronze Age 4-Middle Bronze contexts. Both were unearthed in Acropolis trench 4. The ware of these vessels is different from the ordinary plain medium wares — it can be identified as the fine polished ware associated with Troy shapes.

It is not difficult to parallel this form with other similar shapes, such as those found at Troy, but it is more difficult to pinpoint with accuracy if our form is in fact later than Anatolian Early Bronze I. At Troy (Blegen et al. 1950:64), shapes A 39 and A 42 are comparable. (Also see *Ibid.* no. 35-542, of Phase Id.) This problem of dating also exists at Troy itself, for Blegen says that shape A 39 cannot be identified securely with Troy I, and Schmidt (1902) says that shape A 42 is not associated with Troy I deposits. In addition, no analogous tankard was found at Thermi.

At Beycesultan this specific form is not found in E.B.1 levels, but it is similar to a red-slipped-burnished vessel without a handle found in Level XIIIA, E.B.2 (Lloyd and Mellaart 1962:117; P.46.2). However, the fine plain fabric is typical of the Early Bronze levels there (*Ibid.* 117). Mellaart (*Ibid.* 1962:191) classes this piece as an import. In E.B.2, this becomes Beycesultan shape 38, which Mellaart postulates was imported « from a more northern area ». He states (*Ibid.* 193) that this form along with others (he is referring to Troy II shapes A 2, A 43, A 45): « may perhaps be regarded as the vanguard of the catastrophic Early Bronze Age 3 change which was soon to engulf southwest Anatolia ».

A jar markedly similar to the Aphrodisias tankard is one unique to Beycesultan (*Ibid*. Fig. P.8.9), occurring there in Level XXVII or in L.Ch.3 contexts. It has groups of four knobs appearing on the upper body shoulder.

A Basket-handled Jug

Cat. no. 333.IIa (Figures 331, 439.25) finds close parallels at Troy where it is classed as a type B 9 (Blegen et al.

1951: Fig. 154a; 161 no. F 8-9.151). The corresponding form at Troy is found in Level IV contexts. The Aphrodisias example of this jug has a rounded loop handle, whereas a Trojan one (*Ibid*. Fig. 183.17) has a double-strand handle extending over the rim plus a horizontal lug under the spout. It is one of the distinctive forms that Podzuweit (1978, Tafel 32 11LIII) selected to study, which is shown as a Bronze Age horizon-marker. Orthmann (1966: Abb. 5,35) has published a corresponding shape from Yortan.

Two Incised Juglets

Dated to Bronze Age 4 at Aphrodisias is a juglet found in Complex II of Acropolis trench 3. Cat. no. 7.A.III (Figures 326.1, 426.18), which is a member of a class of juglets with multiple incisions. This one has seven encircling the neck, and double chevrons on the upper body that is also decorated with horizontal bands filled in turn with a punched broken band. Its handles are fragmented, but they may have been a curled wing shape.

At Troy this shape is found as early as the Second settlement (Blegen et al. 1950: Fig. 370b, form C 28 or C 29). It continues through the Third Settlement (*Ibid*. 1951, 59b), and becomes more globular by the Fourth Settlement (*Ibid*. 154b).

A second incised juglet dated to the same contexts is cat. no. 247.I. It is also from Acropolis trench 3. Cat. no. 247.I (Figures 285, 326.5, 426.15) is a crude little juglet with punched and drawn incisions.

Beak-spouted Jugs

In addition to the beak-spouted juglets associated with the pithos burials, some 19 beak-spouted jug rims were catalogued. Their trench attributions, catalogue numbers and chronological periods are listed below.

Trench	Cat. no.	Figures	Period
Pekmez 2	1548.I	414.5	Bronze Age 2
Pekmez 2	1473.3*	407.16	Bronze Age 2
Pekmez 2	1473.4*	407.18	Bronze Age 2
Pekmez 2	1468.2	407.15	Bronze Age 2
Pekmez 2	1468.3	407.19	Bronze Age 2
Pekmez 2	1502.1	408.6	Bronze Age 3
Acropolis 4	357.10*	436.15	Bronze Age 3
Acropolis 4	357.6*	436.14	Bronze Age 3
Acropolis 4	323.V	326.3, 439.1	Bronze Age 4
Acropolis 7	682.14*	477.34	Middle Bronze
Acropolis 7	698.6*	477.35	Middle Bronze
Acropolis 8	2124A.j	488.35	Late Bronze
Acropolis 8	2124C.II	488.37	Late Bronze
Acropolis 8	2186.I	487.8, 488.41	Late Bronze
Acropolis 8	2208.I	487.11, 488.40	Late Bronze
Acropolis 8	III.35	487.13, 488.36	Late Bronze
Acropolis 8	III.36	488.38	Late Bronze
Acropolis 8	III.37	488.39	Late Bronze
Acropolis 8	III.39	488.43	Late Bronze

No beak-spouted vessels are found at Aphrodisias before Bronze Age 1 contexts. Their presence is limited throughout the Early and Middle Bronze Ages as the above chart indicates. Beak-spouted jugs are a distinct Anatolian shape that develop different shapes throughout the third and second millennia. In the Late Bronze Age at Aphrodisias, the beak is transformed and becomes more elongated. It is gold-silver wash-slipped and is often decorated with red-painted designs. Similarly shaped beak spouts are found at Beycesultan (Lloyd and Mellaart 1965: foldouts 1-3) ascribed to Levels V, IVc and IVb or to the Middle Bronze Age periods.

Unfortunately the beak-spouted rim, cat. no. 323.V

(Figures 326.3, 439.1), is fragmented at the pouring end. This vessel was unearthed in Acropolis trench 4 in Complex Sub-I, which is dated to the Aphrodisias Bronze Age 4-Middle Bronze period. It finds its counterpart at Troy in the First Settlement, where it is represented by shape B 19. No corresponding vessel published by Blegen et al. seems to be as complete as this example from Aphrodisias. At Troy, the shape then apparently disappears for it is not represented as a significant form in that site thereafter. The evidence clearly demonstrates the continuity of the beak-spouted jug element in the ceramic tradition that is transmitted from or to the northwest — and then continues in use throughout later periods in the Anatolian southwest.













326. Distinctive Bronze Age Ceramics, Acropolis trenches 3-4.

- 1. Incised juglet 7.A.III Acropolis trench 3, Complex II, Bronze Age 4
- Basket-handled jug, 320.III Acropolis trench 4, Complexes I-E, Bronze Age 4 -Middle Bronze.
- Beak-spouted jug 323.V Acropolis trench
 Complexes II-III, Bronze Age 4
- 4. Tankard, Acropolis trench 4, 350.IV Complexes II-III, Bronze Age 4
- Incised juglet 247.I Acropolis trench 3, Complexes III-II, Bronze Age 4
- 6. Acropolis trench 4, 311.III, Complexes I-E, Bronze Age 4 Middle Bronze.

Three Wing-handled Jugs

In Acropolis trench 3 were two wing-handled jugs dated to Aphrodisias Bronze Age 4. Both serve the same function. Cat. no. 219.II (Figures 327.1, 426.4) stands on a tripodic base and has a more globularly-shaped body than does its relative, cat. no. 212.II (Figures 327.2, 426.22). The lug wing-shaped handles are different — one has outspread lugs and the other has lugs that are squared-off and pointed upward. Although the same form, they look to have been manufactured by different workshops, the latter having a sightly off-set neck.

With tripodic feet, *cat. no. 219.II*, (*supra*) belongs to the C 35 class at Troy (Blegen *et al.* 1950: Fig. 131b), which has a predecessor in Troy I and continues through to Troy IV (*Ibid.* 1951: Fig. 154b).

Acropolis trench 4's cat. no. 313.IV (Figures 327.3, 444.15) is flat-based and wing-handled. It is dated to the Aphrodisias Bronze Age 4-Middle Bronze Age period. Noteworthy are the raised ribs on its elongated neck — this is a local variation of shape, for it does not find an exact duplicate at Troy.

The C 26 class at Troy (Blegen et al. 1950:Fig. 370b) may be associated with cat. no. 212.II. Although this class starts earlier, in Troy I, it takes on the shape of the Aphrodisias vessel by Troy II (Blegen et al. 1950: Fig. 370b), and remains basically unchanged until Troy III contexts (Ibid. 1951: Fig. 59b). Both of these corresponding shapes disappear after Troy III, and take on different forms. It is curious that they do not seem to enjoy the same popularity at Beycesultan.

Cutaway Spouts

A cutaway spout was unearthed in Pekmez trench 2, Level VI of Bronze Age 1. Cat. no. 1502a.I (Figure 405.8) is fired to a Munsell pink and it has an even core. At the base of its elongated neck, it is incised with three horizontal bands. Possibly this spout was slipped in antiquity, but there is now no trace of slip adhering to the surface. Later spouts represented in the Figures include cat. no. 289.10 (Figure 421.16) of the Bronze Age 2 period; cat. no. 8B.I (Figure 426.14) of Bronze Age 4; cat. no. 313.I (Figures 334.3, 444.1) of Bronze Age 4-Middle Bronze periods, and two from Middle Bronze-Mixed deposits, cat. nos. 4.9* (Figure 462.10) and 670.1* (Figure 485.15).

Jugs with cutaway spouts are best represented at Beycesultan in Levels XIV-XVI. At that time they are the second most popular jug type after the beak-spouted variety (Lloyd and Mellaart 1962:167, shape 10). Their earliest appearance at Beycesultan is in the E.B. 1, where only one fragment, which is black-slipped and burnished, was recorded (*Ibid*. Fig. P.14.35). Although not incised, there is a shape-form at Beycesultan which closely resembles the Aphrodisias fragment (*Ibid*. Fig. P.22.4 — it too has an elongated neck). In Level XVI there is a similar type (*Ibid*. Fig. P.25.11) but its neck does not appear to be as elongated.

Mellaart states that cutaway spouts are rare in the Beycesultan E.B.1 contexts, and he hypothesizes that this example may, in fact, be an import from the Yortan area, where the shape is common (*Ibid.* Fig. 117, 125).







- 327. Three Wing-handled Jugs.
- 1. 219.II Acropolis trench 3, Bronze Age 4
- 2. 212.II Acropolis trench 3, Complexes I-III, Bronze Age 4
- 31.311V Acropolis trench 4, Complexes I E, Bronze Age Middle Bronze

It is possible therefore that the Aphrodisias spout could have been a) an import in the Early Bronze I period, or b) an intrusion in our Level VI deposits.

Also at Beycesultan plain incised ware is rarer in E.B.2 than in E.B.1 (*Ibid*. 135) — and the fabric of this spout is hard and has a « clinky » consistency, a term Mellaart uses to describe the E.B.1 wares (*Ibid*. 116). Technically, this spout is superior in manufacture to any ceramic that has yet been unearthed in the Pekmez deposits. On the basis of the Beycesultan evidence alone, we would opt to place this spout into E.B.1 (Anatolian Early Bronze II) contexts.

A Fragmented Zoomorphic Jug

Cat. no. 246.III (Figures 328, 426.17) was found in Acropolis trench 3 and is dated to the Bronze Age 4 at Aphrodisias. Unfortunately its rim is fragmented. It stands on a tripodic base and originally bore a painted cross on its body, which has all but worn away. Orthmann (1966: Abb. 9, no. 7) presents an askos with a cutaway spout that has a similar globular body shape and tripodic base. In its original condition, it might have resembled a Troy II askos (Blegen et al. Fig. 496, no. 35.441).





328. Zoomorphic Jug 246.III, Acropolis trench 3; Complexes III-II, Bronze Age 4.

329. Askos Fragment.

- 1. 204.I Acropolis trench 3, Complexes III-II, Bronze Age 4
- 2. Incision Askos fragment 204.1. Detail



A Fragmented Incised Askos

In Acropolis trench 3, a spherical askos body, *cat. no. 204.I* (Figures 329, 425.34) was unearthed in Bronze Age 4 contexts. (Detail of the four-pronged incised design on the top of its back can be seen in the photograph on Figure 329). The design, which looks like a cross, is surrounded by an incised palm-like motif that decorates the upper half of the body in four-registers. The incision is shallow and effected with a blunt faced tool. Similar palm motif incisions are found in Troy V contexts (Blegen *et al.* 1951: Fig. 245, no. 10).

D 29 is the shape at Troy assigned to askoi (Blegen et al. 1950: 132). In Troy II, a small askos with a cutaway rim is found (Blegen et al. 1950, Fig. 370b) and it reappears in Troy V (*Ibid.* 1951, Fig. 238) when the askos becomes a major form, but both bodies are squatter than the Aphrodisias shape. The Yortan askoi published by Orthmann (1966: Abb. 9, no. 77-78) have different, more elongated shapes and the majority stand on tripodic bases, whereas this Aphrodisias form is flat-based. The askos at Beycesultan Level IX is also flat-based and, like the Aphrodisias askos, is incised with palm motifs in three registers. Its shape too is more similar to ours (Lloyd and Mellaart 1962: Fig. P.53.2).

Askoi continue to be the subject of study. Podzuweit (1972: Beilage 21, 22, 24) outlines their presence at Poliochni Level IIa, Thermi Level I, Troy IIIa, Beycesultan Levels IX and X, among other sites. (In a personal communication J. Rutter of Dartmouth College, Hanover NH informs me that a reanalysis of these forms is undergoing study at this writing.)







330. Face Urn 253.I (detail), Acropolis trench 3, Bronze Age 4.



331. Cup 333.IIa, Acropolis trench 4; Complexes III-II, Bronze Age 4.



332. Ear-handled Cup 232.I, Acropolis trench 3; Complexes II-III, Bronze Age 4.

Face Pot

Recovered from Acropolis trench 3, was a small face pot, cat. no. 253.I, Figures 310, 330, 426.12. It is dated to Bronze Age 4 or Anatolian EB IIIA-B. The Aphrodisias vase has large eyes, a long nose, rounded ears and an open mouth. Long hair is seen to fall onto the back. On the body of the vessel are appliqued breasts. Its two upright probably wing-like handles are fragmented. All of the features are delineated by modelling in relief. Unfortunately this pot is fragmented at its top, so the details of the upper head are lost.

At Troy, Schliemann (1881:290) found owl-faced female vases associated with the second settlement. Blegen *et al.* (1950: fig. 370b; 1951: 59b; 154b, form C30) have found them associated with Troy II, III and IV. In his study of Trojan vessels that belong to the Early Bronze Age in Anatolia, the Aegean and neighboring areas, Podzuweit (1978: Beilage 21 no. 6AIIIa) traces the correspondences of these vases from both Phase IIc at Troy (which covers the Third Settlement) to Level V at Poliochni.

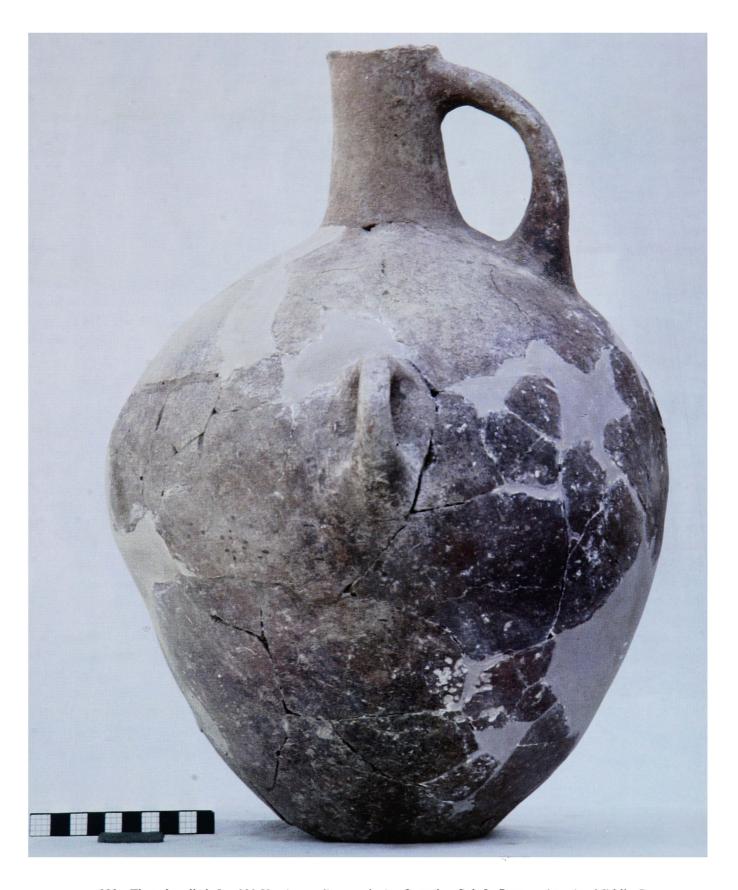
A Cup

Squat neckless cups like cat. no. 333.IIa (Figures 331, 439.25) are ubiquitous to the Bronze Age. The Aphrodisias

example was found in Acropolis trench 4, and is dated to the Bronze Age 4-Middle Bronze transition period. Characteristic of this vessel is that a handle is placed below the rim. It is found at Troy in the Second Settlement (Blegen et al. 1950: Fig. 370a shape A39), and the form, although more elongated than the Aphrodisias counterpart is also found in Troy III (*Ibid.* 1951, Fig. 60, no. 33.144). The Aphrodisias cup may be more crude in its manufacture, but the idea-shape is the same. This type of vessel does not appear to have a parallel at Beycesultan.

An Ear-handled Cup

Cat. no. 232.I (Figures 332, 426.8) is a common form to the Anatolian Bronze Age. Corresponding shapes can be found at Troy IV and V (Blegen et al. 1951: Fig. 154a; 238, shape A 33). Cat. no. 232.I finds a sister in Troy IV (Ibid. Fig. 159, no. 36.711). Podzuweit (1978, Tafel 4, no. IVa) parallels these cups to those found at Poliochni (Ibid. Beilage 21), and Thermi (Ibid. Beilage 20). At Beycesultan this form is well-known. A parallel can also be found in E.B.2 contexts there (Lloyd and Mellaart 1962: Fig. P.24.11).



333. Three-handled Jar 320.V, Acropolis trench 4; Complex Sub-I, Bronze Age 4 - Middle Bronze.

A Jar

Recovered from Acropolis trench 4 of Bronze Age 4-Middle Bronze periods was a jar, cat. no. 320.II. It is shown on Figures 334.2, 445.3. Podzuweit (1978, Beilage 20) finds correspondences for this shape between Troy Ib, IIa and Thermi III, IV.

Jar

In Acropolis trench 3, placed in Bronze Age 4 contexts, is a fragmented jug, cat. no. 221.1 (Figures 334.6, 427.8). This form is represented at Troy either by shape C 16 or better perhaps by C 11 (Blegen et al. 1950: Fig. 395, no. 35.1230). This latter piece from Troy has loop handles that are placed high on the shoulder of the vessel and the body shape is similar to the Aphrodisias example.

A Three-handled Jar

Cat. no. 320. V (Figures 333, 445.28) is a popular form throughout the Early Bronze Age. This jug was found in Acropolis trench 4 in the Bronze Age 4-Middle Bronze period. At Troy II, this form is known as B 22, (Blegen et al. 1950: Fig. 386 (b). Podzuweit (1978, Tafel 10 G.I.) has paralleled these forms.

A Black-slipped White-painted Jug Body

From Pekmez trench 1, cat. no. 1403.II (Figures 334.5, 370.10), the bottom of a white-painted jug was found. It is a globular shape and can be likened to similar jugs published by Orthmann (1966: Abb. 2.13, 16; Abb. 3.21) from Yortan. It is possible that this type of jug is related to the black-slipped ceramics of the pithos burial in Pekmez trench 2. It finds its ancestry in the whitepainted wares of the Late Chalcolithic period, but is definitely of an Anatolian EB II development in both the potting concept and the Aphrodisias stratigraphy. At Beycesultan white-painted motifs are a popular form of decoration in the E.B.2 deposits. Similar white-painted zigzag decoration is painted on Reg. no. 798 (Lloyd and Mellaart 1962: Fig. P.25.19). The difference in the Beycesultan vessel is that the body is decorated with white-filled incisions.

A Knobbed Jug

This vessel was found in Acropolis trench 4 in Bronze Age 4-Middle Bronze contexts. Cat. no. 313. V (Figures 334.4, 444.18) is characterized by having multiple knobs decorate its body. It is difficult to find parallels at Troy, but at Beycesultan this is a known form of vessel, shape 5, and has a decoration which the excavators have associated with storage jars. It is found in Level V along with a globular-shaped vessel that is like the Aphrodisias example (Lloyd and Mellaart 1965: Fig. P.9.4). This may indicate it is a form that achieves greater popularity in the Anatolian southwest.

Sack-shaped Jug

This jug of coarse ware was found in Acropolis trench 4 in Bronze Age 4-Middle Bronze contexts. *Cat. no. 313.I* (Figures 334.2, 444.1) is a descendant from ovoid-shaped vessels, Trojan form B 3. Its closest parallel is found in Troy IV (Blegen *et al.* 1951: Fig. 162 no. 37.908), but it is also akin to the shape found in Troy IIg that is similar to no. 35.504 (Blegen *et al.* 1950).

An Incised Beaked Jug

On Figures 335, 425.35, cat no. 7A.I is a globular jug with a slanted neck, and three sets of double-banded raised ribs extending from the upper body shoulder to the base. A round-sectioned loop handle extends from mid-neck to the upper body. It was recovered from Acropolis trench 3, Complex II contexts, placed in the Bronze Age 4. Similar jugs are visible in Troy II and III (Blegen et al. 1950:370a; 1951: Fig. 59a shape B 22).

A Multi-spouted Jug

In Acropolis trench 3, dated to the Bronze Age 4, Cat. no. 222.III (Figures 79, 428.23) a tour de force multispouted jug was unearthed. It is a curious piece that finds no parallels with ceramics from other sites. Although crude and globular, it is an extraordinary manipulation of clay and is an imaginative design. Its suggested use is difficult to interpret, but it may have served for some sort of a ceremonial function.

334. Jars and Jugs of the Bronze Age

- Three-handled jar 201.I Acropolis trench 3, Mixed
- Sack-shaped jug 313.I Acropolis trench 4;
 Complexes I-E, Bronze Age 4 Middle Bronze
- 3. Jar 320.II Acropolis trench 4; Complexes Sub-I, Bronze Age 4 Middle Bronze
- 4. 313. V Acropolis trench 4; Complexes I-E, Bronze Age 4-Middle Bronze
- 5. Black slipped, white-painted jug body 1403.II, Pekmez trench 1, Bronze Age 2.
- 6. Jar 221. I Acropolis trench 3; Complexes III-II, Bronze Age 4.













Two Work Pots

A work pot, cat. no. 1484.III (Figures 405.14), is a heavy, coarse ware, thick-walled cylindrical form. This is the earlier of two such pots found at Aphrodisias. It was found in Pekmez trench 2 in Bronze Age 2. The second such pot having a slightly sloping rim, is cat. no. 311.III (Figures 336, 444.24) from Acropolis trench 4 and is placed into Bronze Age 4-Middle Bronze Age contexts. It has a rounded base, an irregular concave body, and a plain thickened rim with a basket handle attached to the rim edge. A coarsely effected perforation positioned well below the rim on the handle side of the pot indicates that this « work pot » may have served for decanting liquids.



335. Incised beaked Jug 7A.I, Acropolis trench 3; Complex II, Bronze Age 4.

The antecedent for this form has been found in Anatolian Early EB I - II deposits. It appears at Troy in IId and IIg strata in plain ware, and is classed by Blegen and his associates as form D 32 (Blegen et al. 1950:241, no. 36.675 and 36.744). This form continues late in the Bronze Age (*Ibid.* for later parallels, see 241). Schliemann (1881: 555, no. 1194) published one that he reports belongs to Troy IV contexts. At Beycesultan a parallel has been found in Level XIIb (Lloyd and Mellaart 1962: Fig. P.48.15).

A Tripod Cooking Pot

In Pekmez trench 1, a well-preserved tripod cooking pot was found. *Cat. no. 1403.I* (Figures 289, 337, 370.15) is typical of cook wares of this period. Similar vessels

have been found at Troy where it is known as shape D 24 that appears in the First Settlement (Blegen et al. 1950: 223b), and continues to Troy III when it undergoes a change of shape in both the bowl and the shape of the pods. Two red-slipped and vertically burnished pointed types are represented on Figure 337, 370.15. The flat grooved type of base is associated with red-slipped and burnished straw-tempered jars.



336. Acropolis trench 4, 311.III Complexes I-E (Bronze Age 4-Middle Bronze).

Podic bases at Aphrodisias were prolific, as they were at Beycesultan. They are represented there by a great variety of shapes. The closest parallel to the Aphrodisias one is from E.B.2 (Anatolian EB IIIA at Beycesultan (Lloyd and Mellaart 1962: Fig. P.42.5).

A Knobbed Cooking Pot

A knobbed cooking pot, cat. no. 1495.II (Figure 405.25) was recovered from Bronze Age 2 deposits of Pekmez trench 2 Levels V-VIe. Its base is rounded, it has an ovoid sack-shaped body, and a flared rim that is thickened to the exterior. Knobbed lugs are positioned on its upper body shoulder. This vessel bears little resemblance to either coarse or fine ware shape forms attributed to the Early Bronze 1 by Mellaart (Lloyd and Mellaart 1962: Fig. P.21), nor can it be paralleled at Kum Tepe or at Troy.

A One-handled Cooking Pot

In Acropolis trench 3, the *cat. no.* 7.A.IV of Complex II, dated to the Bronze Age 4 was found. It is represented on Figures 338, 425.18.



337. Tripod cooking pot 1403.I, Pekmez trench 1; Bronze Age 2.



338. One-handled cooking pot 7A.IV, Acropolis trench 3; Complex II, Bronze Age 4.

A Two-handled Cooking Pot

Cat. no. 246.I (Figures 340, 427.45) is from Acropolis trench 3 dated to Bronze Age 4 contexts. This shape is not a stranger to the Bronze Age Anatolian repertoire. The closest parallel at Troy is shape C 19, common to Troy II-IV contexts (this form had made its appearance in Troy II, Blegen et al. 1950:370b). The C 19, however, is neckless, whereas its counterpart at Aphrodisias has a delineated neck. The relationships of these vessels to others should not be hard to find.

Spit Supports

Four spit support fragments were found in the Aphrodisias deposits. A complete example was unearthed in Acropolis trench 3 in Bronze Age 3 contexts. It is cat. no. 273.I (Figures 322, 423.2). Others include cat. no. 1560.1* of Late Chalcolithic 3, two from Bronze Age 3, cat. no. 264.3* (Figure 424.1) and cat. no. 283.I (Figures 341, 423.22), and an example from Bronze Age 4, cat. no. 252.2* (Figure 428.4).

It is noteworthy that they are part of the Early Aegean material also imported to Troy IV (Blegen *et al.* 1951: Fig. 170.12).



339. Cooking pot with one handle 333.IIb, Acropolis trench 4; Complexes II - III, Bronze Age 4.



340. Two-handled cooking pot 246.I, Acropolis trench 3, Bronze Age 4.



341. Spit support 283.I, Acropolis trench 3; Complexes XII-VII, Bronze Age 2.

Decorated Ball

In Acropolis trench 3 of Bronze Age 4 contexts, an ornamented incised terracotta ball was unearthed. It is decorated with impressed superimposed circles.

In Level IV at Troy, Schliemann reports finding similarly decorated balls (Schliemann 1881:563, no. 1225-1229), and Blegen illustrates four out of five ornamented balls he found in Troy III deposits, all contemporary to Aphrodisias. (Blegen *et al.* 1951:304, Table 26, Fig. 56, nos. 35-232, 34-415, 34-54, 33-297). The ornamentation on each of these examples is composed of circular punched and incised motifs.

Ribbed Fragments

Worth noting were three curious ribbed fragments found at Aphrodisias (cat. nos. 337.2*, 342.5*, and 342.6*, Figures 439.34, 35, 36 respectively). Understanding their presence, purpose or origin was difficult. In ware fabric, there is nothing locally manufactured that resembles them, so we can safely state they were imports. It is noteworthy that they are part of the Early Aegean material also imported to Troy IV (Blegen et al. 1951: Fig. 170.12).

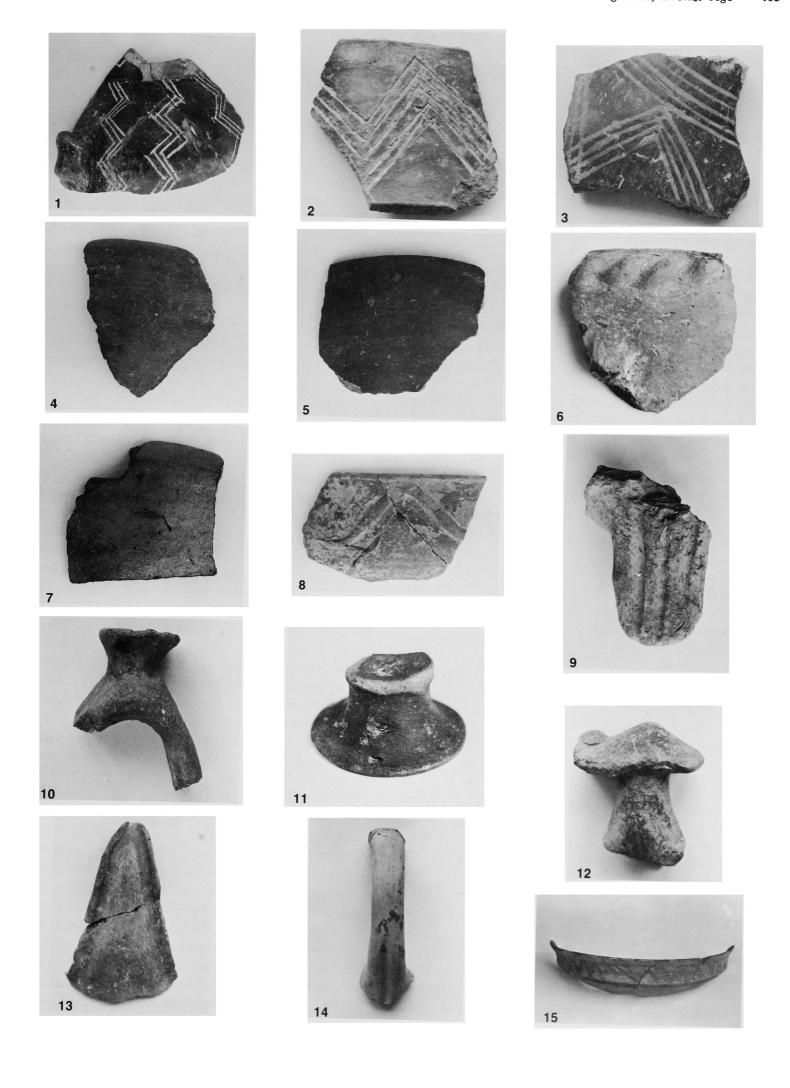
Pedestal Bases

Pedestal bases (also known as high ring bases) may not be common to Aphrodisias, but they are found in most Bronze Age contexts. The earliest such base is cat. no. 1497.I (Figure 405.16) of Pekmez trench 2 Bronze Age 1. Other bases include nine complete pieces: five in Bronze Age 2 include cat. no. 288.12* (Figure 421.31 which is covered with a tan-gold wash-slip; cat. no. 292.2* (Figure 421.26); 284.12* (Figure 421.32); cat. no. 289.6* (Figure 421.2), which is also covered with a gray metallic washslip; and a fenestrated pedestal base found in Kuşkalesi trench 2, cat. no. 8.5* (Figure 503.5). Two that are placed in Aphrodisias Bronze Age 3 contexts are both found in Acropolis trench 4: cat. no. 357.8* (Figure 436.20) is black slipped and burnished as is cat. no. 369.I (Figure 436.38). In Bronze Age 4, cat. no. 222.3* (Figure 428.18) bears a grayish brown flaky slip. In the Iron Age, the shape becomes much smaller and it is difficult to distinguish between the high ring base and the pedestal base. A typical pedestal base of this period is cat. no. 6.126 (Figures 353.28, 468.8) found in Acropolis trench 6 with the Lydian deposits.

Bronze Age pedestalled bases are also common to Troy I where over 100 examples were found (Blegen et al. 1950:59). They were generally associated with inverted bowls — type A 7 (Ibid. Fig. 224, 262, no. 23-28) and type A 13. These bases have either solid walls or perforated symmetrically-spaced openings. Blegen parallels pedestal bases from Troy to those found at Protesilas (Demangel 1926:39, no. 63, Fig. 47.1); Neolithic-Early Helladic Asea (Holmberg 1944:60, 64, Fig. 67b, c; 72); Early Helladic Zygouries (Blegen 1928:124, Fig. 116; 125, Fig. 117), Saratse (Heurtley 1939:183; Fig. 56b); Knossos, in an Early Minoan context (Evans 1963:24, Fig. 8) and at Mochlos (Seager 1912: no. M.34). They are also found at Alisar (Schmidt 1932:76, Fig. 84, no. 23, no. e2106) in a deposit dated to the Chalcolithic. At Beycesultan this form is recorded in E.B.2 levels (Lloyd and Mellaart 1962: Fig. P.22.13-15, Level XVIc). A trumpet base from Beycesultan has ripples like the one from Aphrodisias, but (Ibid. P.24.21) of Level XVI is the most similar to the Aphrodisias bases in shape.

- 1. 1468.I Pekmez trench 2; Level V-IVe (BA2)
- 289.11* incised fragment, Acropolis trench 3; Complexes VIII-XII (BA2)
- 288.10* white-painted fragment, Acropolis trench 3; Complexes IX-VIII (BA2)
- 1464e.1* incurving bowl rim with a cord-eye lug handle, Pekmez trench 2; Levels IVd-IVb (BA3)

- 342. Distinctive Bronze Age Ceramics, Mixed Trenches.
- 5. 289.5* bowl, Acropolis trench 3; Complexes VIII-XII (BA2)
- 6. 1485.4* beaded bowl, Pekmez trench 2 (BA2)
- 289.13* unidentified squaredoff fragment, Acropolis trench 3; Complexes VIII-XII (BA2)
- 8. 305.1* incurving bowl rim with appliqued moustache design, Acropolis trench 4; Complexes I-E (BA4-MB)
- 9. 1473.5* grooved podic base, Pekmez trench 2 (BA2)
- 517.1* handle with cup-like projection, Acropolis trench 5; Complexes F, E, D (BA4-MB)
- 11. 523.1* black slipped pedestal base, Acropolis trench 5; Complex I (BA4-MB)
- 12. 1598f.22* knob type handle, type CH22, Pekmez trench 2; Level VIIIA (Late Chalcolithic intrusion on this Plate)
- 13. 529.2* horn-like projection, type MF18, Acropolis trench 5; Complex I (BA4-MB)
- 14. III.88 grooved handle, type H73, Acropolis trench 8; Complex A-4, Phase III (LB)
- 15. 2136.I decorated bowl, Acropolis trench 8; Complex A-4, Phase II (LB)



PITHOS BURIAL CERAMICS

Ceramics of the Pekmez Trench 2 Pithos Burial

There is neither variance of color nor of decoration on three out of the four of these funerary offerings; the ware fabric is similar in paste and the color is a very dark-black. They are medium-walled, rather weighty, and covered in a heavy black slip which is brilliantly burnished to a high luster. Plastic ornament has been used only in association with the small beak-spouted juglet. Common to all of these jugs is their short squat necks, short spouts, globular shapes and rounded bases. All four of these vessels have round or ovoid-sectioned vertical loop handles that extend from the rim down to the upper body shoulder. Three of these vessels are characterized by rising spouts — one is a beak spout, two are cutaway spouts; and the last has a plain horizontal rim. Although of gray ware, the infant feeder with the cutaway spout bears a low-lustered mottled slip that ranges from red to dark red-gray. But, as we mentioned previously, Mellaart (1962:135) says that at Beycesultan jugs with cutaway spouts are always black in the Early Bronze period.

It is obvious that the shapes of these vessels are types foreign to that which is known up to this point in our study. This seems to indicate that a dramatic cultural change has taken place from the time of our mixed level VI deposits to those of the Pithos burial. It is probable that this is the result at Aphrodisias of a widely extended Anatolian E.B.II-IIIA culture change.

Mellaart (1962:136) comments on these changes: « The origin of this culture is clear. It is not derived locally from that of the E.B. 1 period, but was imported from north-western Anatolia, where alone its prototypes can be found in the E.B. 1 period, and that in such profusion as to establish its north-western origin beyond any doubt. » Thus provisionally, we would date these forms to Level XVI at Beycesultan.

The jug with cutaway spout, cat. no. 1579.I (Figures 343-344.2, 411.3) belongs to a class of beaked jugs related to the decanter, and is distinguished by its open cutaway neck and trough-shaped spout. Although the base is round, it is flattened enough so that with liquid, the vessel would sit by itself. The thick ware-fabric is fired to a Munsell 2.5YRN4/ or a dark gray. The decoration consists of a thick black slip, crackled and flaky in spots, but on the whole it adheres well to the surface, particularly on the top and side of the jug. This jug is burnished to a high glossy luster, particularly evident in Figure 343. Other than surface abrasion in its lower midbody, this vessel is intact.

The ware-fabric places this jug into a distinctive group of cutaway-necked jugs that are Yortan-influenced in the Anatolian Early Bronze II. In the examination of the Yortan material housed both at the Manisa Museum and at the Archaeological Museum in Istanbul, we found a close resemblance between the jugs and those from that site. In the Manisa Archaeological Museum, Yortan jug no. 3398 is identical in shape to ours but it is white-painted with chevron motifs on the upper body and shoulder. In addition, it has knobbed projections. Aside from its thick fabric, cat. no. 1579. I displays typical broad, squat, saggy shapes of this period. In fact the closest parallel to this shape is found at Beycesultan in Level XV (Lloyd and Mellaart 1962: Fig. P.31.5). Although the Beycesultan example is knobbed, and rests on a tripodic base — the rim, overall vessel shape, and handles are similar.

A black-slipped, highly burnished, knobbed juglet, cat. no. 1579.II (Figures 343-344.1, 411.4), is a very dark gray ware (Munsell 2.5YRN3/). The lustrous quality of the slip and burnish can be seen in Figures 343-344. It has a rising rim which ends in a typical beak spout. Three knobs decorate the upper body shoulder. Aside from a few nicks on the rim, this juglet is in excellent condition.

Parallels can be found at Beycesultan in Levels XVI (Ibid. Fig. P.25.7), and XV (Ibid. no. 707) where it is the single most popular type (Ibid. 167). It is of interest to note that this form, shape 9, is of plain buff ware and is covered with a gray wash. It is commonly found at Yortan (Reg. no. 3408. Istanbul Archaeological Museum). And at the Manisa Archaeological Museum, Yortan jug no. 3408 with its knobbed projections is similar in shape, but not in decoration. Also see Forsdyke's (1925) The British Museum Catalogue I.I., Plate I.A6; this is a very close parallel - A5 and A19 are also good parallels). This form is representative of a cultural tradition that was enjoyed in the southwest into the EB II-IIIA. Further afield, it has counterparts in Troy I (Blegen et al. 1950: Fig. 288, 36.843, 36.676), which places it into a similar context.

An infant feeder, cat. no. 1579.III (Figures 343-344.3, 411.2) has a fragmented beak spout and cutaway rim. Hallmarks of this western Anatolian Early Bronze Age II-IIIA period are both the wide-necked and narrow-necked jug shapes — cat. no. 1579.III (Figures 343-344.3, 411.2) might be classed as the narrow-necked variety. It is fired to a dark gray color but is covered with a flaky mottled red (Munsell 10R6/6) to dark reddish-gray slip (Munsell 10R4/1), and is burnished to a low luster. The exterior



343. Ceramic funerary offerings, Pithos burials, Pekmez trench 2, Bronze Age 3.

- 1. 1579.II knobbed jug
- 2. 1579.I jug with a cutaway spout;
- 3. 1579.III infant feeder with a fragmented spout and cutaway rim

4. 1579.IV small jar

and partial interior (rim and neck) areas are covered with a slip that has flaked off the body fabric. The ware-fabric appears in places to have been abraded. The body is horizontally burnished; and the slipped areas that remain on the neck indicate that it is vertically burnished. It is presumed that a conically-shaped tubular spout was attached to the mid-body roughly in a position perpendicular to the handle. The body was scored while the clay was in a fairly plastic state, for there is a surplus of clay pushed to the interior. In excavation the spout was not recovered, which indicates that this juglet was buried with the deceased in its present condition — suggesting that perhaps this vessel, and others as well were used by the person during their life. This gives us an interesting picture of possible popular relationship between burial offerings and the deceased, and may aid us in understanding the burial practices.

Parallels to the overall shape of this infant feeder can be found at Beycesultan in Level XIII (Lloyd and Mellaart 1962: Fig. P.45.4). Even though this shape rests on a tripodic base, the body and rim shape are similar. Spouted vessels such as this appear at Beycesultan in E.B.1 contexts (Anatolian EB.I-II), but their shape forms are considerably different (*Ibid.* shape 15, Fig. P.19.2). A tubular spout also appears at that site in E.B.2 (Anatolian EB.IIIA) contexts (*Ibid.* Fig. P.38.16), but it is not clear as to what type of vessel it is. In Troy I contexts parallel of this form occurs. There is similarity between

the Aphrodisias model and a cutaway-spouted vessel there (Blegen *et al.* 1950: Fig. 227, 35.649). At Yortan, a widenecked feeder in black ware is found (Forsdyke 1925: Plate I, A24), which is also decorated with knobs.

The small juglet, cat. no. 1579.IV (Figures 343-344.4, 411.1) may have been associated with either of the two skeletons — as pointed out earlier in Part 2. It was unearthed behind skeleton a. The juglet rim is modeled to an exaggerated flare. Though burnished to a high luster, the quality of the slip is flaky. A Beycesultan parallel for this can be found in the E.B.1 (Lloyd and Mellaart 1962: Fig. P.14.31), but this form is knobbed and its rim flare is more characteristic of E.B.2 forms there (*Ibid.*: See bowl forms from Level XIII, Fig. P.44.22-23 which bear the same flared shape). It seems that this jug's rim is variant — for the position and shape of the rim itself cannot be paralleled with exactitude.

A similar juglet form is found at Iasos (Levi 1963: Fig. 97.4), and Yortan parallels can easily be found (Forsdyke 1925: Plate I), as they can in Eastern Aegean contexts (e.g. at Thermi and at the Heraion in Samos).

The presence of this pithos burial is significant for it provides us with yet a new link to the Early Bronze Age horizon of western Anatolia as well as with the eastern Aegean. Future conclusions about the pottery of the Early Bronze Age period can be filled in from what is known about specific shape-forms and their distribution. It is



344. Ceramic funerary offerings, Pithos burials, Pekmez trench 2, Bronze Age 3.

difficult to determine just where this pithos burial fits chronologically. Tentatively I have assigned it to Anatolian Early Bronze Age IIIA contexts, ca. 2600-2300 B.C. in calendar years.

One of the features of this pottery producing area in the Anatolian Early Bronze Age II-IIIA period, is that within certain parameters there is great freedom in the treatment of the ceramic. Although our understanding of this period is imperfect, it can be seen that the potter was free from restrictions in the decoration of vessel types. There is an admixture of old and new ware-fabrics, black and red slips, high and low burnishing, and plastic decoration with multiple knobs. All of these factors suggest metal and indeed even leather prototypes. Beak and cutaway spouts are forms that are not foreign to western Anatolia and her eastern Aegean neighbors.



345. Kuşkalesi trench 1, pithos burial juglet with a cutaway spout 9A.3*.

Kuşkalesi Pithos Burial Juglet with a Cutaway Spout

In Kuşkalesi trench 1 inside the pithos associated with the infant burial was a juglet of fine ware with a cutaway spout. Cat. no. 9A.3* (Figures 345, 414.14) is of a light colored fine fabric that is not generally associated with the ceramics of Aphrodisias; the evidence suggests that it was an import. Three knobs decorate its upper body, which is characteristic of juglets in this E.B. period. This bulbous shape is well known at Troy where it is represented as a B 13 type that begins and ends in the First City (Blegen et al. 1950: Fig. 223a). Its closest parallel at that site is shown (Ibid.) on Fig. 228, no. 36.735.

Large Jar with Horizontal Loop Handles

In Acropolis trench 6, associated with the complex of burials was a large jar that probably served as a burial urn. Cat. no. 4.3 is represented on Figures 346 and 462.9. It is distinguished by having a micaceous black slip that glistens. This form has its inception at Troy in the Second Settlement (Blegen et al. 1950:370b), and is the Trojan shape C 13. The use of it continues through Troy V but the basic shape, which remains unchanged from Troy II to IV has now changed — so it is probable that its concept was introduced to the site during this period of Bronze Age 3 and Bronze Age 4. For that reason, we have tentatively placed this vessel in the Aphrodisias Bronze Age 3.

Tripodic Jar

Also part of the Acropolis trench 6 burial deposit was a tripodic jar that may have served as a burial container. Cat. no. 4.7 (Figures 347, 462.1) is characterized by being manufactured of a spongy coarse ware filled with organic inclusions. The pores of the fabric are numerous and large. Generally these vessels are covered with a red or red-brown slip and they are burnished. Even with the burnish, the surface is striated with the marks of temper that has been burned-out in firing. Few vessels made of this so-called straw-impressed ware have been found at Aphrodisias, and 95% of those were found associated with containers unearthed in this funerary deposit of Acropolis trench 6.

Characteristic of the podic feet of this vessel are the vertical grooves extending the length of the foot. The same decoration appears on a buff ware fragment from Beycesultan (Lloyd and Mellaart 1962: Fig. P.46.11). Tripodic vessels are common to the early part of the Early Bronze Age in Anatolia, but this particular jar form does not seem to have been a popular one. The Aphrodisias evidence suggests that this form may have served only in a specialized use capacity — for burials, because parallels to it are not found in the deposits at Troy or at other sites.

*

This review has concentrated on a discussion of some of the ceramics at prehistoric Aphrodisias. It has been an abbreviated comparative analysis and readers can now judge for themselves the basis for these comparisons and the parallels listed for other sites.

It is clear that there are close connections between the potting traditions at Troy, at Beycesultan and at Aphrodisias. Other sites also share in the ceramic development that is reflected at Aphrodisias during the Late Chalcolithic and Bronze Age periods. Of the 143 shapes represented at Troy, the evidence clearly demonstrates that almost all of them are represented at Aphrodisias as well. Although most of the ceramic evidence from prehistoric Aphrodisias has been presented in the above discussion, there are forms represented at both sites that will have to await further investigation.



346. Large jar with horizontal loop handles and a micaceous black slip 4.3 Acropolis trench 6, Level 4, Bronze Age 3.



347. Tripod burial container 4.7 Acropolis trench 6, Level 4, Bronze Age 3-4.



348. Carian jar, rear view.

The "Carian" Jar by Anna Shaw Benjamin

The Shape

Although the Carian vase was found July 24, 1968, its shape still appears unique in the growing corpus of vases of this period from Anatolia and the Greek East. I call the vase a crater because its size and general profile suggest a variation of the crater form; but the flat base,

cone, conform to none of the known crater types. The entry in the catalogue as a *jar* testifies to the fact that unless parallels are found to form a more complete series, the designation *crater* cannot be insisted upon. The deviations from the normal crater types — the form of the body with its two distinctive parts (the upper inverted cone and the lower tapered cylinder), the base and the mouth which is not fully open — may reflect a local tradition as yet unknown in the published excavation material. Photographs of this jar appear in Figures 348-350 and its drawing can be found in Figure 461, Volume II.



349. Carian jar 68.358, front view.

Context

Trench 6, in which the crater was found crushed but quite complete, was a small trial pit sunk to probe the extent of the Bronze Age settlement on the Acropolis. The disturbance caused by the building and later repair of the stretch of the Byzantine fortification wall which protected the last Byzantine city was deep. Reused column drums connected with the fortifications lay 4.09 m below the trench datum point. A mixture of Late Bronze Age pottery with Iron Age and Byzantine pottery was characteristic of the lower part of the fill of stratum 1. From the base of the fortification wall which coincides with the beginning of stratum 2, the mixture of pottery changed: Byzantine glazed ware disappeared and the mix of Iron and Bronze Ages continued. Right above the crater were traces of fallen mud brick, charcoal throughout the earth and a reddish streak from a course of fallen mud brick. What appeared to be sherds from a coarse pithos lay against the crater which had been crushed flat. One enigmatic feature emerged in the southeast corner of the trench at a level of .40 m below the level of the crater: a single layer of rough stones aligned to form a square corner the sides of which (1.15 m to the east and .40 m to south) disappeared into the south and east walls of the trench. The stones were on a bed of yellowish white ash and are probably to be connected with the Bronze Age burials of stratum 4. I left the excavations after 12 excavating days and did not observe the relationship between the fill around the crater and the fill around the burials as described in Part 2. The context of the crater cannot be interpreted with any certainty. The mixture of pottery with ash and fallen mud brick suggests a dumped fill rather than an accumulated fill. If the area served as a cemetery for the Bronze Age and later settlements, as proposed tentatively in Part 2, then the elaborate decoration of the crater and its scale allow the conjecture that it marked an archaic grave. A function as a grave marker rather than the urn used for the ashes of a cremation burial better fits with the evidence that the earth inside the crushed vase was similar to the earth in which it was found.

Drawing Conventions

The drawing conventions in general reflect the influence of the orientalizing pottery of East Greece called the Wild Goat style, usually dated as beginning about the middle of the seventh century B.C.²⁰⁰ Yet, while the

200. Discussions of the Wild Goat style with the pertinent bibliography for a study of its influences, phases, and chronology are found in three articles of Crawford H. Greenewalt, Jr., in the California Studies in Classical Antiquity, 1968 (1), 1970 (3), 1972 (s). The results of the colloquium in Naples on East Greek pottery bring

ornamentation of the crater in its details employs conventions easily recognized as derived from the Greek East, the overall organization of these details is highly individual.

The major frieze, emphasized by a frame of red and black bands, defines the front and with its roomy spacing of the figures lends a spirit of monumentality to the vase. As expected in the Wild Goat style, there is no incised decoration and the two cheerful, heraldic lions that face each other with a bird between them are painted in a mixture of reserve or outline technique and silhouette. Their faces are in reserve, each with an eye which is a circle with a dot for the pupil. The ear is flame-shaped with a black inside. Hooked lower jaws are open to bare their sharp teeth. They are Assyrianizing lions with pointed noses. Their ruffs in outline technique are decorated with scale-like designs and each scale has in it a red dot. The mane of the lion on the left is differentiated from the body by a dark red zone; of the lion on the right, by a reserved zone with black dots. Their legs are outlined and filled in with black dots while their feet have bird-like claws and stand on a black band which acts as a ground line. The lion on the left, through an odd lack of perspective, appears to have his two front legs attached to his right side.

The surprised bird between the lions is a raptor with sharp beak and claws. Its eye in reserve is a circle with a dot as the pupil. The patterns of the body represent the reality of feathers despite their abstract quality. Although duck and geese are the birds that usually walk about on the East Greek orientalizing pottery, the Anatolian choice of a raptor is a natural local detail in view of the hawk's association with Cybele and/or Ephesian Artemis and the preference for raptors at Gordion of Phrygia where there are over 20 small statues of raptors.²⁰¹

The animal in a rampant position behind the left lion may be a dog despite the long, curling tail. He appears too thin and lanky to be another lion. Dogs sunning or attacking are common on vases of the Wild Goat style.²⁰²

up to 1978 the Bibliography on many of the problems: Les céramiques de la Grèce de l'Est et leur diffusion en Occident, Naples, Institut français de Naples Centre Jean Bérard, Paris, Éditions du CNRS, 1978, iv, 367 p., 151 pl. (Bibliothèque de l'Institut français de Naples: Deuxième série, Publications du centre Jean Bérard, vol. IV). The identification of the differences among the East Greek Ware was addressed again by H. Walter in Samos, vol. 5 (Frühe Samische Gefässe: Chronologie und Landschaftsstile ostgriechischer Gefässe, Bonn, R. Habelt, 1968). R.M. Cook has a convenient summary of the Wild Goat Style in his work Greek Painted Pottery (Methuen, 1972) and summarized his position in his book (Farrar, Straus, Girous, New York, 1972)

- From a private communication of December 10, 1981, from Dr.
 J. Canby then of the Walters Art Gallery, Baltimore Md.
- 202. See the easily accessible example in Boardman, 1969, pl. 46. Greek Art: Its Development, Character and Influence.

The motifs the painter used are, again, common to the Wild Goat style. The false or hook meander is used in a large-scale version on the back of the vase where the only decoration consists of geometric patterns: red and black bands in addition to the hook meanders. On the front of the vase, the filling motifs are used sparingly and in small-scale versions: lozenges with circles in the four quadrants, rough slashes to fill the space between bands. The upper body above the main frieze is decorated with a double-banded cable pattern with circles inside — a motif which by its scale and simplicity does not detract from the central scene. 203

The drawing is bold and sure, at times sloppy. The way the well-known East Greek ideas are used is original. Yet the discovery of more pottery of this period at

203. For the cable motif described from Eastern art, see the easily accessible examples in Boardman, 1964: pl. 46; Cook 1972a: plates 14, 15, and 16a. The last example is incised but closest in design to the crater's motif. See also Cook 1972a:39.

Aphrodisias could well put another perspective upon what seems to be an individualistic talent. Boardman (1980:98-99) assesses this crater as a variant in a provincial manner of the Wild Goat style transmitted far into the interior, and indeed the vase appears to be of local manufacture: its ware is light red (2.5 YR 6/6), the fabric is sandy in feeling, and baked to a hardness of 7 on the Moh's scale. The core is colored unevenly while the concentration of the temper of crushed pebbles is dense. As the Archaic Greek world rose to dominance among the cultures of the Mediterranean area, the ideas expressed in its crafts such as the painted decoration called the Wild Goat style, penetrated to Aphrodisias where there was already a long tradition for the pottery craft, as this book testifies. The crater is a fine example of the cultural phenomenon by which a dominant, vigorous culture absorbs ideas from the cultures it meets and redistributes them. The orientalizing Greek motifs were returned, and translated to the East to bring fresh ideas in pottery decoration to the local potters.



350. Carian jar 68.358 detail of central motif, Acropolis trench 6, Iron Age (Photo: the author).

Dating

The Wild Goat style which the crater imitates is usually dated as spanning the period 650 B.C. to 575 B.C.²⁰⁴ The identification of local trends and of their special characteristics creates a real problem when trying to fix a local artifact to a specific time within this framework. Since there is not yet a series of local archaic pottery at Aphrodisias and the finds have been sporadic and since the disturbed fill of Trench 6 combined with inadequate recording at the time of excavation provides little in way of evidence for chronology, the date of this crater must rest upon a judgment of stylistic elements and/of how long the penetration of the ideas of the Wild Goat style took to reach Aphrodisias. The fresh style and its elements suggest that the painter knew the early and middle phases of the Wild Goat style so that the date of around 600 B.C. stated by Boardman (1980, 98, Fig. 113) will stand until more evidence is excavated from the archaic period at Aphrodisias.

204. Les Céramiques de la Grèce de l'Est..., 1978:319, discussion between E. Akurgal and J. Boardman; J.J. Jully 1978:31ff; P. Courbin 1978:41-42; C. Kardara 1978:66-70; J. Boardman 1980: 98-99; Cook 1969:13-15.

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351. Sardis: conical-footed skyphos. Courtesy of The Archaeological Exploration of Sardis.

Lydian Pottery at Aphrodisias by William E. Mierse

Introduction

In 1973 a 7 m by 7 m extension was made to trench 6 on the north slope of the Acropolis at Aphrodisias. According to Marchese (1976:408) in Level III-D, the excavator, Orhan Gürman, recognized several sherds as Lydian and identified the stratum as a deposit dating to the seventh or sixth centuries B.C. As has already been described (supra), the seventh and sixth century strata divide into several subphases. Unfortunately, it is not clear how the pottery collected from III-D should be classified to relate to these subphases.

The purpose of this short study is to examine those pieces from Level III-D which can be stylistically related to the major categories of pottery produced at the Lydian capital of Sardis and influenced by both local Lydian and foreign developments. A thorough investigation of the pottery was made by this author in July, 1982.²⁰⁵

Some general remarks about the present knowledge of Lydian pottery will be discussed first, and will be followed by an analysis of the plain and decorated ware fragments from Level III-D that have Sardian parallels either for

205. The author wishes to thank the Center for Old World Archaeology and Art at Brown University and Mr. and Mrs. A. Joukowsky for generously providing the funds for this study, Professor Kenan T. Erim for allowing the author to examine the pottery and for supplying much important information and for making the author feel so comfortable during his stay at Aphrodisias, and Professor Crawford H. Greenewalt, Jr. who gave the author time away from his duties at Sardis to visit Aphrodisias and provided much needed advice on Lydian ceramics. The paper has profited from critical readings by Professors C. H. Greenewalt, Jr., Andrew Ramage, and Ann Gunter, but the views expressed remain those of the author.

their profiles or decorative conventions. The discussion is arranged according to types of decoration, and all fragments are referred to by their catalogue numbers.

Lydian Pottery from Sardis

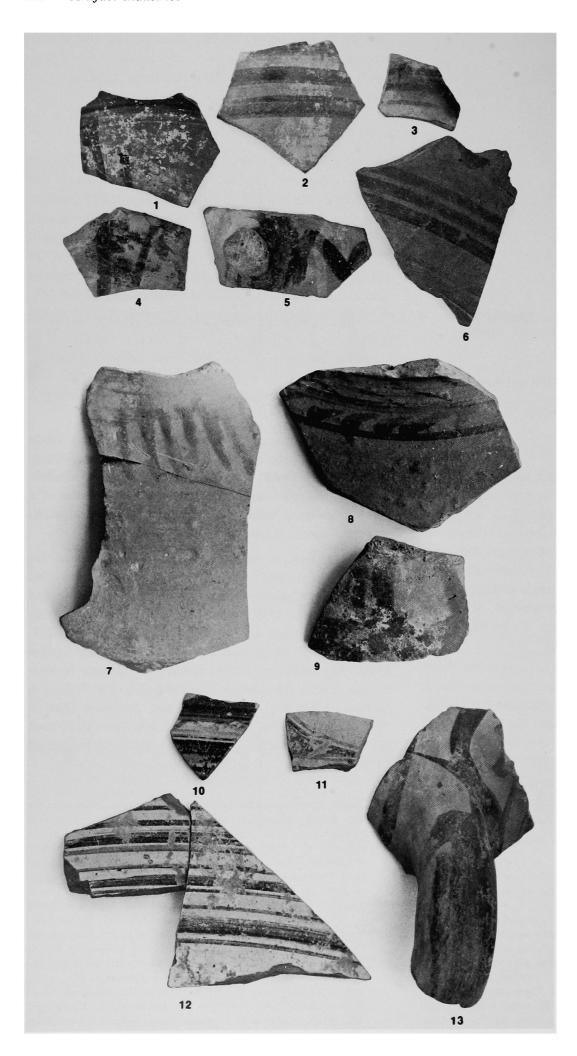
Most Lydian pottery comes from Sardis. ²⁰⁶ There is no comprehensive single study of Lydian ceramics. Major finds have been treated in the annual reports of the Harvard-Cornell excavations since 1958. ²⁰⁷ C.H. Greenewalt, Jr. has studied Lydian versions of Eastern Greek decorative styles in a series of articles (Greenewalt 1970; 1971; 1973). There is no treatment of the most common motifs: black-on-red, bichrome, and streaky glaze.

The clay used in the production of ceramics at Sardis is high in mica. The fabric is fired to a soft texture and to a pinkish orange or grayish pink color. Sometimes there is a gray core, but not often enough to make it a rule. The clay was not well levigated, and there are often small grit inclusions.

Lydian glazes tend to be composed of iron oxide bases such as were commonly used in Greek workshops (Greenewalt 1970:60; Farnsworth and Simmons 1963:389-391). In certain instances, Lydian painters made use of a manganese based black that fired matt black in an oxidizing atmosphere (Greenewalt 1970:58, 61).

The potters at Sardis did borrow some ideas for shapes from vessels produced elsewhere, but they also developed two distinct vase forms. The conical footed skyphos (Figure 351) (Greenewalt 1972:132) is probably derived from proto-Corinthian kotyles (Cook 1960:237-238) several of which have been identified in the Lydian levels. The addition of the conical foot appears to be a Lydian innovation (Greenewalt 1966:133). The lydion, a bulbous shape with a long neck and a conical foot, is easily recognizable (Figure 354) and may have been used to export a specific item from Sardis (Greenewalt 1972:132-133).

- 206. Lydian pottery has been published in the several places over the last century: G. Perrot and C. Chipiez, Histoire de l'art dans l'antiquité, 5, 1890, p. 905; A. Rumpf, Lydische Salbgefässe, in AthMitt, 45, 1920, p. 163-170; H. C. Butler, Sardis I. The Excavations, Part 1: 1910-1914, Leiden, 1922; T. L. Shear, Sixth Preliminary Report on the American Excavations at Sardes, in AJA, 26, 1922, p. 396-401.
- 207. The Harvard-Cornell Expedition began in 1958. Reports published in the Bulletin of the American Schools of Oriental Research and the Türk Arkeologi Dergisi have appeared regularly. Some selected finds are discussed in the general survey of the site, G. M. A. Hanfmann and J. C. Waldbaum, A Survey of Sardis and the Major Monuments outside the City Walls, Cambridge MA., 1975, and in the most recent publication, G.M.A. Hanfmann and W.E. Mierse, Sardis from Prehistoric to Roman Times, Cambridge, MA., 1983. Studies of all the major pottery types found at the site are being prepared at the present for a future publication.

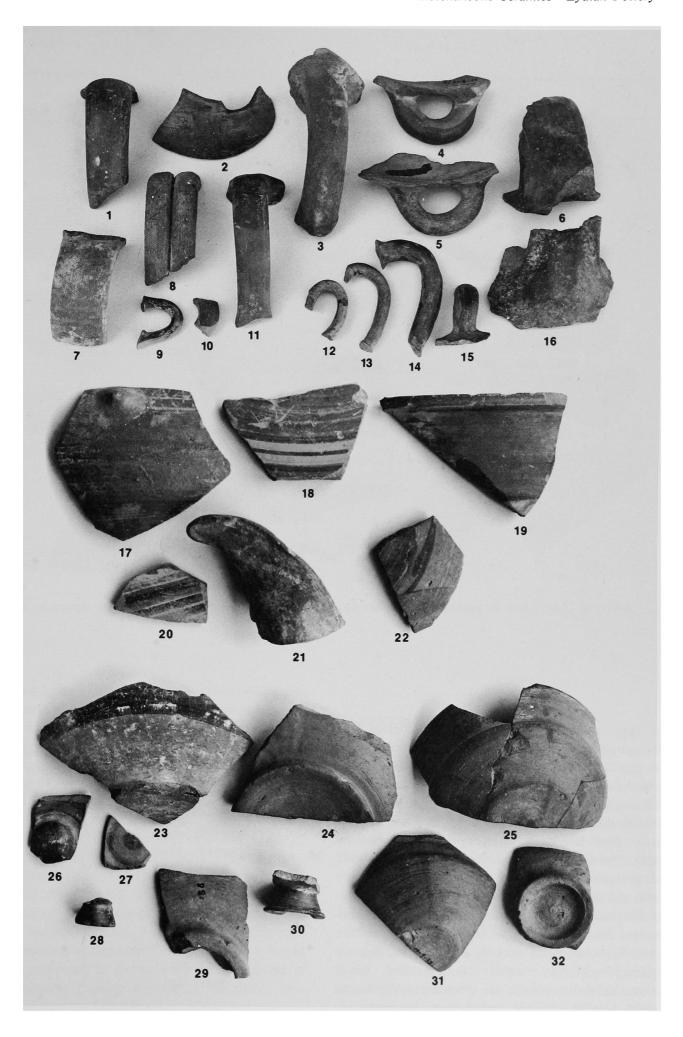


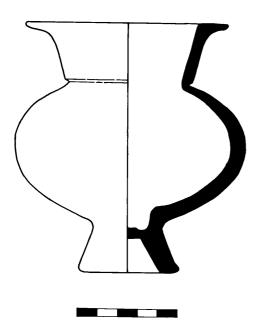
352. Acropolis trench 6 Iron Age and Lydian Ceramics.

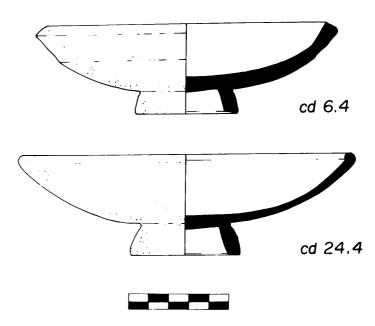
- 1. 6.142 decorated fragment
- 2. 6.143 decorated fragment
- 3. 6.144 decorated fragment
- 4. 6.145 decorated fragment
- 5. 6.146 decorated fragment
- 6. 6.147 decorated fragment
- 7. 6.148 decorated fragment
- 8. 6.149 decorated fragment
- 9. 6.150 decorated fragment
- 10. 6.151 decorated fragment
- 11. 6.152 decorated fragment, « wild goat » style (?)
- 12. 6.125 decorated fragment
- 13. 6.153 decorated handle fragment

353. Acropolis trench 6 - Iron Age and Lydian Painted Wares.

- 1. 6.154 decorated handle
- 2. 6.155 decorated fragment
- 3. 6.156 decorated handle
- 4. 6.157 decorated handle
- 5. 6.66 decorated handle
- 6. 6.158 decorated handle
- 7. 6.159 decorated handle
- 8. 6.160 decorated double strand handle
- 9. 6.132 decorated handle
- 10. 6.161 decorated handle
- 11. 6.162 decorated handle
- 12. 6.163 decorated handle
- 13. 6.52 decorated handle
- 14. 6.170 decorated handle
- 15. 6.164 decorated handle
- 16. 6.165 decorated handle
- 17. 6.166 bowl with a knob lug
- 18. 6.167 bichrome fragment
- 19. 6.57 bowl
- 20. 6.65 bowl-jar
- 21. 6.95 beaked spout
- 22. 6.168 decorated fragment
- 23. 6.114 base
- 24. 6.12 ring base
- 25. 6.94 base
- 26. 6.8 base
- 27. 6.35 ring base
- 28. 6.126 pedestal base
- 29. 6.110 ring base
- 30. 6.115 conical base
- 31. 6.42 base
- 32. 6.169 ring base







354. Sardis: lydion. Courtesy of The Archaeological Exploration of Sardis.

355. Sardis: shallow bowls. Courtesy of Crawford H. Greenewalt, Jr.

In their choice of certain painted schemes, the painters of pottery at Sardis were influenced by styles used in the Greek cities of Asia Minor and by developments in the non-Greek areas of Anatolia. Greenewalt has isolated several local Sardian decorative styles with East Greek traits (Greenewalt 1970; 1971;1973). There are vessels with East Greek wave line patterns (Hanfmann 1963:129). The Lydian bichrome and black-on-red make use of the general vocabulary of geometric decoration current in the seventh century in Western Anatolia. Blackon-red designs include maeander, hatching, and concentric circles. Banded decoration exists in orange, black, and white varieties. What may be especially Sardian are two glazing techniques, streaky and marbled, which though not limited to Sardis, are more frequently found in deposits from the Lydian capital than elsewhere.

Lydian Pottery from Aphrodisias

Gürman collected 170 sherds from Level III-D. They can be categorized in the following manner:

- 1. Undecorated red or grey monochromes, slipped and unslipped 99
- 2. Decorated wares, Lydian styles or styles thought to have been produced at Sardis 23

Streaky glaze 9
White-banded 2
Marbled 2
Black-on-red 1
Orange-on-buff 5
Bichrome 1
Wavy line 3



356. Acropolis trench 6 Iron Age ceramics associated with the dagger excavated in N-Ac. 74-1, 16-7-1974.

The Lydian category includes certain pieces with decorative schemes known to have been used and perhaps invented elsewhere, i.e. wavy line, black-on-red, and orange-onbuff. However, the place of origin for these styles is not certain, and since Sardis was probably a center for their production, it seems likely that the examples from Aphrodisias either came from Sardis or were influenced by Lydian tastes. There are 48 non-Lydian fragments which have been so isolated because they represent types of painted pottery better known from non-Lydian contexts. In some instances, i.e. « Wild Goat » ware cat. no. 6.139, cat. no. 6.152 (Figures 352.11, 357.3 respectively), the fragments belong to styles found at Sardis and considered to have had Sardian versions. For the moment, however, the Sardian product is considered a variant, and it would seem more appropriate to compare the versions found at Aphrodisias against possible sources for the design type rather than against an imitation.

Monochromes

Little can be said about the red and gray monochrome types. The Aphrodisias material shows the same division between unslipped orange and grayish pink wares and wares with a darker red slip that is found at Sardis. The fabric for the pieces from Aphrodisias tends to have mica inclusions. Later pottery from the site displays a similar fabric, which suggests that there was a local source of clay. Only profiles allow for a comparison of shapes. Cat. no. 6.62 (Figure 466.6) has a neck not unlike that of a lydion (Figure 354), but its exterior is burned which might indicate that it was used for cooking, not the common use for lydions at Sardis. The bowls represented by cat. nos. 6.127, 6.82, and 6.63 (Figures 465.1; 465.10, 465.47, respectively) exemplify the shallow bowl form commonly found in red monochrome at Sardis (Figure 355).

Decorated Wares

Streaky Glaze

The Aphrodisias streaky glaze sherds are all from vessels whose shapes are also found in the Lydian strata at Sardis. Cat. nos. 6.126 and 6.115 (Figures 353.28, 353.30, 465.12, 468.8 respectively) are conical feet. Too little of the top remains of cat. no. 6.126 to be certain whether it belongs to an open or closed vessel. Cat. no. 6.115 has traces of glaze on the top which suggests that it comes from a skyphos (Figure 351 shows a typical Lydian streaky glaze skyphos). Cat. no. 6.164 (Figure 353.15) is a small handle which may come from a skyphos.

Cat. nos. 6.84 (Figure 465.27) and 6.181 are fragments from Achaemenid or Ionian bowls. This is a type of bowl not usually found with streaky glaze decoration at Sardis. Cat. no. 6.177 is the rim to a shallow bowl, perhaps the dish of a fruitstand. Cat. no. 6.11 (Figures 353.29, 468.4) is a ring foot to a shallow cup, and cat. no. 6.6 (Figure 468.2) is a pedestal base for a bowl. Cat. no. 6.57 (Figures 353.19, 467.5) may be the rim of a crater.

Streaky glaze decoration was easy to produce. The glaze is diluted iron oxide based pigment. It was painted over the surface of the vessel, sometimes onto a slip which acted as a ground. The strokes could be either quick and loose or long and deliberate. Often the glaze was allowed to thin so that the brush began to drag the glaze which became thinner and thinner until at spots, the surface of the vessel showed through. On other examples, the glaze was kept even, and the surface attained a rich hue. The color combinations most common on pieces from Sardis are a metallic sepia, black, and red, with in-between tones of yellow, cadmium, aureolin, brown, tan, and orange (Greenewalt 1966:120-122, 127-128).

Streaky glaze decoration is known outside of Sardis and the Lydian area, but the examples from the East Greek world seem to be more the result of misfiring or misapplication of glaze than intentional streaky glaze decoration (Greenewalt 1966:128; Walter 1957:46-49; Walter and Vierneisel 1959:28, pl. 62i 1-2). Those from Gordion are much like the Sardian products (Kohler 1980:67; Sams 1979:15). Streaky glaze sherds appear at Sardis in contexts of the early seventh century B.C. The style continued to be produced into the first half of the Hellenistic era at the site.

Among the Aphrodisias pieces, cat. no. 6.84 (Figure 465.27) is streaked with browns which range from dark brown to an orange brown. Cat. nos. 6.181 and 6.177 have a brown exterior streaking. Though brown tones do occur on Sardis examples, they are not the most common color variations for Sardian streaky glaze.

The Aphrodisias collection of streaky glaze sherds contains two examples from different vessels of streaky glaze applied to Ionian of Achaemenid bowls and three pieces from three distinct vases which are streaked with tones of brown. There may have been produced at Aphrodisias a streaky glaze ware, which included different colors and different shapes than were being made at Sardis.

White Banded

Cat. nos. 6.130 (Figure 465.19) and 6.184 may be treated as belonging to a subgroup of streaky glaze. They each come from the lips of skyphoi. Cat. no. 6.130 is painted a matt-black on both the interior and exterior. Two thin whitish bands encircle the lip on the exterior. Cat. no. 6.184 has a brown streaky glaze on both the interior and exterior. The interior is further decorated with three thin horizontal white bands that run parallel to the lip. There is a single band on the exterior.

White banded decoration is common on skyphoi and craters at Sardis from the sixth century. Examples of the decorative convention are also known from Old Smyrna (Cook 1958:29, pl. 4a; Isler 1978: fig. 6). Sometimes the white bands are accompanied by white dots. The black matt example is not so usual for Sardis where white bands are most often painted onto vessels with streaky glaze. Its presence might indicate that Aphrodisian workshops were also producing banded skyphoi. *Cat. no.* 6.184 is again painted with the brown streaky glaze and might further strengthen the argument for local manufacture.

Marbled Ware

Marbling is both a simple and a distinctive method of decoration. Hanfmann considered it a possible local Sardian or Lydian invention (Hanfmann 1945:579). Perrot and Chipiez suggested that it was used to imitate core made glass vessels.²⁰⁸ More recently, Boardman has stated that it was made to resemble beaten copper (1980:99). Greenewalt (1966:127) considered marbling to have been designed purely for abstract colorful visual decoration.

Two fragments in the material from Aphrodisias can be identified as coming from marbled vessels, cat. nos. 6.138 and 6.137 (Figures 357.1, 357.2 respectively). Cat. no. 6.138 is a body fragment from an open-shaped vase the interior of which was painted with black and red streaky glaze. The exterior is marbled with a vertical zigzag pattern of black, white, and red. The marbled surface has a red cast. Cat. no. 6.137 is also a body fragment from an open vessel with a slipped interior. The exterior is marbled with vertical stripes, but the surface has a darker tinge than Cat. no. 6.138. The reserve bands of white on cat. no. 6.138 might indicate that it was slipped first.

Marbling was done with a more concentrated form of the same iron oxide glaze that was used for the streaky glaze. It was applied with single or multiple brushes, sometimes over a white or cream slipped surface. The glaze was painted onto the surface thickly so that there was some degree of resistance which allowed for a more even distribution of the glaze than was often the case with streaky glaze. The three stage firing process was used, the same as for Greek painted wares. The firing produced a vessel surface with a richness of color variations including brickred, sepia, and black with in-between tones of yellow, tan, or orange (Greenewalt 1968:141).

The most common forms of marbling are the zig zag patterns with overlapping bands and often with reserve areas between the painted stretches. Overlapping pendant hooks are also known. Marbling can occur in combination with other decorative styles such as rays, geometric designs and figural elements (Greenewalt 1968:142). Only select shapes were painted in the marbled manner, the skyphos, the lydion, the omphalos phiale, the oinochoe, the strainer-spouted jug, the lekythos and the lebes being the most usual.

The Aphrodisias fragments come from open vessels with thin walls. The omphalos phiale could be decorated with marbling on both the interior and the exterior, ²⁰⁹ but the thinness of these two sherds would suggest that they come from skyphoi.

Hanfmann has dated the earliest appearance of marbling to about 600 B.C.; Greenewalt would place first manifestation of the style somewhat later, about 575 B.C. (Greenewalt 1966:144n; *Idem* 1972). The decorative convention continued to be used at Sardis until the mid-fifth century (Greenewalt 1966:150). Gordion, Daskleion, and Old Smyrna all have yielded marble wares (Greenewalt 1968:142 no. 6; Sams 1979:15), but they do not appear to have been produced in places outside of the Lydian control; Aphrodisias might well have been producing its own marbled pottery, but considering that this was probably a finer ware, it may be just as likely that these two fragments come from imported skyphoi brought to Aphrodisias from Sardis.

Black-on-Red

Cat. no. 6.143 (Figure 352.2) is the one fragment identified as an example of black-on-red. It is from the rim of either a flaring bowl or a fruitstand. The decoration consists of thin bands of black arranged in concentric circles which encircle the exterior of the dish and its rim. What remains are the parallel lines of the encircling bands.

This particular type of black-on-red convention is

209. There is an example in the Kocabaş collection in Istanbul n° 3334 and also one from Gordion n° 3376b1173.

well attested by the finds from Sardis. An earlier black-on-red scheme which makes use of designs drawn from the general geometric vocabulary of Western Anatolia is also known from Sardis. The black-on-red variety to which the Aphrodisias piece belongs is found at Sardis in the later seventh century and sixth century strata. Usually the decoration is reserved for fruitstands and bowls. The circles or spirals are always drawn with care (Figure 358).

Black-on-red decorated bowls are found among the pottery assemblages which may have formed part of the paraphenalia for a ritual meal. Such collections have been discovered in sectors of the Lydian city, and Greenewalt has argued for a sixth century dating for these groupings. He has suggested that the black-on-red dishes were produced locally (Greenewalt 1976:17).

Black-on-red painted pottery is not uncommon elsewhere in western Anatolia (Mellaart 1955:119-121). Examples have been recovered at Smyrna (Özgünel 1979: pl. 281) and in the southwest near Pisidia (Sams 1979:13). Compass drawn circles decorate pots in the Phrygian area (Sams 1978:228-229). There was some production of pottery with black painted designs in Caria itself during the seventh century (Özgünel 1979a:103, nos. 30, 31).

Sardis black-on-red is distinguished by the arrangement of the bands into groups or a single spiral with some variation in the thickness of the individual lines. The bands or groups of bands are spaced across the interior onto the rim and the exterior of the vessel at regular intervals. The evenness with which the lines are painted, the systematic placement of the bands on the interior surface, and the consistent use of a black pigment over a red slip make the fragments with this type of black-on-red decoration easily recognizable. The East Greek Ionian cup with black banded interior decoration, displays a more regular variation of thin and thick hoops arranged into an alternating pattern than is common for the Sardis type (Walter-Karydi 1973:23-24, nos. 340, 380, 345, 379, 382-418; Isler 1978:78, fig. 10-11).

The single sherd from Aphrodisias could well come from a Sardian pot. However, the Carian potters were using black painted designs. It would not have been hard to adapt a concentric circle or spiral motif used at Sardis and produce a painted pottery similar to the Sardian red-on-black.

Orange-on-Buff

Quite common among the finds in the Lydian levels at Sardis are sherds which are decorated with orange or reddish pigment painted over a neutral background or combined with black and placed on a slipped surface. Almost always this is an exterior type of decoration often used to emphasize the neck and side of a vase. The decorated portion may be limited to just a few randomly

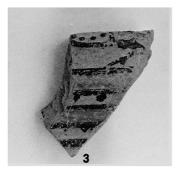














- 357. Acropolis trench 6 Iron Age and Lydian artifacts.
- 1. 6.137 decorated fragment of « marbled » ware
- 2. 6.138 decorated fragment of « marbled » ware
- 3. 6.139 decorated fragment of wild goat » style
- 4. 6.130 bowl or jar
- 5. 6.3 bowl
- 6. 6.136 rhyton (?) fragment
- 7. 6.125 decorated jar fragment

placed bands, or it can be the entire top half of the vessel which is coated in paint (Figure 359), the result of dipping. Among the Aphrodisias collection are several sherds with traces of orange bands on neutral background. They are too small to allow for any identification of the pattern, but they relate to the type known at Sardis.

Cat. no. 6.124 (Figure 465.3) is a fragment from the body of a closed vessel. The orange is dribbled onto the exterior surface. Cat. no. 6.147 (Figure 352.6) is also from a closed shape; here the orange pigment belongs possibly to a circle motif, too little remains to be certain. Cat. no. 6.35 (Figures 353.27, 468.6) is a ring base to what seems to have been an open vase. In this instance, the decoration is on the interior, orange concentric circles. Cat. no. 6.144 (Figure 352.3) is discolored, probably due to burning. The orange paint was used to make concentric circles around the neck. Cat. no. 6.125 (Figures 352.12, 468.30) is the shoulder of a closed pot, perhaps an oino-choe, treated with petals whose leaves radiate out from the neck. In this case the petals are gray not orange, however, they are a type well attested to in the body

of orange decorated wares at Sardis. Cat. no. 6.179 is a sherd from a closed vessel with a single band of orange running on the diagonal.

The use of red-orange as a pigment for painting appears at Sardis on sherds from the levels of the midseventh century. In the later seventh century strata orange pigment is standard for many of the orientalizing conventions such as the zigzag pattern so often found on the necks of craters and hydriae. An orange decoration continues into the early Hellenistic period.

Orange and red-orange decoration is not limited to Sardis. On Samos, craters and Ionian cups were decorated with reddish brown bands on white ground (Walter 1957: 46-47). Red banded wares appear to have been popular at Tarsus during the neo-Assyrian period (700-600 B.C.), (Hanfmann 1963:59). Even five hundred miles to the east of Sardis, in north-central Anatolia, Durbin (1971:104) has found examples of pieces from Sivas and Tokat which are decorated in matt paint on pinkish brown and red surfaces with patterns of wavy line and radiating rays which are commonly painted in orange on Sardis sherds.

The variety, the length of time during which the patterns and the color combinations were used, and the extensive area over which one can find the versions of this type all suggest that orange-on-buff ware had a wide distribution with many local centers. Probably Aphrodisias was just one more place producing its own brand of the pottery style.

Bichrome

Cat. no. 6.125 (Figures 352.12, 357.7, 468.30) is composed of several joining fragments that form the side of a large closed vessel about 40 cm high. The exterior decoration consists of bands of yellow-brown color, probably an iron oxide pigment, which alternates with reserve areas of white slip. In the reserve spaces are painted zigzags also in yellow-brown. The application of the paint is somewhat careless, and there is much variation in the concentration of the paint-per-stroke. The strokes of the brush are clearly visible. On certain of the bands, the edges are painted black which helps to set-off the band.

Though nothing from Sardis can parallel this piece, the particular individual elements can be recognized on Lydian decorated pottery. The shape would suggest a dinos. In many instances, the variation in the brushing on of the paint can be compared to the application of streakly glaze. The color, though not common, is not unknown at Sardis. Certainly the zigzag pattern has been noticed on Sardian orientalizing pieces, and it appears as filler ornament on one major figural vase from Sardis

(Hanfmann 1945:574). The use of a white undercoat is common for the Sardian « Wild Goat » style (Greenewalt 1970:58) and is also the primary coat for some marbled and streaky glaze ware.

The sherd might well come from a bichrome Lydian export. The lack of an exact parallel should not be an argument against considering the piece as Lydian. Nothing else among the finds at Aphrodisias suggests that it is a single example of a more common type. The fact that the individual features are all known at Sardis suggests that only the arragement is novel, not the motifs.

Wavy Line

Four sherds belong to the wavy line class. Cat. nos. 6.146 and 6.153 (Figures 352.5, 352.13 respectively) are handles from what would have been closed vessels, probably hydriae or amphorae. Cat. no. 6.180 is part of a shoulder and neck. Cat. no. 6.182 is a body sherd. These are all painted with bands of pigment which vary in color from a brownish-purple to a grayish-black. The preserved fragments of decoration suggest that the lines are wavy rather than zigzag.

Hanfmann has identified the wavy line as an Eastern Greek decorative convention which developed during the Middle to Late Iron Age (Hanfmann 1963:130, 140, pls. 1620, 1622; 1956:180). At Sardis wavy line patterns were used to decorate amphorae and hydriae. The wavy line convention is found not only on the west coast of Asia Minor and at Sardis but also as far east as Tarsus.



358. Sardis: Typical black-on-red decoration. Courtesy of The Archaeological Exploration of Sardis.



359. Sardis: Orange-on-buff decorated Lydian pottery. Courtesy of The Archaeological Exploration of Sardis.

Hanfmann has suggested that there were several centers for the manufacture of this variety of painted pottery. Probably Aphrodisias was also producing its own wavy line style of painted pottery.

Conclusion

The lack of clear stratigraphic contexts makes it impossible to establish any firm chronology for these pieces of pottery. The existence of a knife fragment (cat. no. 6.200 Figures 356.13, 466.36) and the skeleton of what may be a dog (Figure 121, p. 124), both from Level III-D, presents the tantalizing possibility of a ritual puppy dinner such as those found at Sardis. These dinners as they are known at Sardis usually are evinced by collections of four specific vessels: a black-on-red shallow bowl or stemmed dish, a gray coarse ware pot or vertical single handled jug with gold dust slip, a skyphos, and a trefoil oinochoe (Figure 359 shows one such collection). A few knives have been discovered and also some fragments of dog skeletons (Greenewalt 1976:17-18). Several of these groups have come from the same

area of the city and the same levels as examples of Carian graffitti (Pedley 1974:97). The pottery fragments found in association with the knife at Aphrodisias have been determined, and they do not agree with those found in the ritual dinner assemblages at Sardis. However, III-D did contain the rim fragment of a black-on-red bowl cat. no. 6.43 (Figure 466.5), plus the body sherd from a grey coarse ware cooking pot (uncatalogued). It is possible that the sherds discovered in association with the blade were not part of the original puppy dinner deposit or equally possible, the ritual as practiced at Aphrodisias might have been different from what is known at Sardis. The present information is too scanty to allow for more than the mention of the possible existence of such a practice at Aphrodisias, but it is interesting to note since the ritual dinners have been thought of as a phenomenon originating in Caria (Greenewalt 1976:42; Pedley 1974:98).

Aphrodisias potters were producing painted pottery using a vocabulary drawn in part from Sardian decorative conventions. Some of the motifs were in use over a large enough area (ie. orange-on-buff, wavy line) to assume that the Aphrodisias painters could have been inspired by

one of several sources. Sardis may have been a center for the ideas since both orange-on-buff and wavy line were manufactured there, but there is no compelling evidence for the attribution. Streaky glazed wares are easily produced both with intent and without it, and there is no reason to assume the technique was introduced from a foreign source. Since the decorative convention existed as a distinct and popular style at Sardis, more so than elsewhere in western Anatolia, it might be safe to suggest that in part, a Lydian element was active in the development of the style as a decorative type at Aphrodisias. Marbling is a definite decorative technique. Its rarity outside of the Lydian area would seem to indicate that Aphrodisian painters borrowed it from Sardian potters, or that the two fragments may come from imported vessels.

The Lydian style pottery is only about 12 % of the total collected from III-D, and, therefore, it does not seem correct to try and use it for dating purposes for the entire assemblage. However, Gürman did identify the level as seventh or sixth century based on the Lydian pottery. Of the pieces, only the marbled ware has a possible terminus ante quem defined by archaeological contexts which is ca. 600 B.C. The single sherd of « Wild goat, » cat. no. 6.139 Figure 357.3, is too small to provide much information, but it cannot date later than the beginning of the sixth century (Cook 1960:116). The other Lydian style material can all date to the sixth century too. It would seem that Gürman's observation holds true. Based on the stylistic evidence of the Lydian pottery, Level III-D dates to the late seventh or early sixth century B.C.

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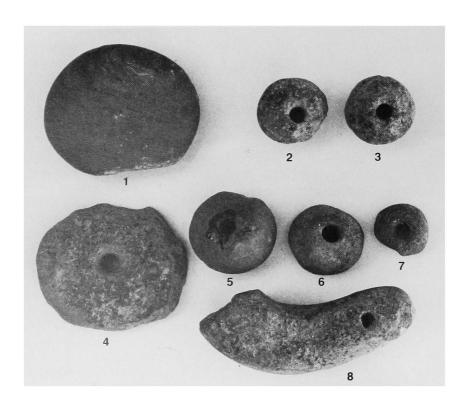
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The objects illustrated in this section on figs. 351-360 are described in the catalogue, vol. II, p. 642-649.



360. Acropolis trench 6 - Iron Age and Lydian artifacts.

1. 6.140a stone disk

5. 6.108 spindle whorl

2. 6.129 spindle whorl-weight

6. 6.109 spindle whorl

3. 6.141 spindle whorl

7. 6.117 spindle whorl

4. 6.140 pierced disk

8. 6.30 loom weight



361. Inscribed fragment 67-530, unstratified find.

An Enigmatic Early Inscription from Aphrodisias 210 by Frederick M. Lauritsen

The inscribed sherd (cat. no 67-530) shown in Figures 361, 504, was found during excavations of the Odeion area in 1967. The context of the find was unstratified fill of unknown origin, though circumstantial evidence indicates it was most probably brought in during the Byzantine period. The sherd is unique and no joining fragments or other parts of the vessel were found. It is unclear if the sherd was manufactured and inscribed locally, or was imported into Aphrodisias from elsewhere.

Martha Joukowsky has analyzed the sherd and has concluded, based on style, texture, composition, and comparable ceramics, that it dates to the 6th century B.C.²¹¹ Thus, the inscription should be Late Iron Age.

210. Permission to publish this inscription has been generously granted by Prof. Dr. Kenan T. Erim, Director. Dr. Martha Joukowsky is responsible for the photographs, drawings and pottery analysis. I wish to thank my wife and Dr. Sarah Keller for their assistance in proofreading and editorial comments.

211. Personal communication.

From the position of the extant characters, it is probable there was only one line, now composed of seven complete characters and part of an eighth. It is not possible to determine the length of the original inscription. The characters were made with a pointed instrument and were inscribed before firing. Two of the eight characters appear to be identical which, along with the simplicity of shape, strongly suggests the script is alphabetic. Thus, the characters might more appropriately be called letters.

The script is totally unknown and bears no resemblance to other ancient scripts, deciphered or undeciphered.²¹² The sherd, or photographs of it, has been shown to a number of scholars, none of whom can offer an explanation.²¹³ It is not even known if the inscription is to be read from right to left or left to right. There are no clues as to the content of the graffito: whether it is a name, unit of measure, location, destination, commodity, or any of other innumerable possibilities.

- 212. The most likely comparison would be made to west and southwest Anatolian scripts. A comparison with Lydian and Lycian shows no similarities. Cf. Handbuch der Orientalistik. Erste Abteilung, Der Nahe und der Mittlere Osten. Zweiter Band, Keilschriftforschung und Alte Geschichte Vorderasiens. Erster und Zweiter Abschnitt, Geschichte der Forschung, Sprache und Literatur. Lieferung 2, Altkleinasiatische Sprachen, Leiden/Köln, Brill, 1969, Lycian, p. 374; Lydian, p. 400.
- 213. These include Drs. J. Teixidor, A. Boegehold, J. Reynolds, A. J. Sachs, and F. M. Cross.



362. 67-530 Inscribed fragment. Estimated neck diameter 0.060. Upper jar/jug, wheelmade fragment of red ware 10R5/8; prominent wheelmarks on the interior, core evenly red at the top, discolored to a grayish brown 10YR5/2 at the bottom.

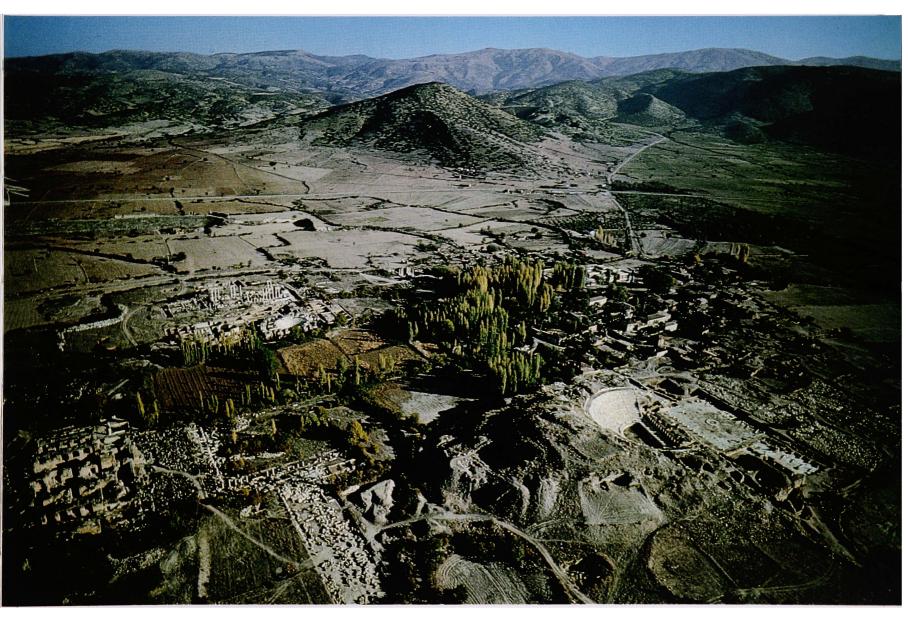
The inscription is here offered to the scholarly community, with all available information, in hopes that someone may be able to offer suggestions of lines of enquiry to pursue. We can also hope that future excavations at Aphrodisias or other sites in southwestern Anatolia will add examples of what is now a unique specimen of a presumed epichoric alphabetic script. At least, this provides another piece of evidence for pre-Greek settlement in Asia Minor.

PART 5

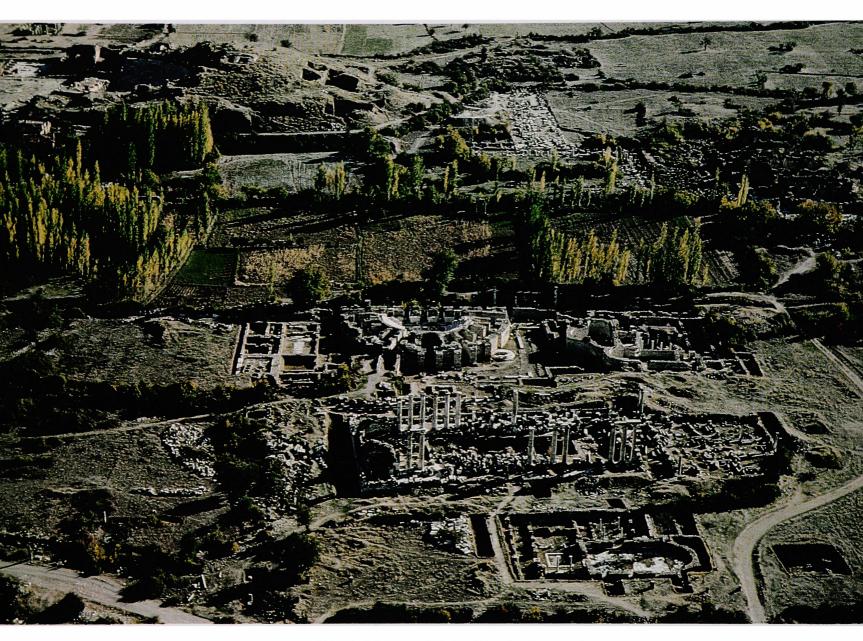
INTER-SITE STUDIES

« The archaeologist makes a valuable distinction between culture, a general attribute of man, and cultures, each a specific adaptation of a human group to the particular problems of its environment. »

Colin Renfrew (1972:4)



363. Aerial view of Aphrodisias looking northeast. Photo: David L. Brill.



364. Aerial view of Aphrodisias looking south.

N.B. The trenches cut into the Acropolis mound. Photo: David L. Brill.

Inter-site Studies

Inter-site relationships are too vital a component to be omitted completely as a goal for archaeological reports. Many theories are constructed to illustrate cultural interaction but it is improbable or irrational to expect that real interconnections can be maximized without the help of written records in the traditional sense, and in Anatolia we do not have enough of this kind of information to link up excavated sequences securely.

The study of intercultural and chronological alliances must be based on the present state of the variables that are a part of the archaeological record. These limit the range of alternatives at our disposal. Most studies of intercultural relations in prehistoric Anatolia have been in the form of pottery alliances that suggest there were contacts and therefore synchronisms between various sites. We are all aware that these data are relative and are insufficient for absolute correlations — distortions cannot help but exist. 214 Even with our imperfect understanding of Anatolia in these periods some pattern of interconnections might be expected, but there are only three logical data bases that can serve for the study of this material which must 1) correspond to the same time period; 2) be viable; 3) and be satisfactory to our past and present knowledge of archaeological information.

In establishing intercultural relationships we will draw heavily upon analogies of excavated material from other sites. The interdependent problems to consider are the comparative site correspondences. This presentation lets us examine the culture sequence at different sites but it must be stressed that there was a spatial or regional focus to the various cultures of Anatolia — the Beycesultan-Aphrodisias culture in the southwest; the Kum Tepe-Troy culture in the northwest; the Tarsus-Mersin culture in the southeast; and the Kültepe-Alişar Hüyük-Boğaz-köy cultures which have a central Anatolian focus.

There are chronological overlaps among these, so the simplistic error that cultural assemblages are the same thing as chronological periods cannot be avoided. (Different cultures and ceramic morphologies had different durations but these factors are still poorly understood.) We

214. For scholars' analyses of these factors, the interested reader should refer to the chronological analysis given by M. Mellink (1965:101ff), and by J. Mellaart (CAH 1971a, b, 1974). For the Early Bronze Age studies of ceramic alliances, see D. French (1968); C. Podzuweit (1979); W. Orthmann (1963); H. Goldman (1956), and a most important publication by J. L. Huot (1982). For the Middle Bronze Age analysis W. Orthmann's (1963) studies are particularly noteworthy, and for Beycesultan and the southwest in particular, Mellaart (1970c).

cannot answer definitively the problem of where to place the dividing lines in the Southwest between the Anatolian Later Neolithic, Early Chalcolithic, Middle Chalcolithic; between the Chalcolithic and Early Bronze Age; the Early and Middle Bronze Ages; the Middle and Late Bronze Ages: or the Late Bronze and Iron Ages, but theoretically, these broad divisions do exist.

The relationships between stylistic cultural evolution and firm chronology are far from clear. At best we can only use the existing chronological framework and hypothesize the length of time needed for the diffusion of specific ceramic traits. The data and broad cultural affinities can, in some cases, be tested against the results from Aphrodisias. Abstracts will be given for sites that are either essential to Aphrodisias' cultural correspondences, or essential for clarification and integration of the site within the broader scope of Anatolian chronology. For example, traditional Anatolian alignments correlate the Early Bronze Age of Troy to Cilician developments; Middle Bronze Age to Central Anatolia; and the Late Bronze Age to Cilicia — or to the Aegean for the Western Anatolian sequence. But it cannot be discounted that an area or a site may be more conservative than another and may hold on to cultural factors for longer periods.

The pottery from Aphrodisias that can be attributed to the Late Neolithic (?), Late Chalcolithic, Bronze and Iron Age periods comes from an excavated sequence that can be used to correlate the material by a direct means: I studied pottery and artifacts from other Anatolian sites plus those further afield in the Eastern Aegean, Thessaly and Macedonia where a few comparable assemblages were found. Whenever there was enough material to warrant it, entire assemblages were compared — sites with one or two similar features were not considered.

From the published materials that I used as a base grew the correspondences suggested between Aphrodisias and other sites in terms of constant shapes and decoration motifs — these will be presented as symptomatic of a « certainty » in the ceramic environment. The site evidence is summed up at the end of its abstract as a continuum ranging from certainty to uncertainty. We have divided this range into separate stages of certainty (60-80 %), uncertainty (30-60 %), and risk (0-30 %). Thus a rough percentage factor can be offered for many of the sites under discussion. Theoretically, certainty implies probable or possible contact between Aphrodisias and the site under discussion; uncertainty implies that contact was indirect, and risk implies that there was little or no contact between Aphrodisias and a site with a contemporaneous

development. There exist many alternative strategies within the ceramic study that can be termed certainties (such as the analysis of thin sections) — a maximization of results can be attained through following any one of a number of paths. Each chronological period will be summarized by area and by brief site descriptions.

The Aphrodisias Late Neolithic (?)²¹⁵ will be involved primarily with Hacılar. This is followed by a brief examination of the time gap between the Anatolian Late Neolithic and Late Chalcolithic. Late Chalcolithic abstracts will then be presented for Beycesultan, the Elmalı Plain, Cilicia, the Konya Plain — the Anatolian northwest those in the Aegean, in Thessaly and Macedonia. Because there is no dividing line between the end of the Late Chalcolithic and the emergence of the Early Bronze Age, there may be overlaps in these discussions between the two periods. The Early Bronze discussion begins with Western Anatolia and the Aegean, and then a review of Cilician and Konya Plain sites; this is followed by a brief treatment of the Middle and Late Bronze Ages. Developments in Central Anatolia and Cilicia are examined first and then there is a move to the west for alignments with the Aegean Coast and Troy, and then closer to home to Kusura and Beycesultan. The last site to be reviewed will be Sardis for Late Iron Age affiliations.

Terminology

Due to the lack of precise dates for prehistoric Anatolia, throughout the course of this volume, terminologies of three different chronologies are used. These divisions are dependent upon cultural factors. Reference made to Anatolian chronology is to « Anatolian Early Bronze II » or « Anatolian EB II » — thus « Anatolian » is followed by capital letters for cultural periods, and in turn by Roman numerals for their divisions. The second, the Aphrodisias chronology, is either written out or given initials followed by Arabic numbers — Late Chalcolithic 4 = LC 4, Aphrodisias BA 2 = Aphrodisias Bronze Age 2. The third, the Beycesultan nomenclature (Lloyd and Mellaart 1962), is designated by cultural periods using capital letters, and then Arabic numbers, i.e., Beycesultan Early Bronze II = Beycesultan EB II. This should be noted for alignments between sites. For example, Anatolian Early Bronze IIIA has alotted to it Aphrodisias Bronze Ages II-III, Beycesultan EB II, and Troy II. Traditional cultural assignments for site levels such as Troy, Troy I, Troy II, and so on, have been adhered to, but are often placed into a tentative « nationalized » Anatolian scheme. For these synchronisms, see Table 139, p. 476.

215. Of course, this term is used differently in the Aegean than in Anatolia and has different chronological implications. The following discussion is *not* intended to be exhaustive; it is meant to introduce the student to the culture province of western Anatolia and to give but a brief idea of contemporary developments elsewhere. Emphasis is on western Anatolia — only a *summary* is offered for sites lying to the E of this cultural area (to impart a sense of completeness to this work). Geographic positions of sites used for comparative analysis can be found on Figure 4.

THE LATE NEOLITHIC (?)

Hacılar

Hacılar (Mellaart 1970) is located in the southwest Anatolia, 26 km southwest of Burdur in an intermontane valley of the Taurus mountains. As the crow flies it is roughly 80 km to the east of Aphrodisias. It was discovered in 1956 and excavated by James Mellaart from 1957-60. The site measures 135 m in diameter and is a low mound only 5.00 m in height. Thirteen building levels, I-XIII (I latest to IX earliest) were uncovered in the eastern half of the mound. An aceramic Neolithic culture was found to have ended ca. 6740 B.C., followed by a gap of about 1000 years. After this period of abandonment, the site was reestablished by a Late Neolithic folk. The relative radiocarbon chronology for the Late Neolithic at Hacılar is comparatively certain 216 and for documentation of the material from Aphrodisias, I have relied almost completely on James Mellaart's (1970) well-stratified sequence of levels published in Hacılar I. The Late Neolithic period represents a settlement that continued for 800 years.

Of special interest to us is what Mellaart terms the « unbroken sequence » of the Late Neolithic Levels II-IX, but of particular interest is Level VII. Mellaart concluded that the architecture of Levels IX-VI was comprised of some 50 houses constructed both on the mound and on virgin soil. The houses were two-storied rectangular structures measuring from 6.5 m-10.5 m in length and 5.5 m in width. Wall superstructures measured 1 m in thickness

216. Dates (Mellaart 1970:93) given for the Hacılar sequence are based on B.C. 5568 half-life as follows:

Level	Sample	Material	Date
IX	P.31A	Charcoal	5393 ± 92
VII	BM-125	Charcoal	5820 ± 180*
VI	BM-48	Charcoal	5590 ± 180
VI	P.313A	Charcoal	5399 ± 79
IIA	P.326	Charcoal	5219 ± 131
IA	P.315A	Charcoal	4976 ± 95

^{*} Ibid., Mellaart places this calibrated date to 5900 B.C.

and were composed of square, oblong or flat bricks set on stone foundations. They were covered with layers of plaster; floors were also coated with a polished clay plaster. House entrances were through wide doorways positioned in the middle of the long axis of the room. Features associated with these structures were ovens, hearths, screen walls, and grain storage bins that were placed along the walls.

The standard pottery was monochrome and burnished. Shapes included cups, bowls, and jars. In Hacılar IX-VIII there were light gray and buff wares while Hacılar VII-VI had characteristic red-brown and buff-painted wares. At this time bowls, jars, and theriomorphic vessels were added to the corpus. In Hacılar IX-VI « fat lady » figurines thought to have been domestic cult statues were found in houses; spindle whorls from Hacılar VI suggest that spinning and weaving were practiced, and in this same level carved white marble bowls were found. The chipped stone industry consists of the usual tool kit and includes raw materials of flint and obsidian.

In Aphrodisias Level VIIIC, Pekmez trench 2, there is a ceramic assemblage considerably different from that recovered from the Late Chalcolithic deposits. In my personal opinion, I interpret this difference to be a result of an inter-site connection between Aphrodisias and the Hacılar horizon.²¹⁷ In a 1977 comparative study of the Hacılar collection stored at the British Archaeological Institute at Ankara, I examined roughly 1500 sherds of various Hacılar levels.²¹⁸ The fragments ascribed to Hacılar VII had the strongest affinities with Aphrodisias material in coloration, decoration-ware-fabric, and shape-form correspondence²¹⁹ — indicating that they were within

- 217. The pottery which predominates Level VIIIC at Aphrodisias is unlikely to be Late Chalcolithic its ware-fabric and decor are too different; therefore it should be aligned and dated to an earlier period than the Late Chalcolithic. In our search for the origin of these wares, we found that most of the Aphrodisias shapes were not new to southwestern Anatolia that they were derived from a very similar tradition to that of Hacılar, and probably from Hacılar itself.
- 218. Hacilar ceramics were not classified by ware-fabric for the divisions of pottery types, but rather classes were assigned from surface colors which were generally slipped. The brown-red wares of Aphrodisias (Figure 375) look like those of Hacilar Level VII, because this is the level associated with the greatest amount of mottling. The fabric and surface finish of the Aphrodisias wares bears a close resemblance to those of Level VII at Hacilar, the inclusions appear to be slightly larger, and the cores darker (Aphrodisias PTa ware, see Figure 275).
- 219. Analogous shapes that are directly related to Hacılar shape-forms are CH14, a loop cordeye handle; CH15 a small horizontally-positioned cordeye handle. And flat bases are: B79; B80; B81, a flat base with a rounded corner point; B82; B83, a flat base with a disk-like projection; and B84, a small flat base. Bowl rims include flared forms, CX21, flared and exterior thickened; and CX23. Knob forms are also seen paralleled in the Ankara collection, including double-knobbed CT1. A large rim, P23, is not paralleled due to the fact that outsized forms were not found in this Hacılar assemblage.

the same cultural sphere.²²⁰ Of the Aphrodisias shapes 81 % could be found at Hacılar, so it can be assumed that contact between the two sites was direct. For this reason I have tentatively identified this level as Late Neolithic (?).

The Late Neolithic (?) - Late Chalcolithic Gap

At Beycesultan, Mellaart thought the pottery that appears in the lowest levels to be Hacılar in type, but this has been disputed. Not having seen or handled these ceramics leaves my judgment of this issue in reserve. ²²¹ But— on the basis of the material published I cannot agree with his assertion. In the Burdur area, (but not at Hacılar mound I), Beycesultan-type pottery has appeared (Mellaart 1970 (I):95). However, the assemblages are found in Hacılar mound II and at other sites, such as Dereköy (Lloyd and Mellaart 1962:106). But up to this point, no clear alignment or relationship between the Hacılar and Beycesultan horizons can be demonstrated. And unfortunately, at Aphrodisias we cannot hope to elucidate the picture because the horizons have been stratigraphically mixed.

An inward analysis of the Hacılar-Beycesultan pottery traditions does not support the idea of one developing from the other. Each site had distinct ware-fabrics, a standard complex of forms, decoration techniques plus differing techniques of manufacture. They were produced by distinct potting traditions. Mellaart (Lloyd and Mellaart 1962:106, 112; CAH (1):326) explains these differences by an influx of new folk from « somewhere else. » He rules out their coming from the south or east, but guesses that they come from the north or northwest

- 220. Level VII at Hacılar is characterized by mottled and black-topped vessels (Mellaart 1970a:143), but so far at Aphrodisias blacktopped wares have not been found. As at Hacılar, our ceramics in Level VIIIC are represented by large shallow bowls with vertical plain rims. Basically, the same rim types can be paralleled throughout the Hacılar collection — and the most of the characteristic Hacılar shapes are found at Aphrodisias (Figures 297, 375), even though they are mixed with later deposits. The dimensions, forms and standardized finishing techniques are of important consideration for the reconstruction of those societies and the functions pottery served within the day to day activity of the people who lived here. Certainly the Hacılar type bowls are homogeneous as a group and do not seem to vary from the standard to which these people appear to be accustomed. The serving bowl is so shaped that it functions as an optimum container for foodstuffs, but it has limited fire resistance. At both Aphrodisias and Hacılar few cooking pot fabrics were identified (Mellaart, 1970a:102). Indeed cooking may not have been performed in vessels, i.e., they were reserved for prepared foods and for drinking liquids. We can make this deduction because the standard cooking pot must be so constructed for open-fire cooking. Of course, it is possible that cooking was reserved for a specialized area not excavated at Aphrodisias but at Hacılar this is unlikely because the excavated coverage was significantly larger.
- 221. None of the Beycesultan material in the BIAA collection confirmed Mellaart's analysis, but it is possible that the writer did not handle the material he made reference to.

(Lloyd and Mellaart 1962:106). This 'new people' theory hardly promotes a Hacılar — Beycesultan alignment. There must be a hiatus between these two traditions. A pottery sequence that does fall within this gap has been published by C. Eslick (1978) in her study of the southwestern Anatolian Elmalı Plain material — but this falls beyond the period for which there was any evidence in the Aphrodisias excavations. Eslick (ibid.) presents the only Middle Chalcolithic sites in the area which have been systematically studied, and aligns the findings to the Middle Neolithic in the Aegean — to Saliagos infra, and to the lowest levels at Emborio (cf. Renfrew 1972:72-76).

Saliagos

Saliagos is an Aegean islet only 100 m in length, located at the north end of Antiparos near Paros in the Cyclades. It was excavated in 1964-1965 by J. D. Evans and C. Renfrew (Evans and Renfrew 1968) under the auspices of the British School of Archaeology with the aim of recovering an assemblage from the Cycladic Neolithic.

The radiocarbon dates from Saliagos 222 pre-date the deposits at Aphrodisias and therefore provide a terminus ante quem Late Chalcolithic for Aphrodisias Level VIIIB. At this point in our discussion we would need an intermediate geographical and chronological site to reconstruct the development of the Aphrodisias deposits. The early ceramic groups that are found at the beginning of the Aphrodisias Late Chalcolithic are similar to some of those found at Neolithic Saliagos. Perhaps the knowledge of these shape-forms and decoration migrated to both sites. Even though the Saliagos deposits clearly supercede the Aphrodisias tradition, they are important for the relations between pottery-producing populations.

Saliagos has a potting tradition that is, as a homogeneous group, very different from that of Aphrodisias but there are features and also characteristic small finds that are so similar they cannot be ignored. Plain flaring and vertical bowl rims with either rounded or flattened bases predominate the assemblage, many of which can be paralleled at Aphrodisias. 223 A lamp from Saliagos is

222. The radiocarbon results are as follows (Evans and Renfrew 1968:144):

Sample	Material	C-14 Date	B.C. Date
P-1311	Soil	4222 ± 74	5100
P-1396	Shell	4124 ± 79	5000
P-1368	Shell	3959 ± 87	4765
P-1333	Shell	3825 ± 84	4600
P-1393	Shell	3866 ± 85	4500

The B.C. dates have been calibrated by Clark (1975:251-266).

223. Particularly Aphrodisias rim types X80 (Figure 300.10) are found on the fruitstand, Evans and Renfrew 1968: Figures 31.2; 32.1; 33.5-7. It is also a popular shape for small bowls, ibid. Figures 35.1, 6; and white-painted bowls, ibid. Figure 55.22. A similar form, Aphrodisias CX10 (Figure 298.4) might also be paralleled to these types.

similar to our pinch cups,224 there are corresponding handles, 225 and some of the coarse wares parallel our cooking pot types. 226 One pointillé-designed fragment found in the Pekmez deposits finds its duplicate at Saliagos.²²⁷ There are also base types common to both sites, ²²⁸ such as two similar ceramic podic bases. 229 Certain linear white-painted designs correspond, 230 but in general the white-painted ware is different in design and application as well as association — at Saliagos coarse wares can be white-painted but this technique is generally found only on slipped surfaces at Aphrodisias. Saliagos finger-impressed rims²³¹ and a variety of plastic decoration are also found at Aphrodisias. 232

In the small-find assemblages some similarities worth noting are carved stone and pebble figurines that have been found at both sites, although there are stylistic differences between them. There are similar ground stone products with trapezoidal axes as well as adzes - and one whetstone from Saliagos resembles the common Aphrodisias

- 224. Ibid. Figure 63.5; Aphrodisias Figures 385; 389.25, 26; 392.46-
- 225. Ibid. crescentic lugs, Figures 47.1 and 47.13 can be compared to Aphrodisias type H30 (Figure 412.15). Saliagos vertical cordeye lug, ibid. Figure 46.3 = Aphrodisias type H28 (Joukowsky 1982: Figure 43.7). A loop type from Saliagos, ibid. Figure 57.19 = Aphrodisias type H7 (Joukowsky 1982: Figure 43.15); and Saliagos, *ibid*. Figure 57.19 = Aphrodisias type CH1 (Figure 377.41). A spool lug from Saliagos, ibid. Figure 57.11 = Aphrodisias type CH25 (Figure 385.18); and a horizontal cordeye lug, Saliagos, ibid. Figure 57.1 = Aphrodisias type CH15.

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226. Evans and Renfrew 1968:
                                         Aphrodisias
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Figure 40.1	CC32 (Figure 399.13)
Figure 40.2	CP23 (Joukowsky 1982: Figure 36.1)
Figure 40.3	CP35 (Figure 405.15a)
Figure 40.4	CC24 (Figure 393.14)
Figure 40.5	CC28 (Figure 399.32
	is possibly a correlation).

227. Ibid. Aphrodisias Figure 56.12 Figure 396.14.

Also see linear incised motifs; Saliagos, Figure 56.13 = Aphrodisias Figure 392.67.

228. Common base types include:

Ibid	·	Aphrodisias
Figu	ire 53.9	CB10 (Figure 385.40)
Figu	ire 53.12	B83 (Figure 392.46)
Figu	ire 53.13	CB12 (Figure 385.43)
Figu	ire 54.4	B81 (Figure 297.6)
Figu	ire 54.10	B5 (Joukowsky 1982: Figure 40.11)
Figu	ire 54.13	B85 (Figure 377.29)
229. Salia	agos (ibid.)	Aphrodisias
Figu	re 77.3	CB3 and CB4 (Figure 402.31)
	also Evans and Ren	frew 1968: Figure 77.2 with Aphrodisias

CH(B)38, Figure 389.34.

- 230. Saliagos (ibid.) **Aphrodisias** Figure 49.2 Figure 384.50 Figure 49.4 Figure 384.60 Figure 49.6 Figure 389.8 Figure 50.4 Figure 384.56 Figure 51.3 Figure 384.16 Figure 51.16 Figure 384.41
- 231. Saliagos (ibid.) Figures 39.6; 40.14-19; 42.
- 232. Saliagos (ibid.) Figures 43; 45.1-5.

type. The bone industry is far more developed at Saliagos and only corresponding spatulae bear notice. At both sites pierced and unpierced disks are common. In the early periods there is no worked shell at Aphrodisias, and no clay rods or waisted weights have been identified here as they have been at Saliagos. Neither are there striking similarities in the chipped stone industries. While the parallels between Aphrodisias and Saliagos seem to be more than fortuitous occurrences, the tradition of Saliagos must be considered of a different origin or combination of cultural influences. Only 19 % of the Aphrodisias assemblage could find parallels at Saliagos.

Renfrew (1972:72) suggests the possibility of *Emborio* in Chios, *infra*, phases X-IX, being culturally interrelated with Saliagos. But the evolution of the burnished bowl at Emborio basically parallels that from Aphrodisias (*ibid*. Fig. 5.2) — particularly a vertical plain form from phase X (*ibid*. Fig. 5.3)²³³ at that site. Flaring forms from Emborio phases IX²³⁴ and VIII²³⁵ chronologically precede the inverted shape of phase VI,²³⁶ just as they do at Aphrodisias.

THE LATE CHALCOLITHIC

The Anatolian Southwest

Beycesultan

Beycesultan (Lloyd and Mellaart 1962) is a large höyük located near Çivril on the Maeander River, where the ancient highway ran westward to Miletus. As the crow flies it is 100 km to the north by northeast of Aphrodisias. British excavations led by James Mellaart and Seton Lloyd, in sounding SX on the western part of the mound from 1954-59, revealed some 20 Late Chalcolithic and Early Bronze Age (EB) levels (LX-XX). The excavators divided the Late Chalcolithic (L.Ch.) levels into four phases which were then subdivided on the basis of pottery types (ibid. 18-26, 75ff). In this 11 m deposit, Mellaart suggested that « the changes in this period are subtle » (ibid.), and offered the following divisions based on bowl types: L.Ch.1 (Levels XL-XXXV) is characterized by outcurved or thick everted forms plus white-painted blackslipped burnished wares; L.Ch.2 (Levels XXXIV-XXIX) by flaring bowls and a bowl/jar form with loop handles that rise slightly above the rim; L.Ch.3 (Levels XXVII- XXV) by carinated bowls with slightly concave rims; and L.Ch.4 (Levels XXIV-XX) by large bowls with exaggerated carination (*ibid*. 75ff.). Mellaart (*ibid*. 77) states:

« ... as the Late Chalcolithic material has a very limited range of shapes which often remained in use from one phase to another, the period has been treated as a whole and the shapes numbered in sequence instead of using a new set of numbers for each phase. »

The excavations presented 32 shapes which are representative of the Chalcolithic at Beycesultan. These can be successfully linked to Aphrodisias types.²³⁷ The

237. Late Chalcolithic Shape Correspondences between Aphrodisias and Beycesultan*

-	.u Deyecom	
Shape	Beycesultar	
Shape	Levels LC	Aphilodisius puraneis
1	1	CX41, XC9, CX6, XC11, CX61, X79, CX18, CX79, CX1
2	1	CX8, (variant) CX44
3	1	XC25 (variant)
4	1	XC14, (variant) XC25, CX71, CX37, X80
4	2	CX41, CX40, CX37, X80, CX71, CX36, CX71
	3	
5***	1	CX37, X80, CX92(?)
3	2	XC13
,		CX10 (?)
6	1-4	Fig. 50.2, CJ1, CJ13
7	1-4	CX40, CX48, CX92, CX40, CJ2-, CJ6, CJ11,
		CJ14, CX61, CC17, (base)
0	1.2	B87 (handle) H58
8	1-3	XC15, CX39, CJ14; (coarse ware- CC12, CC9,
		CC28, CC33), CX34, CX77, CJ1-CJ4, CJ14,
	•	CC7, CJ11
9	1	CJ2
10	1-4	CC28, CP31 (?), CC11, CE3, CP34
11	1-4	CP33, CP20, CP29, CC24
	3	CE10
	4	CH82 (handle)
12	1-2	CX63, (rim sherd only), H28, CP14 (handles)
13	2-3	CP38, CP23, CP29, CP33, CC24
14	2	CJ13 (?)
15	2-3	CX77, XC15 (rims only), CT7, CH28**** (handles)
16	2-4	CE10 (rim), CH5, H60 (handle)
17	2	_
18	2-4	LC2-LC3 no parallel; LC4
19	3-4	XC5 (variant), XC21, CC17, also see (variant)
• •		XC1
20	3-4	XC8, CX57; LC4-XC6
21	3-4	LC4-CX40
22	3-4	LC4 Base B74, CC29, XC21, CX40,
	_	CX37 (?), CX44 (?)
23	3	Rim - CJ6; knob - CT1
24	3-4	CC15 (?), LC4-CX74, CJ4, CJ14
25	3	_
26	4	Rim CC14; handle H4 (?)
27	4	CJ8 (?), CX76, CX14
28	4	CC3, CC8, CC14 (variant)
29	4	CJ13
30	4	CJ12 (rim)
31	4	CC17
32	4	CC14, XC11
* B	Pevcesultan I.	Sheet 1. Shape examples in Bevcesultan I text as

- * Beycesultan I. Sheet 1. Shape examples in Beycesultan I text as well as on sheet 1 and Figures P.1-P.15.
- ** Only type series elements are given.
- *** There appears to be a conflict here as Mellaart lists this shape on Sheet 1 as appearing in LC1, Level XXXV and LC2 Levels XXXII and XXX, but on p. 80, he reports that only one specimen is found in Level XXXV.

^{233.} Renfrew 1972: Figure 5.2.4 is the same as our CX36 (Figure 384.11) and CX37 (Figure 384.12) and also X80 (Figure 300.4).

^{234.} Ibid. Figure 5.2.7 = CX59 (Figure 299.6).

^{235.} *Ibid.* Figure 5.2.13 = XC6 (Joukowsky 1982: Figure 34.12) or XC8 (Figure 399.4).

^{236.} Furness 1956: Figure 14.1 = CX9 (Figure 297.1).

^{****} This knob is not on the rim, but below it.

comparison of these two sites manifests a single welldefined ceramic community. The parallel cultural associations are noteworthy because the component pottery shape-forms are composed of those variables which tend to indicate an analogous development —it would appear that both sites enjoyed the same environment, traditions, and external forces, and that there is a homogeneity in their ceramic industries. Mellaart determined the age of the Late Chalcolithic for Beycesultan by fitting the four sub-periods into the following scheme: « Judged by the number of building levels, these sub-periods are all of about equal length, varying perhaps not more than a century in duration » (Lloyd and Mellaart 1962:75). For the correlation of the Beycesultan data with our own, we have drawn these tentative conclusions: Beycesultan L.Ch.1 (Levels XL-XXXV) corresponds to Levels VIIIB-VIIIA of Aphrodisias Late Chalcolithic 1 — based on stylistic traits shared by both sites. As mentioned above, the L.Ch.1 at Beycesultan had a preponderance of whitepainted wares and out-curved thick everted rims. At Aphrodisias, white-painted wares occur at greater numbers in the Pekmez trench 2 Level VIIIA deposit in unit 1598e than in any other single deposit on the Pekmez site.

The beginnings of the Aphrodisias Late Chalcolithic 1 in Pekmez trench 2 Level VIIIB may have been earlier than Beycesultan L.Ch.1 — for flared thick-walled rolled rims were found at Aphrodisias in this deposit. These forms are not common to the Beycesultan early repertoire. We would equate Beycesultan's L.Ch.2 (Levels XXXIV-XXIX), represented by flared bowls with concave rims, to our Levels VIID-VIIC deposits. L.Ch.3 (Levels XXVII-XXV) at Beycesultan is typified by carinated bowls with concave rims, which are so popular in the deposit of Aphrodisias Level VIIB. And L.Ch.4 (Levels XXIV-XX), which is represented by large bowls with exaggerated carinations, we would place with the ceramics of Aphrodisias Level VII. And finally, many of the Beycesultan EB I forms can be likened to ours; these will be briefly examined at a later point in this section. Therefore, direct contact between Aphrodisias and Beycesultan is assumed during the Late Chalcolithic as 71 % of the forms could be paralleled.

Other sites: The Late Chalcolithic population of the Maeander Valley has only recently begun to be detailed. Findings from surface collections include a mixture of ceramics that in balance are predominantly Bronze Age in character. A brief discussion of these is given *infra* under the Early Bronze Age and in Appendix 1.

The Elmalı Plain

Lying in the western Taurus mountains of the southeast, 120 km west of Antalya, is the Elmalı Plain, a high alluvial area that is the drainage basin for the Avlangölü and the Elmalı gölü. Surrounding the area are mountains, but a southern access is provided to the southern coastal town of Finike, 63 km from the plain. A northern route to the Maeander is via Gölhisar, and continues along to Acıpayam and Tavas — in a direct line, it is 135 km to the southeast of Aphrodisias. In classical times, this area was located in the northern part of Lycia.

In 1950 the first comprehensive site survey was undertaken by M. S. F. Hood, and in 1952 J. Mellaart (1954) made a follow-up survey. Since 1962, Machteld Mellink of Bryn Mawr College, Bryn Mawr Pennsylvania has excavated at Karataş-Semayük and has published the results in the *American Journal of Archaeology* (see Bibliography).

Prehistoric investigations at Karataş-Semayük have concentrated on five principal areas referred to in this volume: 1) the central Karataş mound with an important domestic settlement enclosed within walls; 2) the pithos burial cemeteries; 3) an adjacent area known as « Bağbaşı »; and located to the north-east of Karataş, the sites of 4) Boztepe and 5) Karaburun. (The five excavated levels of the Karataş central mound and the cemeteries will be discussed in the Bronze Ages along with pertinent Bağbaşı remains, and the results of the earlier sites of Bağbaşı, Boztepe and Karaburun will be related to the Chalcolithic.)

In 1962-63 and 1967-69 an area survey of Elmalı was undertaken under the direction of Machteld Mellink of Bryn Mawr College, Bryn Mawr, Pennsylvania, and was supervised by Christine Eslick (1978).

Eslick (1978) divided the pottery from the area into three ceramic traditions: 1) Late Neolithic/Early Chalcolithic Hacılar (Kızıbel-Lower Bağbaşı); 2) Middle Chalcolithic Kızıbel; and 3) Late Chalcolithic Beycesultan tradition. Included in her study is also relevant material collected by M. S. F. Hood's 1949 survey of the plain. The Late Chalcolithic pottery tradition was recovered and identified as the « Kızıbel-Lower Bağbaşı tradition » by Eslick (1978:7). We thought it interesting that no white-painted wares were found.

Direct contact between Aphrodisias and the Elmalı Plain is not improbable, but there is little question of a derivative potting tradition. Eslick cautiously writes (*ibid*. 231, Note 18):

« The burnished bowl sequence in the Elmalı Plain — at Boztepe, Karaburun, and Bağbaşı — reflects in many ways that of Beycesultan, despite the distance involved. »

Our understanding of ceramic connections between Aphrodisias and those sites in the southern part of the southwestern area is unfortunately dependent on small samples. C. Eslick has handled and studied most of this material, and suggests that the pottery from Kuruçay Hüyük, located 15 km south of Burdur, has similar burnished and unburnished wares and that Bağbaşı-type angular and rounded lug handles (one with a thumb impression) appear there (Eslick 1978:cat. no. 77, 158:Pl. 60.8). From Kara'in on the edge of the Antalya Plain there are black-slipped and burnished flaring bowl-forms of Aphrodisias type. Painted pottery that corresponds to that of Bağbaşı (Kökten 1955:Pl. III, top center) has been recovered from Kara'in as well as from Çark'in (Kökten 1958:13, Pl. 15, Fig. 6).

In her introduction to the comparative analysis of the pottery from Bağbaşı, Boztepe and Karaburun, *infra*, of the Elmalı Plain, C. Eslick (1978:114-116) states:

« The pottery from these three sites is very similar and the period they represent, the Late Chalcolithic, is best represented in our collections... The two closest sites with useful comparable material are Beycesultan and Aphrodisias. ... The pottery from both these sites is made in the same tradition as that of Bağbaşı, Boztepe and Karaburun, with similar fabrics and manufacturing traditions. The shape sequence of the various sites are, therefore, likely to run parallel and comparisons between them will probably be valid. »

Bağbaşı

Bağbaşı is 7 km northeast of Elmalı on a low rise overlooking the Korkuteli-Elmalı road. Under the direction of M. Mellink, a series of trenches were excavated from 1967-69 revealing rectilinear house plans. Only a selection of the pottery was retained for study except for trench 116, from which all of it was kept (Eslick 1978:12). This pottery is handmade, i.e., coil-constructed, and is roughly smoothed and fired at low temperatures. Common forms include bowls, basins, open pots, jars and jugs, spit supports, and pans.

Various handles are plug-attached; finger-impressed lug handles and ribbed strap handles are also present. Larger vessels have disk bases. Grey-to-black colored bowls are often burnished, have flat bases, and a common feature in that loop handles are attached just below the rim. Sometimes lug handles appear on these bowls and on accompanying rim shapes. Only 10 % of the sherds are burnished; one pattern-burnished fragment was found. Other plastic decoration consists of knobs, a molded neck ridge applied to jar forms (Eslick 1978:31), and one double-pot covered with pointillé impressions (ibid. 41, cat. no. 224). Six fragments were found to be red-painted — and it is important to note that no slipped white-painted wares were recovered at Bağbaşı. As C. Eslick points out, the Bağbaşı assemblage parallels that of Beycesultan at the end of L.Ch.2 and L.Ch.3, and also that of Aphrodisias (Eslick 1978:122). « Inverted rim »

bowls appear at Bağbaşı along with flared forms ²³⁸ which are predominant in our Late Chalcolithic periods.

Aphrodisias jar/jug forms are similar to the Bağbaşı ones. ²³⁹ And handle shapes that can be paralleled from there include small lug types ²⁴⁰ as well as plug-affixed types. ²⁴¹ But the most characteristic form is the plug-affixed ledge-lug handle ²⁴² a few of which we have at Aphrodisias. Baking trays are also common to both sites ²⁴³—at Bağbaşı they were found burnished on both surfaces, at Aphrodisias they were burnished, if at all, only on the upper surface. A base of this same baking tray type and of coarse ware fabric is also found there appearing on what Eslick terms a « tray-like vessel » (*ibid.* 122-123 cat. no. 235, 236). But the Bağbaşi « disc » bases do not find a parallel at Aphrodisias (*ibid.* Plates 20, 26, 38.7, 60.1-2).

But there are numerous differences between the two assemblages: open pots and bowls (Eslick 1978: cat. 68, Pl. 12) with disk bases and lug handles (*ibid.* cat. 23, 30, Pl. 3.1, 4) — so characteristic of the Bağbaşı assemblage — do not appear either at Aphrodisias or at Beycesultan. The inverted bowl shapes of Levels VIIIB-VII at Aphrodisias and at Beycesultan L.Ch. Levels do not occur at Bağbaşı. Nor do white-painted wares. In the footnotes is a chart of proposed correspondences between the shapeforms of the two sites. 244 If contact existed between Aphrodisias and Bağbaşı, it was indirect — only 32 % of the shapes could be correlated. (There is further discussion of Bağbaşı under Karataş-Semayük, *infra.*)

- 238. *Ibid.*, « Inverted » rim bowl = Figure 1, cat. 1-4. Cf. Aphrodisias parallels CX92 (Figure 384.51); XC11 (Joukowsky 1982: Figure 31.16); CX79 (Figure 392.44); and CX39 (Figure 384.78); and as for flaring forms: *ibid.* cat. 3-7; 31-21. C. Eslick (1978:17) points out that flaring bowls comprise 80 % of the bowl occurrences. Cf. Aphrodisias parallels below.
- 239. Eslick 1978: Figure 28, cat. 96-97 = Aphrodisias types CJ6 (Figure 384.72) and CJ13 (Figure 399.33) which may be bowls but we have labeled them jars.
- 240. Ibid. cat. 154 = Aphrodisias H28 and double pierced 155 for which we have no parallel.
- 241. Ibid. Plate B2.1, 3:60.3.
- 242. Ibid. 26, 27.
- 243. *Ibid.* cat. 244-246; cat. 246, Figure 35 is like our BT8 (Figure 385.45). Cat. 245 is similar to the Aphrodisias type BT11 (Figure 405.39); CB3 (Figure 393.37; and CH(B)38 (Figure 389.34).
- 244. Chart of Correspondences between Aphrodisias and Bağbaşı in the Elmalı Plain (Eslick 1978).

Bağbaşı Aphrodisias Plate 1, cat. CX92 (Figure 384.51) 2 3 **CX79** (Figure 392.44) 10 X80 (Figure 298.10) 15 CX14 (Figure 297.2) 17 CX44 (Figure 384.63) **B85** (Figure 377.29) 18 CX31 (Figure 298.19) 22 CX85 (Figure 389.10) Plate 2, cat. 6 CX39 (Figure 384.78) 8 CJ1 (Figure 377.11) 12 X67 (Figure 301.10)

Boztepe

Boztepe lies 1.5 km south of Karaburun, ca. 8 km northeast of Elmalı and to the north of Bağbaşı. Boztepe was surveyed in 1967 and a fifth century B.C. tumulus was excavated in 1972 under the direction of M. Mellink. In this excavation earlier strata were found incorporated in the tumulus fill. The material from this site has been published by Eslick (1978).

Boztepe has similar bowls (Eslick 1978:Pl. 45, Cat. 4) with « a broad everted rim ». Cat. 5-9 with a rim thickened to the interior, is comparable to those found both

at Beycesultan L.Ch.1 (Lloyd and Mellaart 1962:Pl. 1.2 and Pl. 2.14-15) and at Aphrodisias in Late Chalcolithic Levels VIIIB-VIIA. (Aphrodisias types CX50 Joukowsky 1982: Figure 35.11 and XC 17, *ibid*. Figure 32.8 are the same as Boztepe cat. 5; cats. 7, 8, Eslick 1978.) Also present in the Boztepe collection are « folded-over rim » shapes (Lloyd and Mellaart 1962:Fig. P.1.2 and P.2.14-15); jar/ jug shapes (Lloyd and Mellaart 1962:Fig. P.5.16); Aphrodisias types CX63 (Figure 405.6) and XC9 (Joukowsky 1982: Figure 32.2); and flaring bowl rims. A further listing of parallels can be found in the footnotes. ²⁴⁵

```
(Joukowsky 1982: Figure 43.7)
                                                                                    154
                                                                                          H28
Plate 3, cat.
                                                                                                    (Figure 377.10)
                                                                                          CX13
             CX89
                       (Joukowsky 1982: Figure 30.10)
                                                                                   219
      2.5
      27
             CX10
                       (Figure 298.4)
                                                                                   223
                                                                                          CB<sub>10</sub>
                                                                                                    (Figure 402.5)
             B89
                                                                             Plate 32, cat.
      29
             CX10
                       (Figure 298.4)
                                                                                          CH50
                                                                                                    (Figure 405.55)
                                                                                    165
                       (Figure 298.15)
      30
             CX26
                                                                                   168(?) CH46
                                                                                                    (Figure 405.58)
Plate 4, cat.
                                                                             Plate 33, cat.
                       (Joukowsky 1982: Figure 30.21)
       31
             CX40
                                                                                                    (Figure 385.23)
                                                                                          B87
                                                                                   175
             CX9
                       (Figure 297.1)
       36
                                                                                    176
                                                                                          B45
                                                                                                    (Figure 399.9)
      37
             CX27
                       (Figure 298.16)
                                                                                    182
                                                                                          B23
                                                                                                    (Joukowsky 1982: Figure 40.4)
Plate 6, cat.
                                                                                    181.
                                                                                                    (Figure 299.12)
                                                                                          B7
      51
             CX35
                       (Figure 384.75)
                                                                                    185
Plate 7, cat.
                                                                                                    (Figure 299.12)
                                                                                    183
                                                                                          B84
      23 (?) CX92
                       (Figure 384.51)
                                                                                                    (Figure 309.14)
                                                                                    184
                                                                                          B5
             CT2
                                                                                                    (Figure 297.7)
                                                                                    186
                                                                                          B80
       60, 61 CX35
                       (Figure 384.75)
                                                                                    187
                                                                                                    (Figure 377.29)
                                                                                          B85
      62
             CX85
                       (Figure 389.10)
                                                                                    188
                                                                                                    (Figure 307.15)
                                                                                          B6
Plate 8, cat.
                                                                                    189
                                                                                          CB6
                                                                                                    (Figure 393.48)
       72
             CH28
                       (Figure 389.1)
                                                                                                    (Figure 377.26)
                                                                                    191
                                                                                          B73
                       (handle only, not rim type)
                                                                                    195
                                                                                          CB<sub>12</sub>
                                                                                                    (Figure 393.43)
Plate 11, cat.
                                                                                    196
                                                                                          B86
                                                                                                    (Figure 377.14)
                       (Figure 393.1)
      69
             CH43
                                                                                   193
                                                                                                    (Figure 377.32)
                                                                                          B75
       81
             CX93
                       (Joukowsky 1982: Figure 35.4 — rim type
                                                                             Plate 34, cat.
                       but we don't know if this « open jar »
                                                                                    200
                                                                                          B82
                                                                                                    (Figure 297.5)
                       form is at Aphrodisias)
                                                                                    202
                                                                                          B85
                                                                                                    (Figure 377.29)
Plate 19, cat.
                                                                                   207
                                                                                          B6
                                                                                                    (Figure 307.15)
      98
             CX14
                       (Figure 297.2)
                                                                                   216
                                                                                          CB5
                                                                                                    (Figure 393.47)
Plate 22, cat.
                                                                             Plate 35, cat.
      131
             CJ5
                       (Figures 384.74, but the Bağbaşı rim is
                                                                                   245
                                                                                          BT11
                                                                                                    (Figure 405.39)
                       much larger);
                                                                                   246
                                                                                          BT8
                                                                                                    (Figure 385.45)
             CX39
                       (Figure 384.78)
                                                                             Plate 37, cat.
Plate 27, cat.
                                                                                          CB4
                                                                                                    (Figure 402.31)
                                                                                   229
       114.
             CJ3
                       (Figure 384.73)
                                                                                   235
                                                                                          CB3
                                                                                                    (Figure 393.37)
       115
                                                                                   236
                                                                                          CH(B)38
                                                                                                    (Figure 389.34)
             CJ4
                       (Figure 384.71)
       116
                       (Figure 297.4)
                                                                                   237
                                                                                          B91
                                                                                                    (Figure 393.46)
       117
             CX21
                       (Figure 405.1)
                                                                                    238
                                                                                          B92
                                                                                                    (Figure 393.40)
       128
             CX77
                       (Joukowsky 1982: Figure 31.7)
       130
             CX56
                                                                             (32 %, 81 of 255 forms, can be compared to Aphrodisias.)
Plate 28, cat.
                                                                             Eslick (1978:118) mentions that in the Aphrodisias repertoire there
                       (Figure 392.30)
        94
             CJ8
                                                                             are baking trays with a row of pierced holes positioned below the
        95
             CJ12
                       (Figure 405.32)
                                                                             rim, but it is not clear to me what she means.
             CX21
                       (Figure 297.4)
                                                                       245. Chart of Correspondences between Aphrodisias and Boztepe in
        96
             CJ6
                       (Figure 384.72)
                                                                             the Elmalı Plain (Eslick 1978).
             CJ13
                       (Figure 399.33)
        97
                                                                                          Aphrodisias
                                                                             Boztepe
       101
             CJ4
                       (Figure 384.71)
                                                                             Plate 45, cat.
                       (Joukowsky 1982: Figure 31.1)
       106
             CX84
                                                                                    5
                                                                                          CX50
                                                                                                    (Joukowsky 1982: Figure 35.11)
       134
             CX64
                       (Joukowsky 1982: Figure 30.15)
                       (Figure 392.44)
                                                                                    7, 8
                                                                                         XC17
                                                                                                    (Joukowsky 1982: Figure 32.8)
       139
             CX79
                                                                                    9
                                                                                                    (Joukowsky 1982: Figure 33.3)
                                                                                          XC29
Plate 29, cat.
                                                                                    10
                                                                                          CX41
                                                                                                    (Joukowsky 1982: Figure 35.71)
             CJ4
                       (Figure 384.71)
       93
                                                                                                    (Joukowsky 1982: Figure 30.11)
                                                                                   11
                                                                                          CX87
                       (Figure 392.30)
       108
             CJ8
                                                                                    15
                                                                                          CX40
                                                                                                    (Joukowsky 1982: Figure 30.1)
                       (Figure 385.23)
       178
             B87
                                                                                   17
                                                                                          CJ4
                                                                                                    (Figure 384.71)
       179
             B89
                       (Figure 385.21)
                                                                                   18
                                                                                          CJ2
                                                                                                    (Figure 377.17)
                       (Figure 377.14)
       180
             B86
                                                                                                    (Figure 297.1)
                                                                                    19
                                                                                          CX9
Plate 30, cat.
                                                                             (38 %, 10 of 26 forms, are represented.)
        9
             CX85
                       (Figure 389.10)
```

But only 38 % of the ceramic corpus found parallels at Aphrodisias, thus it is assumed that no direct contact existed between them.

Karaburun

Karaburun is located about 10 km northeast of Elmalı. In the course of the excavation of early fifth century tumuli, Chalcolithic pottery was discovered. M. Mellink has published the reports of these excavations in the American Journal of Archaeology (1971:250-255; 1972: 262 for contour map and section; 1975:355). C. Eslick (1978) has published the pottery. She states (ibid. 78) that it is made in the Bağbaşı tradition: handmade with black cores, and less than 5 % burnished. Prominent are two shallow bowl shapes, the first with an everted rim, and the second a flaring shape. Jars with short vertical necks are common, and what Eslick calls inverted, everted-necked and everted-rimmed jars also appear, along with flaring-necked jars. Several parallels were found to correspond with Aphrodisias types, 246 — there may have been contact between the two sites for 69 % of the Karaburun assemblage can be paralleled at Aphrodisias.

Acipayam and Tavas

Acipayam lies on the plain of Acipayam adjacent to the plain of Tavas, just some 60 km southeast of Aphrodisias. These areas should certainly be allied in their development — even though there is a watershed separating the two plains, access between them is possible. Mountain ranges on both the north and east cut this area off from Hacilar, Burdur, and Tefenni on the east and Denizli and Beycesultan on the north.

246. Chart of Correspondences between Aphrodisias and Karaburun in the Elmalı Plain (Eslick 1978).

```
Karaburun Aphrodisias
Plate 48, cat.
             XC25
                       (Figure 399.6)
                       (Joukowsky 1982: Figure 31.18)
        3
             CX71
             X66
                       (Figure 301.1)
        5
             CX80
                       (Figure 392.1)
                       (Figure 377.2)
        6
             CX2
             XC16
                       (Joukowsky 1982: Figure 32.9)
                       (Figure 405.17)
       8
             XC28
                       (Figure 298.19)
       23
             CX31
                       (Figure 405.29)
      26
             CX78
Plate 49, cat.
       10
             CX14
                       (Figure 297.2)
                       (Figure 297.4)
             CX21
       13
             CX28
                       (Joukowsky 1982: Figure 30.5)
       14
                       (Figure 301.2)
       16
             X48
                       (Figure 405.42)
       17
             CJ12
                       (Figure 384.70)
       18
             CX33
                       (Figure 377.17)
      19
             CJ2
      20
             CX76
                       (Figure 405.44)
      22
             CX27
                       (Figure 298.16)
Plate 50, cat.
       9
             CE1
                       (Figure 377.1)
                       (Figure 393.43)
             CB12
      21
(70 %, 20 of 29 forms can be compared to Aphrodisias.)
```

This area has been surveyed twice: firstly by J. Mellaart who published partial results in 1960, and by D. French and J. Birmingham in 1963. Presumably there is Late Chalcolithic material from the plains of Tavas including Medet Höyök (see Appendix 1; Joukowsky 1985; and from sites around Acıpayam (Kızılhisar Höyök, Yassı Höyök and Seller Höyök) as these sites appear to enjoy a similar Early Bronze Age development. Without systematic sampling and publication, it is difficult to fit them into the Chalcolithic, even though we can anticipate that at that time direct relationships between them and Aphrodisias existed.

The Western Maeander and the Coast

Scattered ceramic and stone collections from Nazilli, Nysia, Aydin, and Dandalas Valley sites are presented in Appendixes 1 and 2. At this writing, the area is largely unexplored — no excavations have been undertaken, and little has been published. On the basis of our examination of yet other artifact collections in the Aydın Museum, we can tentatively assert that the distribution of Late Chalcolithic wares is found in areas lying westward in the Maeander Valley. But a systematic survey is needed before the extent of interaction between Aphrodisias and these sites can be confirmed. The heart of the problem of eastern Aegean and Maeander Valley settlements is also dependent upon sites lying on the coast including Iasos, Miletos, Bodrum, and those in the Izmir area — the ceramics from this area should reflect both the penetration and extent of island — inland ideas. (Also see the continuation of this discussion in the Early Bronze Age.)

The Western Coast and the Eastern Aegean

The coast from Edremit to İzmir was surveyed in 1939 by J. Stewart and by others. Some of this survey material is in the German Archaeological Institute in İstanbul and has been studied by French (1961:99) and by Mellaart (1955:80ff). But Late Chalcolithic sites on Anatolia's west coast have not as yet been clearly defined. The site of Helvacıköy-Hoyücek in the İzmir area has produced ware-fabrics, shape-forms and black-slipped bowls which D. French (1961:103, note 11) aligns with Kum Tepe (infra) phase IB, but Mellaart (CAH 1 (2):327 381) prefers to place them in a Troy I context. This pottery is on display at the İzmir Museum. The site of Bayraklı was, in all probability, occupied in this period but to date nothing has been published. Bozdağ near Myndus on the Halicarnassus Peninsula may also have been occupied at this time (Paton and Myers 1896:204. 264). Parallels cannot be drawn to these sites since to date the pottery has not been published.

In the Eastern Aegean there are several island sites that have strong resemblances to the Aphrodisias material, but there are also several problems involved with rushing into a comparative analysis of these assemblages - for although many of the shapes are similar, the ware-fabrics, as would be expected, are different and perhaps the manufacture as well. The writer has not seen or handled any of this material, but on the basis of studying published reports the following observations have been made.

From Aghio Gala on Chios (Furness 1956), some of the pottery in the Upper Cave can be paralleled to Aphrodisias shape-forms and decoration such as a vertical plainrimmed bowl,²⁴⁷ a crescent-shaped lug handle (*ibid*. Pl. XXII.30-31), some pointillé incisions (ibid. Pl. XXIII.5), and the occurrence of white-painted wares (ibid. 197), also a coarse ware form, 248 a jar form, 249 a handle, 250 and a storage jar/pithos shape. 251 Before any further assessment of these parallels can be made, the pottery from Emborio must be fully published. The long sequence of levels there are important for chronological considerations.

In the Dodecanese, there are sites on both Kalimnos (Maiuri 1928:104 ff; Furness 1956:173 ff) and Kos that were occupied during this period. On Kalimnos at the Vathy Bay Cave, correspondences with Aphrodisias shapes are found in horizontally set loop handles, 252 and lunate or crescentic lug handles (Furness 1956:Pl. XVIII 13.14; also Aphrodisias type H30, Figure 412.15), horizontally pierced lugs,²⁵³ bowl forms,²⁵⁴ and jar/jug forms.²⁵⁵

On the island of Kos, the pottery from the Aspripetra Cave is of an Anatolian Late Chalcolithic date this has been discussed by both Furness (1956:193) and Kadish (1971:51). But Bernabò-Brea (1964:684) dates it to the Early Chalcolithic. This is a homogeneous group of ceramics that is clearly different from the sanctuary

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247. Furness 1956: Figure 14.1 parallels Aphrodisias CX9 (Figure 297.1).
248. Ibid. Figure 14.4 = Aphrodisias CP23 (Figure 304.9).
249. Ibid. Figure 14.13 = Aphrodisias CJ2 (Figure 377.17).
250. Ibid. Figure 14.7 = Aphrodisias CH1 (Figure 377.41).
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- 251. Ibid. Figure 14.15 = Aphrodisias CE10 (Figure 396.4).
- 252. Furness 1956: Figure 10.1 = Aphrodisias CH43 (Figure 393.1).
- 253. Furness 1956: Pl. XVIII 10-12 = Aphrodisias types CH25 (Figure 385.18); CH23 (Figure 385.20) and CH21 (Figure 385.1).
- 254. Ibid. Figure 10.1 = Aphrodisias X94 (Joukowsky 1982: Figure 30.4) and Figure 10.2 is similar to Aphrodisias type CX57 (Joukowsky 1982: Figure 34.8).

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See also: Figure 10.4 = CX71 (Joukowsky 1982: Figure 31.18)
          Figure 10.5 = CX20 (Figure 377.16)
          Figure 10.8 = CX9 (Figure 297.1)
          Figure 10.9 = CX34 (Figure 384.69)
          Figure 10.12 = CX10 (Figure 298.4)
          Figure 10.14 = CX33 (Figure 384.70)
          Figure 10.15-16 = CX96 (Figure 396.8)
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The overall shape of these are the same, but the example from Kalimnos, 10.14, bears incisions.

255. Ibid. Figure 10.3 = Aphrodisias CJ4 (Figure 384.71).

deposits lying above it. Other sites on Kos have also produced similar wares and decoration (Hope Simpson and Lazenby 1970:55-61, Fig. 7, Pl. 20a, 20b). The dark burnished pottery published by Doro Levi (1925-1926) bears strong resemblances in its decoration to Anatolian Late Chalcolithic - Early Bronze Age wares and to the shapeforms dominated by plain hemispherical types. But on the basis of stylistic grounds alone, an early date in the Late Chalcolithic would more probably be applicable to this deposit.

Kum Tepe

Kum Tepe is a small mound located in the Trojan Plain, 5 km northwest of Troy and 2 km from the Hellespont (Figure 4). In a site survey of 1934 under the auspices of the University of Cincinnati, it was noted that sherds correlated to Troy I were found. In that same year, under the direction of J. Sperling and H. Košay, four trial trenches were excavated which produced three sub-periods that excavators identified as IA, IB, and IC. These Sperling further subdivided into phases 1A1 and 1A2, IB, IB1-IB4, and I, IC1 and IC2. The earliest of these phases is IA1 in which approximately 600 handmade fragments were found of varying clay quality: one-third were of a coarse fabric and another third, burnished, were classified as fine ware. In his report of these excavations, Sperling (1976) discussed typological parallels of each of these pottery groups and draws chronological relationships with Eastern Aegean sites, with Beycesultan, and finally with Troy — each of which may be aligned with our study and will be discussed below. Any conclusions implying direct contact between Aphrodisias and the Troad would at this point be premature, however it cannot be denied that on the basis of allied pottery types they shared the same cultural horizon during part of the Late Chalcolithic and the Early Bronze Ages.

In 1979, I was able to examine the Kum Tepe materials stored both in the Prehistoric Laboratory at Istanbul University²⁵⁶ and in the Istanbul Archaeological Museum.²⁵⁷ The similarities between the two sites were striking. The range of ware-fabrics were about the same, even though the Aphrodisias wares were darker or more black in color — wares associated with Kum Tepe phase

- 256. It is hoped that 1934 Yılı Kumtepe Kazisi Çanakömlek Topluluğu ve Küçük Buluntuları, an unpublished MA thesis by Mehmet Özdoğan of the İst. Univ. Edebiyat Fakültesi Prehistorya Anabilim Dalı (1970), will be published, for it is an important research work of the Kum Tene site.
- 257. Some of the unpublished small objects at the İstanbul Archaeological Museum were also manufactured in a similar tradition. Adres, Cat. nos. 1599c.7 (Figure 376.6) and 1533.1 (Figure 397.20), and K15 is a pierced disk. K4 is a small juglet that resembles our sloping rimmed juglet, cat. no. 1579.II (Figures 343-344.1, 411.4) from the Pekmez trench 2 pithos burial.

IB1 were better oxidized than Aphrodisias wares. Such ware-fabrics extend over some time span at Aphrodisias, as they probably did at Kum Tepe. The thick coarse wares that are so typical of baking trays at Aphrodisias (PX and PS), are found at Kum Tepe associated with IB4 deposits. Among the Kum Tepe bases, in phase IB2 — there were podic feet that bear a burnish, but burnished podic bases have been found at Aphrodisias only in Early Bronze contexts. A depressed ring base at Kum Tepe has a good parallel at Aphrodisias.

Those Kum Tepe shape-forms which are tangential to the type series at Aphrodisias range through IA-IC, but there are more alliances with sub-period IA1 than with any of the other periods (only one form could *not* be paralleled [Sperling 1976: Fig. 8.114] and that is a horned handle, which has not been found at Aphrodisias). In sub-period IA2, several forms could not be paralleled to our LC ceramics (Sperling 1976: Fig. 9.207, 212-216; 10.227-228 and 230, a pedestal base).

In phase IB1, which is dominated by rolled incurving rim shapes, three forms out of the 8 fine wares (Sperling 1976: Fig. 12.303, 305 and 307), and two out of the seven coarse ware forms published could not be paralleled (ibid. Fig. 16.313-314). In phase IB2, of the fine ware that had rolled incurving shapes, eight could not be corresponded, but only one form of the six semi-coarse and coarse wares could not be paralleled (ibid. Fig. 17.423). In phase IB3, however, there are important differences between the two sites: of the 46 fine ware forms, only 14 (or 30 %) could be paralleled (ibid.); forms that could not be paralleled include: Fig. 14.501-503, 505-514, 516-517, 521; 15.535-543, 547-551, 554-555. But out of the 11 coarse ware forms, only three could not be paralleled (ibid. Fig. 18.530 — however, this is close to Aphrodisias CX60 Figure 402.3). Could it be that as a totality, fineware forms seem to be more dynamic and undergo more changes, perhaps from pressures either within or without, than the traditional coarse ware forms? In phase IB4, Sperling states that the incurving bowl rim is the most popular shape-form, but that it begins to be joined by variant forms with angular profiles — which continue to be common in the following phases and which he parallels to Troy I shapes. And again, of the 28 fine ware forms from phase IB4, published from Trench R (Sperling 1976: Fig. 19), only one-half could be paralleled, 258 of the 24 shown in Figure 20 from Trenches S and U only 11 shapes were found to correspond.²⁵⁹ But all the shapes of semicoarse and coarse-ware fabrics represented in this Kum Tepe phase (Sperling 1976: Fig. 21) have been paralleled at Aphrodisias.

In phase IC1, seven of the 18 fine-ware shape drawings published could not be paralleled. 260 Of interest are coarse ware angular-shouldered forms, depicted in Figure 22.713-717, all of which find correspondences both with Aphrodisias types²⁶¹ and with the inverted shape A 12 from Troy (Blegen et al. 1950:60-61, Fig. 258-261). At Kum Tepe, Sperling (1976:346), notes that the shoulder is more angularly shaped than ever before, and that incised decoration first appears in this phase (ibid.). Sub-period IC2 is characterized by two bowl types that correspond to Troy shapes: flared A 6 and inverted A 12 (ibid. 350), which in turn are analogous to many Aphrodisias shape-forms. We found other parallels to Aphrodisias worth noting in this phase: biconically-shaped spindle-whorls²⁶² (Sperling 1976: Pl. 71), a small knobbed juglet similar to one associated with our Pekmez trench 2 pithos burial, 263 a bone artifact, 264 the application of rounded knobs, 265 conical upturned knobs, 266 a similar disk, 267 a fragment incised with pinpricks and a linear design, ²⁶⁸ large knob lugs, ²⁶⁹ conicallyshaped tripodic bases, 270 the flattened rectangular type of the same sort of podic base, 271 also spool lug handles. 272 These findings can be better understood in outline form.²⁷³

- 260. *Ibid.* Figure 22.702-703. These are bowls with convex-shaped rims that are rounded and thickened on the interior: Figure 22.705 Sperling parallels to Troy I, shape A 6; Figure 22.710 appears to be analogous to both Aphrodisias types CX67 (Figure 405.28) and X73 (Joukowsky 1982: Figure 34.13), Figure 22.718 is a pedestal base; and 725 Sperling parallels to a Troy I pyxides shape that is not yet found at Aphrodisias.
- 261. *Ibid.* Figure 22.713 = CX58 (Figure 392.9); 714 = X77 (Figure 405.35); 715 = CX66 (Figure 405.33); 716 = CX95 (Joukowsky 1982: Figure 34.5). This last may be a questionable parallel: the exterior is cross-hatched, which can be paralleled in *Troy I*, Blegen *et al.* 1950:88, 105, 112, 115.
- Sperling parallels this to Troy I (Blegen et al. 1950: Figure 128, type 15).
- 263. *Ibid*. Plate 78.816 = Aphrodisias Figure 392.68.
- 264. Kum Tepe no. 664 = Aphrodisias Figure 385.40.
- 265. Ibid. Plate 74.311 is similar to type CT5 Figure 392.51.
- 266. Ibid. Plate 74.418 is like CT2 from Aphrodisias.
- 267. Ibid. no. 663 = Aphrodisias Figure 392.27.
- 268. Ibid. no. 424 = Aphrodisias Figure 385.4.
- 269. Plate 72.135 = Aphrodisias Figure 384.9.
- 270. Ibid. Plate 73.218-219 = Aphrodisias type B32 (Figure 405.18).
- 271. Ibid. Plate 76.558.
- 272. Ibid. Plate 74, see particularly no. 402.
- 273. Percentage Frequencies of Occurrence of Corresponding Shape-Forms Found at Kum Tepe (Sperling 1978) and at Aphrodisias

Kum Tepe	Aphrodisias Parallels		
Phases	Fine Ware	Coarse Ware	Average
IA1	99	100	100
IA2	76	70	73
IB1	63	71	67
IB2	53	83	68
IB3	32	73	53
IB4	53	100	7 7
IC1	72	_	72
IC2	60	_	60
Total average	64	83	71-74

^{258.} Sperling 1976. No parallels could be found for Figures 19.6-1-608, 610, 615, 623, 627 and 628. But note that Figure 19.626 is the same general type as CC13 (Figure 392.31).

^{259.} Ibid. Figure 20.637-641; 643-646, 649-650 and 660.

All in all, we encounter a remarkably high figure of a 71-74 % correspondence of shape-forms between the two sites. The number of parallels are their highest (100 %) in phase IA1, and then a gradual decline to 53 % in IB3 after which there is again an increase in similarity between the two assemblages. On the basis of these figures, it is safe to say that the pottery assemblage from Aphrodisias extends over all phases found at Kum Tepe. These shape-forms may then be said to cover approximately the same chronological periods at both sites. No frequencies of occurrence have been published from Kum Tepe and allowances must be made for differing development rates of the two areas, 274 but these percentages should certainly be kept in mind.

Sperling (1976:30) relates Kum Tepe phase IA to Beycesultan L.Ch.2, and phase IC at Kum Tepe to L.Ch.3. However, some of Sperling's correspondances are not useful choices: for phase IA = Beycesultan L.Ch.2, he has selected mottled colors in the fine-ware fabrics, rolled-rimmed bowl shapes, pattern burnishing, lug handles and baking tray types²⁷⁵ — both at Beycesultan and at Aphrodisias, these shapes appear in other contexts that are not solely restricted to the L.Ch.2 period. For the equation of Kum Tepe IB with Beycesultan L.Ch.3, Sperling supports his argument with only one paralleled incurving bowl rim²⁷⁶ (which, however, finds a correspondence at Aphrodisias, having its highest frequency of occurrence in Level VIIA of Late Chalcolithic 3).

Sperling places seven types into one group (Sperling, 1976: Fig. 8, 102-108) that he parallels to earlier contexts including levels X-IX at Emborio, at Beşiktepe and at Saliagos. One of these types appears in Pekmez trench 2 in Level VIIIC; 277 three appear in Level VIIIB; 278 in

- 274. Characteristic of the Late Chalcolithic pottery repertoire is its slow development and rate of change both the Aphrodisias and Beycesultan sequences are long ones. Mellaart (Lloyd and Mellaart 1962:71) comments: « Most striking, however, is the limited number of shapes and the very slow rate of development that took place during the immensely long period (some 25 building levels) throughout which this pottery remained in use. At Beycesultan at least the Late Chalcolithic potters reveal themselves as endowed with the most pronounced lack of imagination on record in West Anatolian prehistory. »
- 275. Sperling 1978:358; nos. 402, 408, 409, 547. Only two of these forms have been paralleled at Aphrodisias: 402 = XC2 (Joukowsky 1982: Figure 33.2); and 408 = CX38 (Joukowsky 1982: Figure 34.8).
- 276. Sperling 1976:358, no. 546 = CX57 (Joukowsky 1982: Figure 34.8); he compares this form to Lloyd and Mellaart 1962: Figure P.9.7
- 277. For the sake of our analysis, we worked on the assumption that both sites had a parallel ceramic development. If nothing else, this « game » with figures proved beyond a doubt that they did not.
- 278. This is type CX10 (Figure 298.4) = Kum Tepe = Figure 8.104-105.

Level VIIIA²⁷⁹ and one in Level VIID²⁸⁰ — indicating that these forms are members of our earlier assemblages.²⁸¹

In summary, the evidence from Aphrodisias itself does not support the hypothesis of Kum Tepe-Aphrodisias synchronic Chalcolithic developments. In our analysis of the 28 pottery forms in the assemblage of phase IA1 282 (the majority is completely paralleled at Aphrodisias), we found — based on the cluster representation of the shapetype per level — that only 25 % of the correspondences reached their peak in Pekmez trench 2 Level VIIIA of Late Chalcolithic 1; and only 18 % in Levels VIID and VII, suggesting that any number of different factors might be present; the cultural associations at Aphrodisias may have persisted beyond the point it was in use at Kum Tepe or vice versa — There is a strong possibility that more alliances will be found in the Kum Tepe material which remains to be studied. The argument is not yet convincing that there is synchronic development, but the implications that the two sites share in cultural affinities cannot be denied.

Fikirtepe

This is a shallow site located on the southern side of the Sea of Marmara in the Asian sector of İstanbul, excavated by K. Bittel (1969-70). The pottery from here has been recognized as being pre-EBI and has been

- 279. Aphrodisias types CX26 (Figure 298.15) = Kum Tepe Figures 8.103, 107; and CX83 (Joukowsky 1982: Figure 30.12) = Kum Tepe Figure 8.106. 45. Aphrodisias type CX89 (Joukowsky 1982: Figure 30.10) = Kum Tepe Figure 8.102.
- 280. Aphrodisias type CX89 = Kum Tepe Figure 8.102.
- 281. Aphrodisias type CX85 (Figure 389.10) = Kum Tepe Figure 9.108.
- 282. A similar study was performed for the other phases to determine if possible when there was a closer alignment between corresponding shape types. In phase IA2, 26 % of the Kum Tepe types were clustered in Aphrodisias Levels VIID and VIIB; in phase IB1, 30 % of the corresponding types fell into Aphrodisias Level VII forms but the overall distributions per level were fairly even; in phase IB2, of the fragments that could be classified, 30 % fell into an Aphrodisias Late Chalcolithic 2 context. In phase IB3, I first analyzed trenches R and S assemblages to determine if there was any perceptible difference between them, and between them and the distribution of coarse wares. When I found that there was not, I combined those shapes that corresponded to our own. The result was that 35 % fell into an Aphrodisias Level VI Bronze Age 1 context and 25 % into a Level VII context — together representing 60 % of the corresponding forms. Of the 19 shapes in phase IB4 of Kum Tepe, 58 % were assigned to Aphrodisias Level VI contexts; of these, 82 % were fine ware shapes. In phase IC1 of Trench U, 64 % of the shapes fell into Level VI, but trench V presented a slightly different picture - 38 % of the forms were distributed in the mixed Levels VIIA and VI, which may indicate these deposits are slightly earlier than those in Trench U. There were too few correspondences in phase IC2 to be meaningful for the Aphrodisias LC deposits, but all ceramic indicators point to the fact that this is also a mixed deposit at Kum Tepe.

traced to the north and eastern coasts of the Sea of Marmara (French 1967:56-57, map 2; and Bittel op. cit.), but the actual dating of this material is in dispute. On one hand, it has been linked to Hacılar and attributed to the Late Neolithic by Mellaart (CAH 1: 1.316) and by French (1967:56-57), although French does suggest that the links are inconclusive. On the other hand, M. Mellink (1965:127) proposes that these wares should be dated to the fourth millennium B.C. Late Chalcolithic black-slipped and burnished bowls occur in this same area (French 1967:57-58), which suggests a date somewhat earlier than the fourth millennium, probably the fifth.

In 1979, I had an opportunity to handle the Fikirtepe material at the Prehistoric Laboratory at the University of İstanbul. An in-depth study of the site and its remains has been undertaken by Mehmet Özdoğan (1979), which may shed more light on the site's intercultural connections. There were superficial linkages with the Aphrodisias ground stone industry.²⁸³ However, concerning the pottery, I noted several factors strongly indicating that during the Late Chalcolithic, at least, no direct linkage existed between Fikirtepe and Aphrodisias. Fikirtepe ware-fabrics are thinner and oxidized more than those of Aphrodisias; when hit they have a more resounding clink. And inclusions are more granule in consistency. On the whole, the wares are redder, mottling is more common, and almost all of the fine wares are burnished to a high luster. There are even few similarities (3 %) in shape-forms, so it is clear that this site had a potting tradition which is quite different from that which existed at Aphrodisias. Perhaps its cultural synthesis can be found in the Balkans?

It would be presumptuous to tie in and date this material to ours. Also it is unlikely that they are Late Chalcolithic as Mellink proposes. If they are, they bear little resemblance to the black-burnished wares of the southwest. We are not on firm ground as to when or with what tradition a cultural linkage might have taken place.

Demirci Hüyük

Demirci Hüyük, 5 to 7 m in height, 80 m in diameter, is located 20 km northwest of Eskişehir in west central Anatolia. Excavations were undertaken in 1937 under the direction of K. Bittel, but World War II interrupted their completion. In 1939, Bittel published a preliminary report. In 1974 excavations were methodically resumed by M. Korfmann who has published preliminary reports (1976, 1977, 1978), and at present a complete record of these excavations is in press.

283. A large disk B.123, Level 96; smoothed stones such as B.120, Level 96; and a figure-8 figurine, Level 101, P.122.

From the very early investigations, four levels, 1-IV (Demirci IV, the oldest) are identified. The architecture associated with Demirci IV is a mudbrick structure. There is a break between Demirci IV and III. Demirci III ceramic corpus includes burnished brown, red, and blackmottled or so-called « black-topped » wares.

One of the purposes implicit in the later excavations was to establish the stratigraphy — several levels, E to P (E being the oldest), confirmed the earlier investigations: that Demirci IV can be linked to Hacılar and probably to Firkirtepe and is « Chalcolithic recent », and that later levels represented by approximately 15 architectural phases belong to the Early Bronze I-II periods.

In August 1980, members of the Demirci excavation team visited Aphrodisias and examined the small finds and ceramics. Similarities existed between the Bronze Age ceramics and small finds, but were few in comparison with the Late Chalcolithic, although some of the inverted bowl shapes are thought to be similar. Connections between these two sites will become better understood with their final publication.

Balıkesir-İznik Akhisar-Manisa

Northeast of İzmir and north of Yortan in western Anatolia, between modern Akhisar and Manisa are sites that were surveyed by D.H. French. Plain burnished wares were found (French 1965b:19-20; 1967:56; 1969: 58) which bear close relationship to the Aphrodisias assemblage — particularly the flaring and inverted bowl forms, ²⁸⁴ simple linear white-painted motifs, (French 1961: Fig. 5.1) and the predominance of black burnished wares. The white-painted designs consist of cross-hatched triangles, (*ibid.* Fig. 5.2, 9), hatched triangles and banded motifs (*ibid.* Fig. 5.50).

Possible Northwestern Interconnections

Besides his surveys of northwestern and western Anatolia, D.H. French has surveyed areas in the Aegean for information that might contribute to the development of a theory that would point to the stylistic and chronological

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284. D. French 1961. Three forms from Paşaköy-Balıkesir:

Figure 5.5 = CX59 (Figure 299.6)

Figure 5.6 = CX37 (Figure 384.12)

Figure 5.7 = X80 (Figure 298.10)

One form from Kayışlar, Figure 5.13 = CX62 (Joukowsky 1982: Figure 37.7); and this has a horizontal spool lug handle like CH25 (Joukowsky 1982: Figure 43.8)

One form from Arpalı I,

Figure 5.41 = CX8 (Joukowsky 1982: Figure 35.18)

These forms from Arpalı II S.,

Figure 5.18 = XC3 (Joukowsky 1982: Figure 33.4)

Figure 5.20 = CX58 (Figure 392.9)

Figure 5.30 = CX15 (Figure 377.7)
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relationships among sites in the region itself — information that might suggest some lines of development with the southwest. (French 1961:100ff.; 1965:15ff.; 1967:49ff.; 1969:41ff.) He collected and published pottery from Thessaly, Thrace, and Macedonia — which will be summarily discussed.

Thessaly

In the Aegean, one of the best Neolithic pottery sequences is the Thessalian that was established first by C. Tsountas (1908) and then by Milojčić (1959) and most recently by Wijnen (1982). The well-known Sesklo A begins the Middle Neolithic and this is followed at Elateia and Corinth by black burnished wares (Renfrew 1972:65). Similar forms have been found in Yugoslavia.

In 1959, D. French (1961:100) resurveyed the area between Larisa and Volos, adding 20 new sites to those already known. The pottery from Dhimini, Larisa, Rakhmani appear to fit nicely within the Thracian and Macedonian culture divisons. In our analysis of shapeform, ²⁸⁵ several correspondences could be found. In these areas, however, there is a prevalence of dramatic white-painted motifs on many of the common vessel forms. The occurrence of fruitstands and incised wares also indicated a completely different culture province with a possible overlapping of certain shapes.

Renfrew and others suggest resemblances between Sitagroi of eastern Macedonia and the Vessilinovo Culture of Bulgaria. In early levels, Thracian Paradimi can also be tied in with Sitagroi, and Renfrew (*ibid*.) wisely remarks:

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Four forms from Pamucku S.,
              Figure 5.17 = CX17 (Joukowsky 1982: Figure 32.8)
              Figure 5.58 = CX57 (Joukowsky 1982: Figure 34.8)
              Figure 5.60 = X73 (Joukowsky 1982: Figure 34.13)
              Figure 5.61 = CX3 (Figure 377.20)
    Four forms from Pamucku,
              Figure 5.35 = XC23 (Figure 399.3)
              Figure 5.37 = CX4 (Figure 377.6)
              Figure 5.39 = CX67 (Figure 405.28)
              Figure 5.40 = XC28 (Figure 405.17)
    Five forms from Ovaköy,
              Figure 5.50 = CX10 (Figure 298.4)
              Figure 5.53 = CX9 (Figure 297.1)
              Figure 5.54 = CX28 (Joukowsky 1982: Figure 30.5)
              Figure 5.56 = CX27 (Figure 298.16)
              Figure 5.57 = CX24 (Figure 298.20)
285. French 1961:100.
              Figure 14.1 = CX40 (Joukowsky 1982: Figure 30.20)
              Figure 14.2 = CX21 (Figure 297.4)
              Figure 14.10 = CJ3 (Figure 399.33)
              Figure 15.5 = CJ4 (Figure 384.71)
              Figure 15.10 = CX34 (Figure 384.69)
              Figure 15.12 = XC28 (Figure 405.17)
              Figure 15.13 = XC23 (Figure 399.3)
              Figure 15.16 = XC20 (Joukowsky 1982: Figure 31.7)
              Figure 15.17 = CX24 (Figure 298.20)
              Figure 15.18 = CX9 (Figure 297.1)
              Figure 15.20 = CX10 (Figure 298.4)
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« Whether the similarities... can be explained by Aegean « influence » on the Balkans or vice versa or perhaps Anatolian influence on them both, remain to be established. »

The Sitagroi dates (Renfrew 1971:275-282) strongly support the view that the Balkan Chalcolithic was contemporary with the later Neolithic Aegean period. Depending upon the calibration of the radiocarbon dates, the Sitagroi chronology may correspond to that of our later Late Chalcolithic and Early Bronze Age levels at Aphrodisias. Gardner (1979:21) states:

« At Sitagroi, where it was found in quantity, the graphite painted pottery levels have been radiocarbon dated with a true age of approximately 4650 B.C. » ²⁸⁶

Thrace

In the western half of Greek Thrace, French surveyed sites in the Plain of the Angista. Three sites — Drama, Dikili Tash, and Paradimi — produced material with parallels of great interest, even though the dating of these sites is problematic.

At Drama there is a distinct tradition of white-painted designs with sophisticated linear motifs²⁸⁷ — however, some of the flaring bowl shapes (22 % of the bowls)²⁸⁸ do correspond to Aphrodisias types. But, there are more shape-forms that cannot be paralleled: inverted bowl shapes and types that are rolled to the interior with

286. Analyses of the C-14 dates from this site (Renfrew 1972:219) are as follows:

as follows	:		
Lab. No			Date B.C.
Bln-773	Sitagroi IV	Macedonian	2240 ± 100
		Final Neolithic	
Bln-782	Sitagroi IV	Macedonian	2360 ± 100
		Final Neolithic	
Bln-781	Sitagroi Vb	Macedonian E.B.A.	2135 ± 150
Bln-780	Sitagroi Vb	Macedonian E.B.A.	1920 ± 10
		dates is still imprecise, be approximate.	Gardner's high
287. There is on	nly one fragme	nt that is similar in de	coration: ibid.
Figure 8.5	= Aphrodisias	(Figure 384.45).	
288. French 196	1:	,	
Figu	re 10.3 = X80	Aphrodisias (Figure 29	8.10)
Figu	re $10.14 = X6$	l (Joukowsky 1982: Figi	ire 33.14)
Figu	re 11.5 = CX	82 (Joukowsky 1982: Fi	gure 31.6)
Figu	re $11.7 = X94$	(Figure 298.18)	
		6 (Joukowsky 1982: Figu	
Figu	re 11.16 = XC	15 (Joukowsky 1982: Fi	gure 30.24 —
		French corresponds t	his to a Troy I
		form)	
Figu	re 11.20 = CX	10 (Figure 298.4)	

Figure 12.7 = CX40 (Joukowsky 1982: Figure 30.21)

= CX34 (Figure 384.69)

= CX33 (Figure 384.70)

= CX37 (Figure 384.12)

= X69 (Joukowsky 1982: Figure 33.11)

Figure 12.15 = CX11 (Figure 298.8, 9) Figure 12.16 = CX37 (Figure 384.12)

Figure 12.17 = X80 (Figure 298.10)

Figure 13.1 = CX21 (Figure 297.4)

Figure 13.2

Figure 13.3

Figure 13.6

Figure 13.8

a pronounced thickening; pierced rectangular-shaped large lug handles; as well as incised decoration not common to Aphrodisias.

At Dikili Tash a similar picture emerges: there are many of the same form types²⁸⁹ plus one simple white-painted fragment that is similar — but the flamboyant white-painted designs are not found at Aphrodisias. The Drama and Dikili Tash rolled rim bowls that are thickened on the interior occur at Kum Tepe IB but, as previously mentioned, not at Aphrodisias. However, small lug handles or knob handles²⁹⁰ can be paralleled at Aphrodisias as can the flattened loop *cum* lug type.²⁹¹

From the site of Paradimi (French 1961:128), overlooking the Bokloutza River in Turkish Thrace, a different bowl assemblage, dominated by inverted rims, was recovered. These fragments are in the Salonika Museum. Many of them can be paralleled at Aphrodisias²⁹² — but again, although the bowl forms may find correspondences, the white-painted and incised motifs associated with these wares do not. One small flat base type (French 1961: Fig. 7.10), resembles type B81 (Figure 297.6) of Aphrodisias.

Kanallı Köprü is a small mound that French (1961: 100) discovered. French locates this site 11 km west of Silivri in what was eastern Thrace. He found there three fragments — the first two are body sherds, one of which is decorated with a cord-impressed design (*ibid*. Fig. 6.1) — the third is an inverted bowl (*ibid*. Fig. 6.3), which can be paralleled at Aphrodisias to type (XC4 Figure 399.2).

Macedonia

Overlooking the Derveni river, 2 or 3 km below Stivos village, D. French (*ibid*. 100) visited the double mounds,

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289. Ibid. Figure 8.1 = CX37 (Figure 384.12)
          Figure 8.2-4, 11, 32 = X80 (Figure 298.10)
          Figure 8.5 = CX85 (Figure 389.10)
          Figure 8.6 = CX31 (Figure 298.19)
          Figure 8.10 = X82 (Figure 298.5)
          Figure 9.7 = CX3 (Figure 377.20)
          Figure 9.12 = CX12 (Figure 298.3)
          Figure 9.18 = X61 (Joukowsky 1982: Figure 33.14)
          Figure 9.31 = X76 (Joukowsky 1982: Figure 30.7)
          Figure 9.36 = CX56 (Joukowsky 1982: Figure 31.17)
          Figure 9.37 = XC21 (Joukowsky 1982: Figure 31.4)
290. Ibid. Figure 8.10 and 9.2 = CH35 (Figure 392.52).
291. Ibid. Figure 8.11 = Aphrodisias H36 (Figure 399.10)
292. Ibid. Figure 6.9 = XC20 (Joukowsky 1982: Figure 31.7)
          Figure 6.6 = CX57 (Joukowsky 1982: Figure 34.11)
          Figure 6.26 = X72 (Figure 300.6)
          Figure 6.29 = X77 (Figure 405.35)
          Figure 6.30 = CX66 (Figure 405.33)
         Figure 7.1 = XC5 (Joukowsky 1982: Figure 34.10)
         Figure 7.6 = XC1 (Figure 396.7)
         Figure 7.16 = X94 (Figure 298.18)
         Figure 7.18 = CX39 (Figure 384.78)
         Figure 7.19 = CX60 (Figure 402.3)
         Figure 7.26 = XC24 (Figure 399.37)
         Figure 7.28 = CX27 (Figure 298.16)
         Figure 7.29, 30 = XC2 (Joukowsky 1982: Figure 33.2)
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A and B, of Stivos (« Gumelnitza »). He reported that the pottery seemed to be very much in the same tradition of white-painted and incised wares as are found in the assemblage from Drama. Stivos A pottery has been published by Heurtley (1939). Again, bowl rims that are rolled and thickened to the interior are common with few parallels at Aphrodisias — however, three forms from this assemblage of the 25 published fragments do resemble those from our site. D. French (1961) Figure 13.18 = XC6 (Joukowsky 1982: Figure 34.12); Figure 13.26 = XC4 (Figure 399.2); Figure 13.30 = CX10 (Figure 298.4).

The Drama Plain. In their study of the Greek Neolithic and the migrations of people between Anatolia and Europe from 6000 to 3000 B.C., M. Gimbutas and C. Renfrew have excavated Sitagroi in the Plain of Drama. This site is strategically situated as a crossroad between the Balkans, the Aegean and Anatolia. Greek Macedonia and Thrace form a corridor connecting Europe with the East. Inland routes run along river valleys, particularly the Vardar River. Excavations here have revealed a spread during the Early Greek Neolithic of the so-called Sesklo Culture. From the Middle Neolithic period onward, central and eastern Macedonia and Thrace maintained close affinities with the north. Late Chalcolithic features found in this area include the crescentic lug, strap-handled lugs and white-painted wares (Gardner 1979:19) — all of which are ideas that travelled to and/or from Aphrodisias! These features, briefly discussed below, indicate a flow of people and ideas to and perhaps from Greece, the Aegean, and Anatolia and even from the Balkans.

E. Gardner (1979:19-20) has seen and handled both the Bulgarian and Romanian white-painted or « graphite-painted » wares, housed in major and provincial museums, found that there were « surprising differences » between the collections of Sitagroi and those form Gumelnitza in Romania. The differences were basically in the technique of paint and painting, not necessarily in vessel shapes.

In his discussions of the like material from Dikili Tash in Thrace and the Drama Plain in Macedonia, French (*ibid.* 114) suggests their lengthy duration. In addition he (*ibid.* 115) remarks:

« The shapes of the graphite-painted ware strongly resemble those of Beycesultan 3-4 and Kum Tepe Ib. Whether these resemblances are accidental is not clear. It is necessary to view the graphite-painted pottery cultures as a whole and in their proper sequence before it can be established whether the shape... is due to local development or outside influence. However, the occurrence of at least three shapes and possibly four in graphite-painted ware which are known to be Western Anatolian and which can with some accuracy be placed in sequence is probably more than coincidence.

In all probability, small waves of northwest Greek immigrants were moving east, or southwest Anatolian

immigrants to the northwest. It is not surprising to find Balkan elements in the southwestern Late Chalcolithic.

With regard to the question of the nationality of the Late Chalcolithic culture, the issue of continuity or discontinuity between different sites at this period is indecisive. Exchange of ideas before the Bronze Age are indisputable and a mixture of population elements are entirely possible, indicated by the numerous archaeological lines that exist.

Cilicia

Two excavations in Cilicia — at Mersin and Tarsus — have aided immeasurably in the exploration of prehistoric Anatolia as both excavations have been well-published. Mersin and Tarsus are only 27 km from one another on the southern coast of western Cilicia. Both sites are situated at advantageous geographical points for exchange systems to and from the coast and south into Syria, north to Central Anatolia, to the Konya and Ankara areas via the Calycadnus Valley (Göksu in Turkish), and to eastern Anatolia.

These two sites are of interest because their development is intertwined. When there is a gap in the stratigraphy of one, there is an intense period of activity at the other — but more importantly their development relates to the absolute chronologies of Egypt and Mesopotamia and to the relative chronology of northern Syria. Due to a rise in the water table, virgin soil or bedrock was not reached at either Mersin or Tarsus.

Mersin

Mersin, Yümük Tepe, is 3 km northwest of the modern port city of Mersin (see map, Figure 4). It is situated in the western tip of the Cilician Plain and is an imposing mound measuring 25 m in height — unfortunately its west flanks have been heavily weathered by river erosion. Excavations were undertaken first from 1937 to 1939, then from 1946 to 1947. They have been published by J. Garstang (1953).

Trench X was excavated to a 13 m depth on the northwest side of the mound — 19 levels were distinguished and allocated alphabetic designations, M to Z, relating to pre-Hittite, Early Bronze and Chalcolithic periods. These levels were then used to serve as a guide for the main excavation area which was assigned 33 levels, I-XXXIII, from the most recent deposits to the oldest.

Mersin XXXIII-XXV were ca. 10 m of excavated deposits assigned to the Neolithic, which falls considerably earlier in time than the developments charted at Aphrodisias. In Level XXV a long rectangular building was found and artifacts of interest include chipped stone javelin heads and daggers. The pottery is gray and gray-

black burnished wares which show connections with Amuq A-B and the Syrian Coast.

Levels XXIV-XIIB were assigned to the Early Chalcolithic because Ubaidian wares were found (Garstang 1953: 59, 62). Level XVI's most outstanding architecture was a burned fortress (*ibid*. Figure 79). Level XIIA was assigned to the Early Copper Age and was characterized by caliciform-shaped vessels and a black-slipped burnished ware with white-painted decorations. These wares were associated with a burned habitation level composed of mudbrick superstructures over stone foundations.

Parallels between Late Chalcolithic Aphrodisias and comparable levels at Mersin do not exist because only 3 % of the Mersin assemblage found corresponding shapes. The vessels that did find alliances were probably due to similarity of bowl shapes manufactured in dark wares during the early periods.

Superimposed on Level XIIA were the buildings of Level XI which the excavator ascribed to the second millennium — therefore an architectural hiatus exists at Mersin between the so-called Early Copper and Middle Bronze Ages. This does not mean there was no Early Bronze Age activity at the site between Levels XIIA and XI — these were ditch deposits, which will be referred to infra.

Tarsus

Tarsus is a höyük located near the modern village of Tarsus in Cilicia. It was excavated from 1934-39 and from 1947-48 under the direction of H. Goldman who published the results in 1956. The site has a long stratigraphy that begins with the Neolithic period and continues without a break into the Early Bronze Age, when it enjoys a long and flourishing development. Two areas, A and B, were excavated — each was located on the summit of the mound.

Minimal architectural remains can be associated with the Neolithic period but black-burnished, sometimes decorated, ceramics can be paralleled to Amuq A-B. During the Chalcolithic period, there is an influx of Halafian and Ubaidian painted wares that co-exist with indigeneous monochrome ceramics. At the transition between the Chalcolithic and Early Bronze Ages, painted ceramics disappear completely — and there is a presence of coarse red wares that begin to dominate the assemblage. These we will return to *infra* with the discussion of the Tarsus Early Bronze Age.

The problem central to this discussion is to link Aphrodisias and the Anatolian southwest with cultural sequences from other areas — but after study of Mersin and Tarsus excavation reports, we could find no real related cultural horizon between Cilicia and the southwest.

Cilician connections are not clear but it may yet be proved that through the interaction of various intermediary communities that some sort of ties did exist. Mellink (1965:114) suggests the common southwestern flared form may be related to Tarsus EB I shape-forms even though there is an absence of other connecting features. In the discussion of these interconnections, Mellaart (1962:Fig. P. 2.7.10) compares the L.Ch.1 Beycesultan everted exterior-thickened bowl rim to Mersin Halafian type bowls (Goldman 1956:Fig. 72.2, 74.6), and the Beycesultan flaring bowl types (Lloyd and Mellaart 1962:Fig. P.1.43) to those from Mersin Levels XIX-XVII (op. cit.). But as Eslick (1978:134) observes:

« These comparisons should be kept in mind although obviously both sets cannot be valid. There is really too little evidence for any correlation. »

This must remain an open question but the Aphrodisias correlations show less than 5 % — thus there is risk in equating the two site assemblages.

The Konya Plain

Can Hasan

Can Hasan is situated on the S border of the Central Anatolian Plateau 13 km to the N of Karaman. Its location is strategic — for it lies at the end of a route through the Taurus mountains from the Mediterranean, through the Calycadnus Valley into the Karaman Plain. Can Hasan measures 360 by 280 m and it rises to 5 m above the plain. It was excavated and published by D. French (1962, 1964a, 1965, 1966, 1967a), who undertook the study with the aim of recovering an intermediate pottery sequence that might link the site to Çatal Hüyük in the Central Plateau, and then in turn, relate the two areas to Cilicia. His selection of the site was problem-oriented to ascertain whether Can Hasan was an important center for exchange systems. French identified seven levels which he then placed into three periods. The chronology (French 1967a:75, chart 2) is as follows: Level 7, the earliest. = ca. 5400-5000 B.C.; Level 3 begins at 5000 B.C. to end after 4900 B.C.; Levels 2B1 and 2 had their common terminus sometime around 4700 B.C., Level 2A1 after 4600, and Level 1 ended somewhere around 4000 B.C.²⁹³

293. Can Hasan radiocarbon dates. (Eslick 1978:244).

Dys. Cuit IIusuii it			
Can Hasan I 2B	Sample	Material	Date B.C. (5568 half-life)
	P-794	Charcoal	5083 ± 89
	P-795	Charcoal	4882 ± 78
	P-790	Charcoal	4880 ± 78
	P-791	Charcoal	4805 ± 80
	P-792	Charcoal	4720 ± 76
	P-793	Charcoal	4304 ± 78
Can Hasan I 2A	P-789	Charcoal	5030 ± 79

Only two levels contained recognizable architectural elements. In both, buildings consisted of houses with mudbrick walls reinforced with timber beams resting on stone foundations. The earliest settlement was composed of a well-planned scheme of densely-packed houses. It was probable that house entrances were from the roofs, a well-known characteristic of the houses at Çatal Hüyük. Modifications in house plans were undertaken in the later second settlement: the houses were not as carefully constructed as their predecessors but there were open spaces left between individual dwellings, presumably for courtyards.

Painted, incised pottery and burnished wares were characteristic of Can Hasan. Alliances between these wares have been drawn between Hacılar and Mersin Levels XIX-XIII and Halaf (French 1962:29). French (*ibid*. 32) also found connections with Büyük Güllücek (*infra*) that suggested to him its settlers may have had their origin in the Konya Plain.

Present evidence suggests there is risk in making correlations between Aphrodisias and Can Hasan. There is however a 3 % coarse ware correspondence between the two sites — Can Hasan does have baking trays in the Late Chalcolithic levels (French 1965:94, Fig. 5.3), but the fine wares appear to be from a different potting tradition and bear few correspondences to the southwest. In his own study, Orthmann (1963:96) points out that there are few correspondences between central and southwestern Anatolia during this period.

North Central Anatolia

Alaca Höyük

At Alaca Höyük (Koşay and Akok 1966) and at Büyük Güllücek (Koşay and Akok 1957), most of the pottery is known only through surface exploration, and its dating is therefore not precise. Coarse wares of this area were manufactured during the Late Chalcolithic and Early Bronze Ages. The ware-fabrics have a relatively high percentage of inorganic and organic temper, have discolored black or gray cores, are usually buff or red in color, and plug-affixed handles are common (Mellaart 1963b:217, 223-224, 226; Fig. 9.34; 12.42). Flared open bowls are prevalent (Mellaart 1963b:217, Fig. 9.28) as well as lug handles (*ibid.* 217, 223; Fig. 9.37-39; 12.26). Although there are shared ideas in the pottery tradition, there is risk in assuming any contact between Alaca Höyük and Aphrodisias, or the southwest in general.

THE EARLY BRONZE AGE

The slow steady Late Chalcolithic period slipped imperceptibly into the Anatolian Early Bronze Age I in western Anatolia, and the events taking place at Aphrodisias seem to indicate that it was no exception. There had been a firm attachment to the Late Chalcolithic, but at some point in the last third of the third millennium, well after the Anatolian Early Bronze I was underway, a dramatic change took place. What is evident from the Aphrodisias stratigraphic record is that there was a change in the settlement pattern — a population move from Pekmez to the Acropolis mound. Although both mounds were settled by the Early Bronze Age II, there is a greater settlement concentration on the Acropolis mound from this time onwards. It is not clear why or how this happened — it may have been due to the outgrowth of Pekmez and greater population needs, or to the collapse or partial destruction of the Pekmez settlement, or to some unattractive reason such as an epidemic — but it fits in well with the appearance of Anatolian EB II ceramics found in the earliest excavated deposits of the Acropolis. Once underway, the two centuries of the Anatolian Early Bronze Age II are marked by vitality, intense exchange of ideas, expansion of towns and the initial appearance of several fortified walled towns. The period is associated with the vast spread of ceramic ideas flaring red-slipped burnished wares replace inverted carinated black-slipped burnished wares. The appearance of yet another group of black-slipped white-painted wares prevail — unmistakably identified with Yortan in the Early Bronze Age II.

At some point between Early Bronze II and Early Bronze III dramatic changes take place. Most Early Bronze Age II sites in western Anatolia are overcome by massive and violent destruction which brought an end to this period. Intrusion into western Anatolia by the Indo-Europeans has been theorized as the cause, but there may have been other foreign or even indigeneous elements on the move that are as yet unknown. Aphrodisias, like other settlements, was so weakened by external and/or internal problems her people were unable to prevent destruction or being taken over. Thereafter habitation was restricted to the Acropolis mound. The origin of the influx of new ideas and intersite alliances is not yet certain, but much of the Aphrodisias evidence points to a natural development inspired by an even greater contact among peoples in the southwest with those in the northwest and the Aegean. Once underway, the impetus of the EB III brings about an explosive exchange of ideas which set the whole area in motion with a resurgence of strength. The result was that

new settlements were established and expanded to help tie the southwest cultural horizon together and interact with the northwest and the Aegean. These factors indicate greater population densities and shared cultural ideas in ceramics, metallurgy, the megaron architectural design, and pithos burial practices. These concepts may have sprung from different origins, but the evidence points to a widespread acceptance or absorption of ideas over areas which up to this point had little contact with one another. (It is important to note in the following site studies that although shared traditions are emphasized, there were also separate and distinctive architectural and artifactual elements that were in process throughout this period. As noteworthy as the similarities are, the differences are also of importance.) The Anatolian Early Bronze Age III is most clearly recognizable in the spread of ceramics, including wheelmade platters, depas cups, tankards, beak and cutaway-spouted jugs, and red-cross bowls.

Traditionally, in Anatolia, the Early Bronze III has been subdivided into periods A and B. It is not evident yet how these divisions can be applied to the Aphrodisias deposits or to the southwest in general. The stratigraphic sequence at Aphrodisias has no clear-cut divisions from Early Bronze IIIA to IIIB through to the Middle Bronze Age. As the period matures, there are healthy Anatolian communications as elements in the ceramic corpus appear to gain wider geographic acceptance — architectural plans are enlarged, there is greater use of metal and ceramic concepts are consolidated. The Aphrodisians, now settled exclusively on the Acropolis, imported striking forms like depas cups and much that can be traced from other areas such as metal objects. Evidence points to improvement of agricultural techniques; for the village flourished. The Early Bronze Age IIIB Middle Bronze Age appears to be a relatively stable period enriched by this interchange of cultural influences.

As a result the cities, towns and villages discussed in the site abstracts that follow can in varying degrees be placed within a southwestern intercultural framework.

Hereafter extensive ceramic correspondences will not be given except for Early Bronze Age alliances and for Beycesultan-Aphrodisias affiliations.

Western Anatolia

Beycesultan (Early Bronze)²⁹⁴

Characteristic architectural elements of the Early Bronze period (Levels XIX-XVI) at Beycesultan are

294. We equate Beycesultan Level XIX to Aphrodisias Bronze Age 1, and to the end of the Anatolian EB I. Both Beycesultan Level XVII and Bronze Age 2 Aphrodisias belong to the Anatolian EB II-IIIA, and Beycesultan Levels XVI XIII we place with Aphrodisias Bronze Age 3 and also to the Anatolian E.B. IIIA.

megaron-plan rectangular buildings that have mudbrick superstructures on stone foundations. In Beycesultan EB I (the end of Anatolian EB I and EB II see chronology, Part 2, p. 161), Level XIX has an enclosure with 1.25 m foundations constructed of undressed stone and an elaborate timber reinforcement that consisted of four parallel so-called « runner beams » with tied crossbeams at 1.40 m intervals. There may have been either projecting buttresses or towers associated with this wall. In Level XVIII the few articulated building remains are two storage bins. Anatolian Early Bronze II, Level XVII contains the well-known vestiges of the twin shrines, composed of a main room with an altar framed by two plastered stelae with a sunken cavity behind them. The excavators postulate that these shrines were used for a domestic fertility cult. Beycesultan ceramics find many similarities to those at Aphrodisias' 295 as they do to Troy I and to Yortan.

In Beycesultan EB II (Anatolian EB II-IIIA) Levels XVI-XIII there is a continuation of the twin shrines. Level XIV evidences an earthquake. In the three subphases of Level XIII (XIIIa, b, and c), the shrines are no longer used for religious purposes. After a massive conflagration in Level XIIIa, the buildings are abandoned it is possible that a new folk arrived, or that the site was simply reused for it was leveled over. Still handmade, the ceramics are not as elegantly potted or evenly burnished as the wares attributed to Beycesultan EB I. Clays are heavier, buff, pink, gray, or black-colored, and are provided with a thick crackly slip. Shapes are large thick-walled with grooved and ribbed plastic decoration including appliqued lugs, bars and ribs. At Beycesultan coarse wares cease in this period. One of the new shapes appearing is the beak-spouted jug; Lloyd and Mellaart have found correspondences with the vessels of Troy II, the Heraion I on Samos, and Yortan. Forms similar to Aphrodisias are many.²⁹⁶

295. Suggested Beycesultan EB I Aphrodisias Parallels. Lloyd and Mellaart 1962:

Beycesultan	Aphrodisias
Figure P.14.1	Figure 405.40
Figure P.14.12	Figure 405.7
Figure P.14.13	Figure 405.20
Figure P.14.20	Figure 405.23
Figure P.14.21	Figure 405.32
Figure P.14.23	Figure 405.33
Figure P.14.24	Figure 405.32
Figure P.14.30	Figure 405.42
Figure P.14.34	Figure 405.15a
Figure P.14.38	Figure 405.8
Figure P.15.18	Figure 405.28
Figure P.15.25	Figure 405.17
Figure P.16.9	Figure 405.15a
Figure P.16.11	Figure 405.11

Beycesultan EB III. Levels XII-VI are divided into two phases: EB IIIA Levels XIIC-VIII (Troy III, IV) equates with Anatolian EB IIIB, and EB IIIB (Levels VII-VIA Troy V) equals Anatolian MB-EB IIIA is considered to be a poor period — one of cultural lag at Beycesultan resulting from what Mellaart suggests were the Indo-European invasions that took place at the end of EB II. In Level XII, city walls averaging 0.60 m in width are constructed, composed of mudbrick on substantial undressed stone foundations. In Level XI no new architectural elements are introduced, but Levels X-VIII are characterized once again by megaron-like architectural plans. Levels VII and VI are represented by a complex of small buildings.

296. Suggested Beycesultan EB II Aphrodisias Parallels. Lloyd and Mellaart 1962:

Aphrodisias

Beycesultan

Deycesulluli	Apitiouisius
Figure P.22.1	Figures 407.7, 421.16 (rim only)
Figure P.22.4	Figure 461.10
Figure P.22.11	Figure 421.6
Figure P.22.13	Figure 407.3
Figure P.22.14	Figure 407.17
Figure P.23.1	Figure 407.7
Figure P.23.14	Figure 407.17
Figure P.24.6	Figure 419.20
Figure P.24.11	Figures 407.4, 419.28
Figure P.24.16	Figures 419.16, 419.25
Figure P.24.20	Figure 419.2 or 421.2
Figure P.24.38	Figure 477.3
Figure P.25.7	Figure 407.15
Figure P.25.8	Figure 407.26
Figures P.27.4; 36.2	Figure 421.26
Figure P.28.1	Figure 500.2
Figure P.28.9	Figure 461.8
Figures P.30.10	
P.36.4, 37.14	Figure 503.2 (rim)
Figure P.30.12	Figure 461.4 (handle)
Figure P.31.3	Figure 421.7 (handle)
Figure P.31.9	Figure 419.4
Figure P.31.21	Figure 419.9 (rim only)
Figure P.31.22	Figure 419.22
Figures P.34.7; 35.5	Figure 500.10 (crescentic-shaped lug)
Figure P.36.8	Figure 407.26
Figures P.37.14	
(rim, P.36.4,	
P.30.10)	Figure 500.2
Figure P.38.7	Figure 419.7
Figure P.38.8	Figure 407.13
Figure P.38.9	Figures 407.14, 419.4
Figure P.38.21	Figure 419.9 (rim)
Figure P.38.22	Figure 419.22
Figure P.40.3	Figure 421.5
Figure P.41.5c	Figure 407.16
Figure P.42.2	Figure 407.6
Figure P.42.5	Figure 370.15
Figure P.44.18	Figure 370.11
Figure P.44.20	Figure 419.14
Figure P.46.3	Figure 419.8
Figure P.46.4	Figure 419.6
Figure P.46.5	Figures 407.11, 419.35
Figure P.46.6	Figures 407.10, 419.12
Figure P.46.8	Figure 370.19
Figure P.46.12	Figure 461.11 (podic foot)

One of these had an open courtyard used as a kitchen, with its west end enclosed by a screen; it is paved with either pebbles or small cobblestones.

The pottery continues to be handmade, however by the last phases of the Early Bronze Age III more and more pottery is wheelmade; many forms can be paralleled at Aphrodisias.²⁹⁷ Mellaart has reasoned that the use of the wheel for ceramic manufacture is evidence for a new ethnic element. In the EB IIIB period, Beycesultan shows a renaissance of fine burnished wares; there is a revival of local styles and many of the finer shapes continue to be made by hand. The clays are buff or pale red colors and slipped with a thin red, buff, or brown coating. This period is characterized by depas cups which make their first appearance at Beycesultan, showing cultural contacts with Troy and the Aegean; there are also incised duck vases, askoi, in Level IX, and plain askoi from Levels VIII and VII. Red cross bowls occur frequently, as do bowls with beaded rims and moustache-

297. Suggested Beycesultan EB III A Aphrodisias Parallels. Lloyd and Mellaart 1962:

Beycesultan	Aphrodisias
Figure P.47.1	Figures 374.4, 423.1-6
Figure P.47.2	Figure 436.1
Figure P.47.57	Figure 408.13
Figure P.47.54	Figure 423.19
Figure P.47.56	Figure 423.14
Figure P.47.57	Figure 436.5
Figure P.47.59	Figures 408.9, 408.10
Figure P.47.60	Figure 408.2
Figure P.47.61	Figures 436.8, 436.9
Figure P.47.59	Figure 442.1
Figure P.47.56	Figure 442.2
Figure P.47.57	Figure 442.7
Figure P.47.41	Figure 442.13
Figure P.47.18	Figure 442.22
Figure P.47.29	Figure 442.11
Figure P.47.48	Figure 442.25
Figures P.47.22,	
P.52.1	Figure 442.21
Figure P.48.3	Figure 436.6
Figure P.48.6	Figure 442.5
Figure P.48.14	Figure 436.14
Figure P.48.15	Figure 444.24
Figure P.48.23	Figures 408.4, 436.4
Figure P.49.3	Figure 436.4
Figure P.49.7	Figure 408.8 (ribbed)
Figure P.50.12	Figure 436.6
Figure P.50.14	Figure 442.11
Figure P.50.36	Figure 374.10
Figure P.50.37	Figure 436.10
Figures P.50.40, P.50.45	Figure 439.9
Figure P.50.48	Figure 439.19 (Although Aphrodisias handle does not extend
F: D 52.2	above the rim.)
Figure P.52.2	Figure 442.26
Figure P.52.16	Figures 408.14, 442.22
Figure P.53.6	Figure 436.17 Figure 439.28
Figure P.54.4	Figure 442.8
Figure P.55.21	Figure 442.6 Figure 444.2
Figure P.55.46	Figure 296
Figure P.56.9	riguic 250

shaped appliqué ribs, pattern-burnished gray wares akin to Minyan wares and teapots. Roughly contemporary with Beycesultan Level VI and Aphrodisias Bronze Age 4 - Middle Bronze is Kültepe Karum IV, *infra*. Beycesultan-Aphrodisias ceramic parallels can be found in the notes. ²⁹⁸ More will be said about Middle Bronze Age Beycesultan, *infra*.

Other Maeander Plain Sites

Associated with the Maeander river valley are a number of sites that through surface collections and modern construction have turned up ceramics that can be allied with Aphrodisias and Beycesultan Late Chalcolithic and Early Bronze Age sequences. Finds are still meager for these sites but with more research our understanding of this valley will continue to grow. Nevertheless there are hints, there were intermediate sites that linked the valley to the Aegean.

Sites just to the east of Aphrodisias are Solmaz and Medet in the Tavas region. A few finds have turned up that have found their way to the Aphrodisias Museum and are in the process of publication, Chance Finds of the Anatolian Early Bronze Age in the Aphrodisias Museum (Joukowsky 1985). In our analysis of the Solmaz A and B collections there were Late Chalcolithic-Early Bronze Age affinities, particularly with Solmaz A materials which had black-slipped flaring bowl rims, donut-shaped handles, and coarse-ware knob lug handles. Solmaz B and the material from Medet appears to have been later and more similar to Aphrodisias Bronze Age 2 white-painted wares that are Yortan inspired.

A study of the surface collections at several sites was undertaken by Ş. Tül (1981). They include Kavaklıkahve and Togartepe located to the S of Bozdoğan; Nazilli in the Ak Çay river valley; Bahçetepe, near classical

298. Suggested Beycesultan EB IIIB Aphrodisias Parallels. Lloyd and Mellaart 1962:

Beycesultan	Aphrodisias
Figure P.57.27	Figure 412.15
Figure P.57.21	Figure 412.5
Figure P.58.30	Figure 412.6
Figure P.59.24	Figure 444.26
Figure P.60.7	Figure 408.23
Figure P.60.8	Figure 408.26 (podic foot)
Figure P.61.22	Figure 408.22
Figure P.63.37	Figure 412.7
Figure P.63.38	Figure 439.16
Figure P.63.50	Figure 439.23
Figure P.63.40	Figure 439.8
Figure P.64.8	Figure 439.33
Figure P.65.20	Figure 442.4
Figure P.66.7	Figure 442.28
Figure P.67.3	Figures 439.18, 444.22
Figure P.67.8	Figures 439.20, 439.13
Figure P.69.6	Figure 439.12
Figure P.71.10	Figure 439.38

Nysa between Nazilli and Aydın; ancient Aydın; and off the coast N of Didyma — Rabbit Island or Tavşanadası, as it is known in Turkish. All of these sites can be found on the map, Figure 4. The pottery from Kavaklıkahve, Bahçetepe, Aydın and Tavşanadası has been redrawn and is presented in Appendix 1. Direct contact between Aphrodisias and all of these sites is assumed for 80 % of the ceramics and the small stone artifacts find parallels.

Kusura

Kusura is a mound and cemetery to the east of the Sandıklı plain near Afyon Karahisar, 200 km northwest of Konya and approximately 275 km to the east of İzmir; it lies ca. 175 km northeast of Aphrodisias. The mound is about 400 m long and 14 m high. The width can no longer be ascertained because the northern side has been cut away by the villagers, but from the topographic map it would probably have been ca. 300 m wide.

Kusura was excavated by Lamb from 1935-37 (Lamb 1936b, 1937). It was first occupied in the Chalcolithic period at about the close of the fourth millennium. The stratigraphy was divided into three strata identified as Kusura A, B and C. The earliest of these is the settlement on the mound known as Kusura A (Lamb 1936:14-15, Figs. 5. 1-2, 4-5; 6.12-13), which together with the excavated cemetery of 14 tombs must begin at the end of the Chalcolithic period; there are considerations that suggest it continues into the Early Bronze Age. No architecure can be associated with Kusura A, and the stratigraphic alignment between the cemetery area and the site can be questioned. Since the ceramics of this period come only from the cemetery, it is difficult to use them as certain indicators for chronological connections, but an Anatolian EB I date is not unreasonable. Kusura B was divided into three phases: the earlier of these is Kusura B3. Although there are no complete house plans, vestiges of unbaked mudbrick walls, often with stone foundations, are found on both sides of a street. On one side the houses are rectangularly-shaped and on the other they appear to be more square-shaped. Transition from Kusura A to B was gradual, and during the excavation characteristic forms of each period were found side by side (Lamb 1936:5, 16); although synchronic development may have taken place with Aphrodisias, the ceramics and other artifacts can be used only as indicators of stylistic communality. The general dates of the Kusura settlement have been assigned to the Anatolian Early Bronze Age II. In addition, chance finds were made by modern villagers that have been dated to Anatolian Early Bronze Age III. (Period C on the mound is dated to the Middle Bronze Age and will be briefly discussed infra p. 465).

The handmade pottery from period A was manufactured from a dark gray clay, black-slipped and burnished to a high luster. Ornamentation consisted of white-painted, cross-hatched designs and chevrons which closely resemble those of Aphrodisias. There are also white-painted jugs that can be paralleled at both Beycesultan and at Aphrodisias. ²⁹⁹ The commonest forms are bowls with incurving rims which can also be paralleled at Aphrodisias. ³⁰⁰

Troy I-V

Troy lies on a low ridge about 6 km to the Aegean on its west and a few km from the Dardanelles to its north. It is strategically positioned to control land routes to the sea and the seafaring traffic in the straits. It is located 32 km southwest of modern Çanakkale.

Troy has undergone some 19 years of excavation first by H. Schliemann (1881; 1884) from 1870 to 1890 and then by Dörpfeld (1902) from 1893 to 1895, who recognized nine occupation periods. Carl Blegen of the University of Cincinnati re-excavated the site from 1932 to 1938 (Blegen et al. 1950, 1951). On the northern flank of Troy, Schliemann had left a « platform » to which Blegen conducted three campaigns from 1935 to 1937. To the Early Bronze Age, the time of the site's foundation, he designated five main levels I-V (I is the earliest), which were subdivided into 30 phases. In squares C-D 2-3, the excavators distinguished ten architectural phases (ibid. 34). In 1937 further excavation was conducted in Squares E 3 and F 3-4, where remains of a 4 m depth of Early, Middle, and Late Troy I were found along with the famous fortification walls (ibid. 35). The ten phases were placed in three sub-periods designated with letters from Ia to Ij: Early Troy I (a-c); Middle Troy I (d-f) and Late Troy I (g-j). Early Troy I is roughly contemporary with the Anatolian EB II, Aphrodisias BA1, Level VI of the Pekmez mound, Beycesultan XIX-XVII, and Early Helladic I.

Troy I. The architecture of Early Troy I includes Schliemann and Dörpfeld's battered stone fortification wall (I W) 2.50 m thick — indicating that from its beginning Troy was a « fortress » (Blegen et al. 1950:38).

- 299. For overall shape-forms of Kusura, Lamb 1936: Figure 6.13 and see Lloyd and Mellaart 1962: Figure P.11.9 and Aphrodisias type CJ12 (Figure 405.42); and for *ibid*. Figure 6.12 see Lloyd and Mellaart 1962: Figure P.13.2. Except for the design (*ibid*.) Figure 6.12 is closer to Aphrodisias' Figures 384.21, 40, 41, 50. The design we think is closer to Beycesultan (*ibid*.) Figure P.1.38, P.4.10, P.7.3, and P.8.14, but Mellaart parallels it to Beycesultan, *ibid*. Figure P.11.5. Lamb 1936: Figure 16.13 with 14 cross-hatched lines, Mellaart likens to Figure P.11.9 which is a zigzag design. We have no piece at Aphrodisias with such proclivity toward cross-hatched lines. Mellaart comments on this (Lloyd and Mellaart 1962:104, 131).
- 300. Lamb 1936: Figure 5.4 is similar to Aphrodisias types CX91 (Figure 392.22), and CX57 (Joukowsky 1982:34.8).

Free standing houses were constructed of mudbrick on stone foundations — noteworthy are apsidal house 103 from Troy Ia and large house 102 (7 by 18.75 m) which was constructed on a megaron plan. There were no adult burials found but six infant burials were unearthed — two under the floor of house 102, and another two outside its north wall. Of these, two were simple pit burials and the four remaining were jar burials.

From the beginning of Troy were recovered metal needles, pins, awls and a copper hook. The ground stone industry is represented by figurines, adzes, hammerstones, grinders and querns; the chipped stone industry by flint tools; and pins, awls, and « ornaments » were found of bone. The pottery is a monochrome black-burnished ware occasionally decorated with white-filled incisions. Common shapes are carinated inverted rims, beak-spouted jugs and tripodic cooking pots. Sometimes tubular lug handles are placed just below the rim.

The architecture of Middle Troy I is incomplete, but the fortification wall still stood 3 m in height in the south and was served by a principal gateway flanked with projecting towers. Little remains of the houses, but they continued to be large and free-standing.

Added to the artifact corpus is the use of lead to repair broken vessels, and a ceramic mold for either a spearhead or dagger — thus local manufacture of tools was practiced. The ground stone industry includes marble vases, but particularly noteworthy is a large stele fragment with the representation of a human head — this is the earliest relief sculpture in either the Aegean or Anatolia. The ceramic corpus continues with few changes excepting that there is more white-painted decoration and less white-filled incised ware. The first Aegean imports appear including Early Helladic III Urfinis wares that are dated to the Early Bronze Age period on the Greek mainland.

In Late Troy I, the fortifications were strengthened at certain points — they now measured 5 m. Additions comprised a battered earth rampart faced with stones, but house construction was the same as in earlier periods. In all probability, this level was destroyed by fire.

The ground stone industry remained unchanged, but Melian obsidian appeared for the first time in the chipped stone corpus. Pottery shapes continued, but there was greater uniformity in the color of the black slip; Aegean wares were imported along with the well-known sauceboat form. The ceramics of Late Troy I signal that it was contemporary with Anatolian EB II, Aphrodisias BA1-GAP, Thermi V and Poliochni III-IV (Verde-Rosso), *infra*.

Troy II. There was no cultural break between Late Troy I and the beginning of Troy II. Comprised of eight phases, a-g, Troy II was excavated to a depth of approxi-

mately 2 m. In Troy IIa, architectural changes included the enlargement of the fortification wall which was provided with two gateways flanked by massive projecting towers. After a conflagration destroyed IIa, the walls were reconstructed in Troy IIb, and in Troy IIc they were extended and two double gateways added. Access to the south gateway FM was by an impressive stone-paved ramp. These IIc walls were used until the end of Troy II.

In Troy IIa, the only architectural components were portions of large houses. In Troy IIb was yet another megaron-shaped structure. And in Troy IIc the citadel was occupied by a series of megara — the most prominent, IIA, was entered through a propylon, IIC, built into an interior wall with a columnaded portico. Megaron IIa's foundations were constructed of massive stones with walls built of brick and reinforced with beams placed in horizontal and transverse positions. In the main room was a circular hearth 4 m in diameter. Four additional megara, IIB, E, H, and R, were erected parallel to IIA on both sides. Outside the interior-walled area a fifth megaron, IIF, was constructed and to its west, a multi-roomed structure was found. In phase IId, the columnaded portico was extended 3 m to the exterior — its architectural plan underwent few changes until the end of Troy II. Also characteristic of Troy IId were bothroi or refuse pits originally constructed to hold pithoi.

Burials included a pit burial of an adult female in a flexed position found in the fortification wall of Troy IIa — she was probably interred by the folk of Troy IIb or IIc. The pit was lined with stone slabs and there were no funerary objects. In addition, several child burials were located. In Troy IIf the flexed body of a child in a pit, burial 8, was discovered under a house floor; and in IIg yet another burial of a flexed child was found under a floor — a piece of lead wire accompanied the dead. From the evidence, it appeared to the excavators that child burials were intramural and adult burials extramural.

The artifact repertoire of Troy II is legendary for its wealth. It is most important because it clearly demonstrates that exchange systems were well-developed between Troy and other sites in Anatolia, the Cyclades and the Greek mainland. Quantities of gold and silver jewelry, tools and vessels were found by both Schliemann and Blegen in the destruction level of Troy IIg. Among the most interesting finds are a gold sauceboat, paralleled to Aegean shapes; slotted spearheads, also found in the Cyclades and Crete; gold jewelry, comparable to the jewelry found at Mochlos in Crete, Poliochni in Lemnos, and Alaca Höyük in Central Anatolia; and silver tweezers that can be compared with those from the Cyclades and the Greek mainland. Bronze tools were probably imported from Central Anatolia where true bronze had been known for some time. The implications of Troy II's affluence, power, and widespread contacts are indisputable.

The ground stone industry is enhanced by a steatite bowl, a marble pestle, and nephrite adzes. Industries established in Troy I continue with figurines and other small objects. The chipped stone repertoire shows the continued importation of Melian obsidian. The bone industry now adds a decorated bone tube and two bossed bone plaques, sonamed because of their knobbed decoration, paralleled in Greece, Italy, Sicily and Malta by Holloway (1981:17-19, Figures 5-12).

The ceramics of Troy IIa continue in the tradition of Troy I, except that the tankard form is added to the corpus. But as the period progresses, there are dramatic changes — black wares give way to red and tan-colored fabrics. In Troy IIb large wheelmade shallow red-slipped bowls are introduced, to become common by Troy IIc. In Troy IId the *depas amphikypellon* appears, and in the middle-to-late part of Troy II face pots and lids make their debut. Numerous incised spindle whorls are found; and in Troy IIg, in a house context, a series of loom weights set in parallel rows prove that the weaving industry flourished.

Troy II ended in a massive conflagration around 2300-2200 B.C. — it was roughly contemporary with Aphrodisias Bronze Age 4.

Troy III is a deposit of 2.65 m depth and is divided into three to four architectural phases manifesting important changes in city planning. Although there probably was a fortification wall, no evidence of one has come to light. House plans are changed: no longer are they freestanding — the majority are three or four room apartments often with shared party walls. House construction becomes limited to stone (rather than the mudbrick timber-reinforced superstructures on stone foundations, so common to Troy II). No burials can be associated with Troy III which suggests that by now all burials are extramural. The artifact corpus is considerably poorer than in Troy II; only 22 copper pins were unearthed. The ground, chipped stone, and bone industries show a continuation of artifacts associated with both Troy I and II.

The later Troy II ceramic shapes continue in Troy III. Characteristic are the flaring bowls, depas cups, beaked-sputed jugs, face pots, lids and tankards. The new shape that was introduced in Troy IIg is the cutaway-spouted jug; another innovation is that large vessels are manufactured from straw-tempered wares like those of Aphrodisias (AT wares). Non-descript, poorly executed animal figurines appear in this level. They can be compared to those at Karataş-Semayük (Mellink 1970: Figure 24) and to cat. no. 689.1 from Acropolis trench 7 found in later Aphrodisias contexts.

One curious factor relating to Troy III is that deer became the most common food animal. The reason for this change is unknown but there may have been a greater need to rely on hunting.

Troy III was destroyed, but it is unclear as to why or even who its enemies were. This period is thought to be contemporary with Aphrodisias Bronze Age 4 and BA4-MB contexts.

Troy IV is a deposit of 1.70 to 2 m in depth, and is divided into five architectural phases from a to e. The architectural plan changes: now two-roomed row houses in groups of four are set together (insula) and face onto a street. The orientation of these houses is different from those of Troy III; and they exhibit a return to the use of mudbrick superstructure set on stone foundations. Vestiges of a fortification wall were uncovered but its plan is not clear. The earliest evidence for the domed oven is found in this period. No burials were unearthed.

The artifact corpus continues in the tradition of the earlier periods — and the ground, chipped stone, and bone industries show few innovations. Little metal was recovered. The ceramics are also the same shapes that were found in Troy III, but straw-tempered wares have become common, and the use of the wheel in manufacture is on the increase — although finer forms like depas cups and tankards are still handmade. Introduced in Troy IV are the jug with wing-shaped lug handles and the red-cross bowl. Spindle whorls are similar to those of Troy III; but 65 % now bear incised decoration.

It is not clear why Troy IV went out of existence. It was demolished, but by whom or why is no more evident than it was in Troy III. On a broad chronological basis this period can be roughly aligned with Aphrodisias Bronze Age 4-Middle Bronze.

Troy V comprises three to four architectural phases in a 1.50 m in depth of deposit. In all probability a fortification wall existed, but its remains have not been found. Houses continue to be constructed on the same orientation as Troy IV but are larger and more carefully ordered. Built-in features such as hearths, ovens, and benches were uncovered, indicating that this period enjoyed greater prosperity than Troy IV. Burials include only one of an infant discovered in a pit below the house floor — no adult burials were found, therefore the cemetery was reasoned to have been extramural.

The artifact repertoire seems standardized from earlier periods. Analysis of metal tools (chisel, knife, three pins and a wire), shows that tin-based bronze is in standardized use. The ground stone and chipped stone industries do not undergo any changes, nor do the bone or ceramic industries. The red-cross bowl continues to be commonly manufactured as do the jug and jar forms of Troy III and IV. There is no significant change in spindle whorl manufacture.

Study of animal remains indicates that deer decreased and that pig and cow became most popular. No destruction evidence could be associated with Troy V; it can be broadly aligned to Bronze Age 4 Middle Bronze and Middle Bronze levels at Aphrodisias.

Trojan I-V Ceramics

Blegen and his associates divided the handmade monochrome pottery into two categories: fine and coarse wares. Fine ware-fabrics were further subdivided into Polished Ware and Luster Ware (jet black and red). Coarse ware-fabrics were separated into Polished, Unpolished, Pithoi, and Baking Pan Wares. The excavators (*ibid*. 23) sequentially numbered the shapes for the entire Bronze Age and classified them by: vessels for eating (A), pouring (B), storage (C), and miscellaneous (D). Although this system reduces the number of shapes, it it important to note that shape A 12 of Troy I looks quite different from shape A 12 of Troy V. 61 shapes were classified as being typical of Troy I (*ibid*. 56).

Fine polished wares are slipped and burnished; the ware-fabric is dark in color — usually grays and blacks predominate but sometimes olive brown coloration is favored. The fine-fabric Luster Ware is slipped in black, and is also characterized by a gray-colored fabric. It is associated with flared forms A 1 (Blegen et al. 1950:56; 1951: Fig. 262, 13-16), represented by 12 variations of Aphrodisias bowl rim shapes. 301 Troy shapes A 5, A 6, A 7, A 9, A 10, and inverted shape A 12, (Blegen et al. 1950: Figs. 258-261) can be paralleled by eight types at Aphrodisias; ³⁰² and A 16 (*ibid*. 263-264) can be paralleled by nine Aphrodisias shape-forms.³⁰³ B 13, belonging to a juglet (Blegen et al. 1950: Fig. 223a), can be directly paralleled at Aphrodisias. Flaring shape A 7 and inverted shape A 13 are pedestalled bowls that I have documented at Aphrodisias in the discussion of miscellaneous ceramics, supra.

- 301. Trojan coarse ware A 1 shapes found at Aphrodisias include types: CX78 (Figure 301.29); X48 (Figure 301.2); CX25 (Joukowsky 1982: Figure 30.18); CX24 (Figure 301.11); X80 (Joukowsky 1982, Figure 32.1); CX40 (Joukowsky 1982: Figure 30.21); CX37 (Figure 384.12); CX26 (Figure 389.15); CX85 (Figure 389.10); CX71 (Joukowsky 1982: Figure 31.18); X78 (Figure 301.9); and possibly CX80 (Figure 392.1).
- 302. A 12 shapes that appear at Aphrodisias include the following types: CX69 (Figure 405.23); X77 (Figure 405.35); CX58 (Figure 392.9); XC4 (Figure 399.2); X72 (Figure 300.6); CX90 (Figure 392.16); CX95 (Joukowsky 1982: Figure 34.5); and CX12 (Figure 298.3).
- 303. These forms Blegen states are common to the Middle Troy I period and are derived from A 6 shapes. At Aphrodisias the Troy A 16 shape can be paralleled with the following types: CX57 (Joukowsky 1982: Figure 34.8); CX12 (Figure 298.3); CX95 (Joukowsky 1982: Figure 34.5); CX43 (Joukowsky 1982: Figure 34.3); X24 (Joukowsky 1982: Figure 34.2); CX96 (Figure 396.8); X69 (Joukowsky 1982: Figure 33.11); and CX20 (Figure 377.16).

Coarse Polished Ware was used for kitchen and storage purposes; generally this ware was slipped in a reddish brown, and then burnished. The shapes include many that find correspondences with the Aphrodisias type series including bowls that are flared — this form finds five type alliances in cooking pot ware. 304 However, the Troy inverted A 12 (supra), is of Coarse Ware in Late I, and of Coarse Polished Ware in Early and Late I (Blegen et al. 1950:60), but does not find counterparts in coarse ware at Aphrodisias.

Other forms that are reminiscent of Aphrodisias shapes include: vertical plain A 25; jar/jug types C 3, C 16, C 18, C 25, and C 27; and miscellaneous forms, such as D 1, D 3, D 9, D 11, D 14, D 15, D 17, and D 20 (lids). Tripodic D 24 shape is also represented in the Aphrodisias deposits, and similar shapes exist for D 28 and D 31. At Troy the Coarse Unpolished Wares are similar in fabric to those described above except that the texture of the ware-fabric is left rough and grainy. Tripodic D 24 finds predecessors at Beycesultan (Lloyd and Mellaart 1962: Fig., Pl. 16, Level XVIII), Aphrodisias and at other Anatolian sites.305 Coarse wares were used for Troy shape C 39; this is a pithos category that has a wide range of shapes represented in the Troy illustrations (Blegen et al. 1950:259) and some of these forms can be paralleled at Aphrodisias. 306 Baking Pan Wares are described as our Aphrodisias Thick Coarse fabric types PX or PS (see ware-fabric discussion p. 293ff.), and Troy type D 23 is similar to the Aphrodisias baking tray represented in Figure 405.26. Blegen and his associates comment (1950:56):

« They bear a striking resemblance to a characteristic category of baking dishes found at many Early Helladic sites on the Greek Mainland and sometines classified as Rugose Ware. »

In 1979 I was fortunate to be able to spend some time in İstanbul at the Archaeological Museum³⁰⁷ where I examined the Troy material. There were similarities between Troy and Aphrodisias shape-forms and warefabrics, and there were some marked differences as well.

- 304. Coarse ware parallels to shape A 1 found at Aphrodisias include CP30 (Figure 299.7); CC6 (Figure 377.21); CC32 (Figure 399.13); CC25 (Joukowsky 1982: Figure 37.1); and CC23 (Figure 393.42).
- 305. Three Aphrodisias types that might parallel this form include B93 (Figure 393.45); B32 (Figure 405.18); which can be paralleled at Kum Tepe IA2; and CB2 (Figure 393.32) which finds counterparts at Kum Tepe in IA1 (Kum Tepe Figure 8.116); in IA2 (Kum Tepe Figure 9.218); and in IB2 (Kum Tepe Figure 13.411).
- 306. Troy C 39 shape in Level Ib is similar to Aphrodisias CE8 (Figure 396.17) and CE4 (Figure 393.23); the shape represented in Level Ic is similar to our CE9 (Figure 396.1).
- 307. As noted above in the Acknowledgements, we are grateful to Mr. Ayküt Özet and to Miss Behin Aksöy for taking time out of their work to allow me to examine this collection.

These were noted in some of the shapes, particularly in sauce boats and Minyan wares which have not been found at Aphrodisias. Although the biscuit appeared to be similar, some of the ware-fabrics were olive green, in comparison to the gray-black coloration found at Aphrodisias. This is probably indicative of slightly different firing methods, or may be a result of a different consistency of the slip itself, or both. 308 On the whole, ware-fabrics were more similar than they were different, but to draw any concise conclusions at this point would be premature. Hopefully there will be an opportunity to compare them sherd-for-sherd. In all, Aphrodisias shows a similar shape development as do the 143 Troy shapes. Taken together as assemblages, there are similarities in the potting tradition, and in the small objects found at both Troy and Aphrodisias. The ceramic horizon of the Early Bronze Age was widespread and its cultural manifestations encompassed centers like Troy, Aphrodisias, Beycesultan, Kusura and other sites. There is little question that there were corresponding influences at work.

Yortan

Yortan is located in Mysia, south of Balikesir in a high valley of the Bakır Çay. It is the site of an immense cemetery which was in use over a long period of time. Unfortunately it has been plundered. Thus far, no habitation area has been located — if one can be found nearby, the cemetery would be extramural. Its innumerable ceramics are housed in many archaeological museums in İstanbul, London, Oxford, Paris, Berlin, while others have ended up in the hands of private collectors.

In 1900 and 1901 before his work at Aphrodisias, the French engineer Paul Gaudin and his colleague Victor Chapot, excavated at Yortan but little was published (M. Collignon 1901:810). Some of the ceramics now in the Louvre were subsequently published by E. Pottier (1926). Others taken to the British Museum were published by E. Forsdyke (1925) and in 1966 W. Orthmann published those ceramics housed in the Berlin Museum. 309

In great part there is little to be learned from the stratigraphy of these burials, and it is difficult to reconstruct the burial goods belonging to a particular tomb. We do know that burials were often indicated by a stone marker at ground level to signalize their location, that burial pithoi were generally positioned with their mouths to the east, and that the deceased was placed in the pithos with offerings, primarily jugs and juglets, surrounding the

body. Cremation was not practiced. Because of the lack of stratigraphy, it is impossible to determine either the stylistic development of the grave goods or the life course of the site itself.

The artifactual evidence of Yortan manifests itself at Aphrodisias, as we have already remarked in the analysis of the burial offerings in Pekmez trench 2 pithos burial, and in the dark-faced white-painted designs that accompany Bronze Age 2 forms. The widespread use of these jug types, however, does not imply direct contact between the two sites — but Yortan-inspired ideas are locally manufactured or perhaps there was the importation the jars from Yortan itself or from an intermediate site. The symbolic importance of the Yortan grave goods must have been transmitted to the Maeander Valley — for they have been found both at Aphrodisias and as chance finds (Joukowsky 1985), and in on-site surface scatters (Appendix 1).

Babaköy

Also near Balıkesir and 35 km from Yortan lies the site of Babaköy which shares its culture with Yortan. This is a funerary site which was systematically excavated by K. Bittel in 1936. He published his results in 1941. Although the deposits were disturbed in later periods, pithos burials were discovered, like those found at Yortan, with the mouth oriented to the E and with jar offerings consisting mainly of jugs and juglets. The pithos mouth was covered with a large visible capstone which permitted the reuse of the vessel. Like the Pekmez trench 2 pithos burials, Babaköy tomb XIV contained two successive burials.

Karataş-Semayük

Karataş-Semayük (see Elmalı, supra), is a small höyük (3-4 m high, 100 m in diameter) in Lycia. It has been excavated since 1963 under the direction of M. Mellink who has published several preliminary reports in the American Journal of Archaeology (1964-1976). A cemetery and a settlement with five occupation levels have been excavated, in use during Troy II-IV and dated to the Anatolian EB II-III periods. Karataş Level I (10.75-7.20 m) is the oldest. It is characterized by an oval wall surrounding a courtyard and a rectangular structure (Mellink 1973: Ill. 1). The wall is buttressed on the interior for reinforcement and subsequently enlarged to two or more times to become 4-5 m in thickness. On its south side, a large walled ramp leads into the settlement; this ramp wall is constructed of pisé overlying a foundation of stones or mudbricks in a herringbone design. The courtyard inside the wall shows signs of having been rebuilt several times. The rectangular structure has 0.80 m thick walls built of rectangular mudbricks over stone foundations; alongside them at regular intervals are post holes supported by

^{308.} I have requested the Turkish Department of Antiquities to allow me to send samples of Aphrodisias fragments to both the İstanbul Archaeological Museum and to the Prehistoric Laboratory of İstanbul University, so that these fabrics may be compared on a 1:1 basis.

^{309.} Also the ceramics from Babaköy and Soma can be found in this volume.

cuttings in the bedrock. Both the walls and floors of this structure are plaster-coated. In the southeast is another outer wall, but butressed on its exterior. Beyond it in a palisade is a residential quarter that has a crooked fence-house (Mellink 1973: Ill. 2) built of wattle-and-daub, and also several ash pits. And beyond this is another palisade where flocks were kept. The level was devastated by fire.

Karataş Level II is characterized by the reconstruction of the Level I rectangular building. This level too was destroyed by a massive conflagration. Radiocarbon dates of charcoal samples from this destruction (Eslick 1978: 244) can be found below.³¹⁰

During the occupation of Level III the ground was levelled for rebuilding. The rectangular building suffered from erosion, and a thick ash layer accumulated, particularly in the southeast, southwest, and west. Towards the end of this level, a new wall was built which followed the contour of the höyük.

In Levels IVa and IVb the structure was remodelled. On the earlier oval wall and on a bed of ash, yet another settlement wall was constructed, « the white wall », which was provided with a portal and a fortification tower. M. Mellink (1973:296) suggests that these structures are contemporary with Late Troy I. Also in this period are two rectangular platforms located in the southeast. M. Mellink (1972:258) thinks they may have served as potters' workshops. A concentration of ceramic beads, spindle whorls, and stamp seals were found in the nearby fill.

After Level IV the site was abandoned. And then in later Level V there was the construction of houses on the northwest and southeast flanks of the mound. On the east side is a ramp of pebbles that leads to the center of the mound. The houses in the habitation areas are built of mudbrick on stone foundations and the architectural plan is the megaron or hall-porch-and-hearth. To the northwest were intrusive burials and also megara 1-4 erected on foundations of regularly placed quarry stones. Under megaron 3, earlier megara were found which are thought to be contemporary with Levels I-IV. To the southwest another series of megara were uncovered that are contemporary with Level V; Mellink (1967: fig. 2.5; 1968: fig. 2.3) places these megara in an Early Bronze Age III context based on the architecture and pottery from Troy II and the ceramics from Tarsus Early Bronze IIIA.

310. Radiocarbon dates from Karataş-Semayük (Eslick 1978:244).

Karataş II	Sample No.	Date	
Pit	P-298	2324 ± 62	2902
Fill	P-923	2278 ± 62	2855
Post hole	P-917	2271 ± 61	2848
Pit	P-921	2188 ± 62	2762
Floor	P-918	2180 ± 61	2754
Beam	P-919	2176 ± 60	2750

The principal Karataş burial ground is of particular importance. A total of 368 pithos burials are located in an area of 200 m south of the mound. These inhumations are accompanied with beak-spouted, red-slipped and burnished jugs and juglets, some of which are painted with white-banded decoration. To the southeast lies another cemetery containing 59 burials, 38 of which were infants. The burials had been placed in the ground outside the house walls of an earlier or even later abandoned settlement — thus, the settlement and the burials, although lying together, cannot be associated stratigraphically. In both burial areas the pithoi are oriented to the east with the rims:

« at a slightly higher level than the bases, probably to facilitate introduction of the body and its possessions and gifts. »

(Wheeler 1974:416.)

Other similarities are noteworthy for many have capstones and ground markers and they contain similar funerary offerings. The date of these burials is suggested by Wheeler to be within the Anatolian EB II period.³¹¹

The pottery from all levels at Karataş and her sister site of Bağbaşı, supra, find many affinities with Aphrodisias. From Bağbaşı, dated to the EB I is a straight rimmed knobbed juglet (Mellink 1970a: Plate 55.4), and a cooking pot (ibid. Plate 55.7) that find parallels at Aphrodisias. From the palisade enclosure is found another familiar looking jar (Mellink 1974a: Plate 66, Figure 7), and from EB II contexts is a figurine (Mellink 1970: Plate 58, Figure 24). In the megaron of Level III are found stamp seals (Mellink 1970: Plate 58, Figure 23a,b) and yet other seals (Mellink 1967a: Plate 84, Figure 54, 55) with geometric designs that are more similar to those found at Aphrodisias, as we mentioned previously. Although Miss Mellink states that the slanting beaked rim is an exception in the contexts in which it was found, the tankard (Mellink 1967a: Plate 76, Figure 9) from Tomb 186 may be the predecessor to a similar Bronze Age 1 vessel at Aphrodisias (Pekmez trench 2, cat. no. 1497.II, Figure 405.19). From Tomb 63 is a black-slipped juglet with an incised loop handle (ibid. Plate 83, Figure 48) - represented by Aphrodisias handle types H43 and CH68. But a form of especial interest is the lentoid flask with a cutaway spout (ibid. Plate 82, Figure 42) found in the habitation area « model apartment » — its likeness is close to a chance find found near Medet (?) in the Tavas Plain (Reg. No. 78/2/2, Joukowsky 1985: Fig. 1.1, 2.2), which is housed in the Aphrodisias Museum. From an upper habitation level, Level V, is a globular jar (Mellink 1974a: Plate 66. Figure 8) that probably finds a shape counterpart at Aphrodisias, but in a smaller format.

311. A comprehensive analysis of the Karatas pithos burials has been published by J. L. Angel 1966, 68, 70, 76, and a useful comparative analysis and catalogue is given by Wheeler (1974:415-425).

The Eastern Aegean

Poliochni

Poliochni is situated on the island of Lemnos across the Aegean from Troy. It has been excavated in 1931, 1936, 1956 and 1960 and has been published by L. Bernabò-Brea (1957, 1964, 1976). Six principal periods (I-VI) are identified. These periods were also given color designations. From the earliest to the latest: I — Nero; IIa — Azzuro arcaico; — IIb — Azzuro evoluto; III — Verde; IV — Rosso; V — Giallo; and VI — Marrone. These divisions were based primarily on the pottery because clear stratigraphic divisions were not possible.

The earliest level, Poliochni I (*Nero*), was not extensively excavated, but consisted of a village of ovoid-shaped houses situated on bedrock (Bernabò-Brea 1964: Figs. 25-28; 51-54). Here there are white-painted wares that look familiar (*ibid*. 1964: Tav. I, d-g),³¹² but even though a few forms may be paralleled ³¹³ there seems to be a distinct potting tradition, further pointed out by the overall difference between this assemblage and that of Aphrodisias. The Poliochni wares are probably contemporary with Aphrodisias Early Bronze Age ceramics for the ear-handled cups and pedestalled bases are representative of Aphrodisias Bronze Age shapes. The Poliochni ceramics have undergone extensive study for their alignments with western Anatolia (Podzuweit 1979).

Poliochni II (Azzuro) is divided into two periods, IIa and IIb, both consisting of a village surrounded by a defense wall. The settlement is larger than that of Level I. The wall was first erected in IIa and extensively remodelled during that period. In Poliochni IIb, another and larger wall was built and inside the wall was a large rectangular edifice (no. 28) with an opening on its long side. This building measured 19.50 by 7 m and was constructed of stone. Poliochni II has been paralleled to early Troy I.

In Poliochni III (Verde) the built-up area is composed of a new defense wall. Outside the earlier defense wall to the W of the mound, a new terraced habitation quarter was constructed with its own wall. Building 864

like its predecessor, no. 28, was thought to have been a large public building. This level has been equated to later Troy I.

Poliochni IV (Rosso) has its first megaroid construction (XIII, building 832) with the porch and door placed on the south side. This level is a transitional phase between Troy I (Late) and early Troy II.

Poliochni V (Giallo), situated on top of the mound, provided the excavators with a good architectural plan of a megaroid-shaped hall and also a porch-house built alongside, each separated by streets and courts. The main street (no. 105) is oriented north-south and measures 300 m in length. The largest megaron (no. 317) is trapezoidal in shape and was thought to have served as a town hall. It suffered a violent destruction, probably a surprise attack, for bodies were discovered in contorted positions. After Level V there is a gap in the archaeological record. Based on the architecture and the pottery, its destruction has been paralleled to that of Troy IIg as a similar cache of buried treasure was found which included gold jewelry (Bernabò-Brea 1957: Pl. 18.5). Level V is also paralleled to Troy III and IV. Poliochni V (Giallo) is important for the archaeology of northwest Anatolia as it is also for the Aegean — it provides the best evidence for the layout of an urban quarter in the Early Bronze Age.

The settlement of Poliochni VI (*Marrone*) is not preserved except for its pottery, which has been paralleled to Troy V.

Emborio

The long stratigraphy of the site of Emborio (Hood 1965:224-227) on the island of Chios finds some parallels with the Aphrodisias material, and it is unquestionably contemporary. Although there are striking resemblances (like Poliochni), it too appears to be a part of a distinct pottery-producing tradition. The lower strata X-VIII of Emborio find closer parallels with the cave at Aghio Gala on the western side of the same island (Furness 1956: 173ff). Renfrew (1972:72) suggests the possibility of Emborio levels X-IX being culturally interrelated with Saliagos near Antiparos. But the evolution of the burnished bowl on Chios finds some parallels with the Aphrodisias material — flaring forms from Emborio IX 314 and VIII 315 chronologically precede the inverted shapes of phase VI 316 as they do at Aphrodisias.

^{312.} Bernabò-Brea 1964: Tav.I, d-g. The Aphrodisias VIIIA distinctive fragment shown in Figure 384.46 looks like the piece found in Megaron 832.

^{313.} For example in *ibid*. Tav. II, III, VII and VIII, there is nothing that corresponds to Aphrodisias, except III.g — a spindle whorl. In Tav. IV, 2 familiar forms are IV.r, which can be paralleled to Aphrodisias CC21 (Figure 389.17), and IV.t, which looks like subtype B83 (Figure 297.8). In Tav. V, we find the closest resemblances; f of Megaron 605 = type B32 (Figure 405.18); i with a knob = CT2 and its rim = CX73 (Joukowsky 1982: Figure 31.15); m = CX48 (Joukowsky 1982: Figure 30.22); k = CX24 (Figure 399.37); o = CE2 (Figure 377.3); u = CX48 (Joukowsky 1982: Figure 30.22). In Tav. IV, b, is similar to but not the same as CX30 (Figure 396.5).

^{314.} Renfrew 1972: Figure 5.2.4 is the same as our CX36 (Figure 384.11), CX37 (Figure 384.12) and X80 (Figure 298.10).

^{315.} Ibid. Figure 5.2.7. = CX59 (Figure 299.6).

^{316.} *Ibid.* Figure 5.2.3. = XC6 (Joukowsky 1982: Figure 34.12) or XC8 (Figure 399.4).

Emborio Levels VII and VI each contain two strata. Common bowl shapes have rolled rims with tubular lug handles. Because of the presence of Cycladic marble vase fragments, this period is paralleled to the beginning of EB I, at Poliochni I (Nero) and to Kum Tepe Ia and Ib. On the basis of what has been published, Emborio V and IV have been equated to Troy I and to Poliochni II (Azzuro). Level IV's destruction was brought about by a massive conflagration. A radiocarbon date (Easton 1976:170), P-273, given for this destruction level is reported as 3980 \pm 97 B.P., recalibrated to 2520 \pm 97 B.C. Level III is characterized by the reconstruction of the site and is also dated to Troy I or to Anatolian EB II. Emborio II is marked by the transition from Late Troy I to early Troy II. It will probably have a firm assignment to either one of the two Troy levels when it is fully published. Emborio I is also to be equated with Early Troy II and Poliochni IV (Rosso).

Thermi

Thermi is situated on the island of Lesbos (ancient Mytilene) off the northwest coast of Anatolia. Located 10 km north of the modern town of Mytilene, it is a low höyük whose ancient name is not known, but called today Pyrgi Thermes after the modern village which lies 2 km to the east. It was discovered and excavated by W. Lamb between 1930 and 1933 and published in 1936. The excavator identified numerous architectural phases which she then combined into five major phases I-V (earliest to latest). Towns III-IV were subdivided into a and b levels on the basis of ceramics and architecture.

Thermi I rests on clay pebbly earth that is directly over virgin soil. It is a planned settlement based on a radiating system. The house entrances and streets are similar to those in later Thermi II. The houses with stone walls are constructed in a herringbone pattern, have pebbled floors, hearths, doorways with sockets, thresholds, paved stone platforms, and storage areas. Most of the houses are long and narrow with a small room followed by a larger one. Infant pithos burials, the only burials found at Thermi, were unearthed under the floors of a few houses. Thermi I has been equated with the end of Troy I because of its ceramic range of black and red ware bowls, jugs, cups, cooking pots, and storage jars as well as loom weights and decorated spindle whorls. It is, in this period, a town, as opposed to a royal fortified city like Troy.

The plan of Thermi II is the same radiating system as Thermi I and there are few distinctions between the two levels. Level II, however, is better preserved with the entrance to houses and some of the streets discernable. But unlike Thermi I, herringbone masonry is no longer used. The pottery has affinities with Yortan wares and some sherds have designs that are typically Cycladic. It has been dated by the excavators to 2950 ± 50 B.C.

Thermi III is represented by two levels, IIIA and IIIB, that are considered as being a transition from Thermi II. Level IIIA is characterized by a fortification wall with a tower and by bothroi under the house floors. This settlement has been termed « proto-urban » (Renfrew 1972:127). There is an influx of incised brown wares as well as incised figurines that have both been influenced by wares much further afield than Troy; Lamb parallels these to Troy, to southwest and Central Anatolia, and to Mesopotamia as well as to Thessaly and the Cyclades.

Levels IIIB-IVA are telescoped deposits. Level IIIB represents a population decline. The walls of earlier Thermi IIIA are rebuilt in IIIB, which makes it difficult to separate the two levels. Houses now have courtyards, are oriented differently, and are grouped into blocks separated by pebble-paved streets. An influx of people join the indigeneous settlement but settle on the outskirts of the site.

There is not a clear-cut distinction between Levels IVA and IVB — the walls may be contemporary but the settlement plan differs. By Level IVB brown wares are on an increase and show a variation in manufacture, the figurines are now more abstract with an absence of the incised decoration so characteristic of Thermi IIIA.

Thermi V is smaller than Thermi IV, but it shows better planning and construction. There is a central square, wider streets and a main thoroughfare. The houses, situated next to one another, appear to be more modern and comfortable and, built on a megaron plan, are divided into two rooms — large and small with a vestibule entered from the street. But the most important feature of this level is the thick wall surrounding the settlement. On the east and south of this wall are two entrances to the village, with the main thoroughfare extending from the south. Houses were often constructed flush to the exterior of the wall. At the end of Thermi V, the site appears to have been all but abandoned, which shows that an outside threat must have been anticipated. In this phase, the brown wares resemble those from Troy II, but again the influence is not exclusively Troadic. The spindle whorls and loom weights are undecorated. The chronology of Thermi V is uncertain as the parallels to Troy II are not extensive enough to place its abandonment later than 2450 B.C.

The ceramics of Thermi have undergone thorough analysis along with those of Troy and Beycesultan. There are many correspondences with Aphrodisias as well.³¹⁷

Tigani³¹⁸

Tigani is a port city located on the island of Samos across from the Turkish coast. It is only 7 km to the east

^{317.} See particularly beak-spouted vessels Lamb 1936: Figure 41.6-9a inclusive, are like Aphrodisias Figures 488.38, 39, 43).

^{318.} Furness 1956; see also Heidenreich 1935-36:125ff.

of the Heraion (infra). Several trenches were laid out and excavated through Hellenistic and Byzantine levels. Unfortunately the prehistoric deposits, located on bedrock, were disturbed by buildings of the Roman epoch — since these could not be excavated without intrusions, ceramic groupings had to provide the key analysis for the dating and the development of the site. This Tigani material was assigned alphabetized designations on the basis of surface decoration. 319 Eight ceramic classes were identified (A-G, with class C subdivided into C1 and C2), which were then ascribed to two phases of development: Tigani I (Classes E, B and D) and Tigani II (Classes C and F). This pottery has affinities in shape-form and decoration with the Aphrodisias assemblage — such as bowl forms, 320 simple horizontally perforated lug handles, 321 lunate or horseshoe lugs,³²² and white-painted wares. This material has also been paralleled to Beycesultan, 323 Troy, and Eastern Aegean sites by Furness (1956).

The Heraion

West of Tigani (supra) on the south coast of Samos is the Heraion. Excavated by T. Wiegand in the early 1900s, the site reports were first published in 1911. It was then restudied by E. Buschor and V. Milojčić (1961). Prehistoric deposits were found buried below wall foundations of the archaic periods. Five levels were unearthed in sectors E7 and E8, and in sectors F7 and F8, an additional four levels were found. Recovered ceramics were scrutinized by a typological analysis and classified into five ceramic groups numbered I-V, from earliest to latest. All are attributed to the Early Bronze Age (Milojčić 1961:58).

The Heraion I is composed of material from two ditches and also that found to the SW of megaron F7. It seems that the site was founded at this time.

319. Ibid. 174. C1 = Fine dark ware with slight burnish; C2 = fine dark ware with high burnish; D = white-painted ware; E = incised ware; F = pattern-burnished ware; and C = red-slipped ware. We have made other distinctions for type at Aphrodisias; on the basis of the published descriptions of the Tigani types, we conclude that similar forms have been found at Aphrodisias.

320. Furness 1956:

CX40 (Joukowsky 1982: Figure 30.21) Figure 8.1

= CX87 (Joukowsky 1982: Figure 30.11) Figure 8.4

Figure 8.3 = X80 (Figure 298.10)

Figure 8.11 = CX91 (Figure 392.22)

Figure 8.7 = XC4 (Figure 399.2)

Figure 8.8 = CX12 (Figure 298.3)

Figure 8.17 = CX85 (Figure 389.10) Figure 8.2 = CX11 (Figure 298.7, 8)

Also see the incised fragments on Plate XVI: six of these are reminiscent of our pointillé fragment (Figure 396.14).

- 321. *Ibid.* Figure 8.3-7; 18 = Aphrodisias CH25 (Figure 385.18).
- 322. Ibid. Figure 8.17 = Aphrodisias H30 (Figure 412.15).
- 323. R. Heidenreich 1935-36:125ff., and Lloyd and Mellaart 1962:107.

Heraion II is made up of material associated with the oldesf megaron at the site, Megaron II, and from an area known as « the kitchen ». Both the Heraion I and II have ceramic forms that can be paralleled with Troy II.

To the Heraion III was assigned the ceramics that were found between Megaron II and the largest megaron, the shops, and from below the house of G 7/70-80. In this level depas cups were discovered that were ascribed to a later Troy II date - or as early as to Troy IIc when the depas cups were first introduced to Troy herself.

The Heraion IV is ascribed to the pottery recovered from Megaron I (measuring 13.90 by 7.10 m), the destroyed houses and shops, beside the « Cistern Welter » in a refuse pit, and from a pithos burial. The ceramics including beaked jugs and short squat two-handled cups (Milojčić 1961: Pls. 16.1-2; 19.7; 15.4, 8; 21.5; 39.22) are like those from Troy IV and V. This level was completely destroyed by burning.

Heraion V is allocated the pottery associated with the rock-lined pits and cist tombs. The bowls from this level (ibid. Pls. 39.15; 44.13) are comparable to the Troy A 21 shape of Troy V.

Iasos

At Iasos on the Carian coast, excavations were conducted from 1960-1964 by the Italian School of Archaeology in Athens under the direction of Doro Levi (1967). An extensive prehistoric cemetery of the Chalcolithic and the initial Early Bronze Age was investigated — and it was learned that both the burial customs and many of the grave goods were similar to those of the Cyclades. 324 As a result of this Cycladic connection, Levi (1963:505; 1967: 401) speculates that Caria was the original home of the islanders. However, the marble vases and most of the ceramics from Iasos that do compare to the Aegean puts the dates of the Iasos artifacts to the initial phases of the Anatolian EB III A period, which places them at about 2600 B.C. in calendar years — or later.

The Iasos and Aphrodisias ceramics find little in common, but more of the Iasos ceramics have to be studied before any further hypothesis can be offered. In figure 97, Levi (op. cit.) presents several jugs of the Early Bronze period that are similar to Bronze Age 3 Aphrodisias shapes (ibid. 4, 6, 8, and 11), but these are commonly used forms throughout Anatolia in the Early Bronze Age II-III periods. If Iasos' Aegean affinities can be firmly secured, it will contribute to our knowledge of localized traditions in the Bronze Age and the spread of ideas from the Anatolian coast.

324. The Iasos deposits, particularly Tomb 16 (an irregular-shaped cist tomb made with upright stone slabs, and holding two white-painted vessels), may be part of a pre-Bronze date (Levi 1963:505-507, Figures 168.3, 169.8.68).

Any conclusions for this period are premature until more material can be studied emphasizing either similarities or differences in one direction of the argument or the other. Nevertheless, the southwest Early Bronze Ages has site to site differences that cannot be discounted. For example, there seem to be appreciable differences between either Aphrodisias Bronze Age 1 or Bronze Age 2 ceramics and those of Beycesultan in its Early Bronze Age 1 — at Beycesultan new elements appear such as fluted decoration, barbotine, and fish-scale decor which we do not see in the ceramic record at Aphrodisias. Mellaart (Lloyd and Mellaart 1962) attributes these features to « a final and somewhat unexpected stage in the development of the earlier wares... we are not concerned with something introduced by a new ethnic element. » Once the site-to-site picture becomes clearer, investigations should be directed to the interrelationships between Anatolia's southwest and its northwest, and each region's relations to the Aegean. The search for interconnections would be fruitful, and I think would confirm that ideas of the Anatolian Late Chalcolithic and Bronze Ages were indeed crossing into Aegean waters. It may even be that Aegean islands acted as the carriers of these traditions. Certainly the currents of diffusion are in the archaeological record. How they worked, however, is not clear. E. Vermeule (1964:244) comments:

« Southwestern Asia Minor has long been considered a likely source for the diffusion of Anatolian influence through the Aegean islands during the Bronze Age. Early stages of civilization in the Cyclades and Crete are marked by strange currents in pottery and craftsmanship which have been attributed to sea-faring contact with the coastal villages of Asia Minor. In place the links have seemed so strong that a stream of exploring settlers has been imagined moving toward the Greek islands: sometimes resemblances are fainter and more colored by local temperament and may be understood as a simple exchange of ideas and technology among groups which shared a common background and level of achievement. »

Cilicia

The Early Bronze Age

The geographical area and extent of Early Bronze Age cultures in Anatolia is a vast subject and the problems are far from simple. On the basis of size alone, there remains the problem of unity. In both Cilicia and Konya there appears to have been a greater autonomy of individual sites than there was in the southwest — not only it is difficult to distinguish any links between these areas, but to connect them to the west. Developments in Cilicia and in Konya Plain fulfill two of three data bases used for this study — they are relative to the same time

period and they are an important part of the archaeological information at hand. We assume that the third data base, contact, must have been viable, for western Anatolian-inspired ceramics make their way both to Central Anatolia and Cilicia. It is impossible to determine the degree of inter-dependence between them, if any existed, but stylistic cultural influences existed.

Mersin

Earlier in this section we noted that no architecture survived at Early Bronze Age Mersin, but that there are rich unstratified Early Bronze Age finds — including horizon markers such as an Early Bronze Age III tankard, a depas cup (Garstang 1953: Figure 124.10, 12), and two red-slipped jugs (*ibid.* 8, 11).

Tarsus

Unlike Mersin, the Early Bronze Age at Tarsus is well-stratified — it consists of an 18 m depth of deposit. H. Goldman divided the stratigraphy into three major phases: Early Bronze I, II, and III.

Early Bronze I, excavated in trench A, represents an 8 m depth of deposit which was too confined to establish extensive architectural plans. Fragmented walls appear to have been constructed only of stone. This level is followed by a filled-in area that is thought to have been a street or perhaps an open courtyard. Above this is a wall built of large stones, and above this is yet another wall series also built of stone. The pottery is represented by light-colored wheelmade wares that have their origin in Syria (Goldman 1956: Fig. 236, 50-52).

Early Bronze II is excavated from 19.50 to 20 m and from then 11.50 to 12 m. This period is divided into seven parts, EB IIA to EB IIG. Before the Early Bronze IIA settlement could begin, the area had to be leveled and the occupations base constructed over it. In Early Bronze Age IIB level, an east-west street was related to the earlier IIA deposits. The settlement now consists of four habitation areas. Each house is composed of a large frontal rectangular room with a smaller room behind; a vestibule opens onto a court and some house entrances face the street. For the most part, walls are built of mudbrick on dry foundations. In Level IIC is seen evidence that the IIB dwellings on the south side of the street were abandoned after a great fire had devastated that settlement, but unfortunately sections of a thick mudbrick rampart built in IIC cut across those abandoned rooms. Early Bronze Age IID is a level given over to the construction of the first and second city walls that are really discernable. Then in EB IIE, a more regular fortification wall is erected using the foundations of the by-now collapsed rampart of IIC.

To the west the excavators revealed a long ramp leading to the city gateway built on a L-shaped plan. In Early Bronze IIF remodelled homes are come upon north of the fortification wall — but in the EB IIG level these homes are devastated by fire. During this IIG period, Syrian wares characteristic of Early Bronze Age I are again found (Goldman 1956: Fig. 245, 178-187). And there is an introduction of imports from north Mesopotamia (*ibid*. Fig. 244, 154, a, b). Typical of the indigeneous ceramic assemblage is so-called « Copper Age » red-slipped bowls (Goldman 1956:134-135).

Bronze Age III. This level is excavated from 9 to 11.50 m and is divided into four sub-levels: EB III A-EB III D inclusive. In EB III A are unearthed house fragments. In EB III B the surviving house fragments are rectangular rooms lying adjacent to one another. The most outstanding architectural element is house 70-73 constructed on a megaroid plan; unfortunately all that remains are its large foundation stones. The pottery for this level is characterized by wheelmade, double-rimmed ring-burnished bottles with elongated bodies and conical bases (Goldman 1956: Fig. 268, 617).

In EB IIIC, the excavator designates four phases: EB IIIC I to EB IIIC IV. EB IIIC I consists of structures built on the megaron plan; two megara adjacent to one another share a central hall. In the IIIC II phase, larger room units of the preceding phase are remodelled into smaller units, even though the megaron design can still be identified. This, however, is not the case in the IIIC III phase when the megaron plan is no longer recognizable. In phase IIIC IV, more changes are undertaken, but later levels block out their intelligibility.

Throughout the EB III period Tarsus enjoyed an international flavor. As M. Mellink (1965:111) states:

« ... during the Early Bronze Age, Cilicia had foreign trade connections with northern Mesopotamia, Syria, and directly or indirectly with Egypt. There are also indications of trade with Cyprus... »

The evidence from Tarsus has been interpreted as indicating a resemblance, to some extent the materials found in the southwest. By the time when the Early Bronze Age III A cultures were firmly established at both Aphrodisias and Tarsus, we can expect to find traits that were held in common. Populations were probably more widely distributed than we now expect. And ceramic traits — depas cups, beak and cutaway spouted jugs, and flaring wheelmade bowls — become widespread in their gradual infiltration of Cilicia. But comparative studies based on these results of whole assemblages, are in many cases of doubtful utility. We reserve judgment on the implications of these patterns, except to note that it should come as no surprise that some sort of east-west contact did exist.

North Central Anatolia 325

Alaca Höyük

Alaca Höyük is situated in a north central position on the Anatolian Plateau, 100 miles northeast of Ankara at the junction of three great trade routes — from the Black Sea, Mesopotamia and from the Aegean. It was discovered in 1935; — from 1935 until 1949 the site was excavated by the Turkish Historical Association under the direction of R. Arık and H. Koşay who published their results (Arık, 1937; Košay 1944, 1947, 1951a, 1966 and 1973). Excavations continue to the present.

Within the excavated depth, 14 stratigraphic divisions based on pottery analysis were placed into four major phases I-IV from the latest to the earliest. Thus Alaca IV is the earliest and was originally termed « Chalcolithic », this is now deemed contemporary with Troy I or to the Anatolian Early Bronze Age II. Associated with this level are the spectacular 13 royal tombs which are dated to Anatolian EB II and EB III contexts.

Early levels have little architecture: in Level 12 is a stone cist tomb with a flexed inhumation burial; in Level 11 are mudbrick wall fragments on stone foundations; and in Level 9 are unbaked mudbrick walls. Handmade pottery includes some black-on-white painted wares, incised wares, and shapes that include fruit stands. Three main ceramic groups are identified: monochrome wares; so-called Alişar Hüyük 1 and 3 wares; and the famous east Anatolian Khirbet Kerak wares. There are few resemblances with Aphrodisias excepting for a few white-painted motifs.

Alaca III, originally termed the « copper age » is now dated to Early Bronze II — beginning Early Bronze Age III. It enjoys some parallels with Troy II. Other than the discovery of the fabulous royal tombs, vestiges of architecture include: in Level 7 stone foundations of a large building. In Level 6, similar architectural fragments are discovered with human skeletal remains which the excavators ascribe to an earthquake. In Level 5, rectangular-roomed houses constructed on stone foundations were noted to have been consumed by fire.

The extraordinary richness of the artifacts from the royal tombs can be paralleled to Troy II and the Early Helladic Bronze Age periods. But the stratigraphic alignment between the royal tombs and the habitation deposits is not clearly defined; the tombs may be aligned with either Alaca II or III, or at some point between the two levels. Their stratigraphy is still undergoing discussion.

^{325.} The publication of Karahöyük-Konya in the Konya Plain is eagerly awaited for it promises to provide alliances with western Anatolian sites.

Büyük Güllücek

This is a small mound located to the north of Alaca Höyük and excavated by H. Koşay (1948, 1957). The site is known for its Phrygian remains and a small Hittite deposit. Under one of the Phrygian walls were found two levels. Level 1, the earliest has rectangular two-to-three roomed house structures that are constructed of unbaked mudbrick walls on stone foundations. Level 2 is a settlement rebuilt directly over Level 1 — noteworthy are the ovoid-shaped stone-constructed rooms.

Both Alaca Höyük and Büyük Güllücek exhibit different cultural variables than we find at Aphrodisias. The corpus of Central Anatolian ceramics is distinctive and regionalized, as is the corpus of the southwest.

THE MIDDLE AND LATE BRONZE AGES

The Middle and Late Bronze Ages in southwestern Anatolia are difficult to understand. The information is scanty and fragmented. But very important developments that can be traced are taking place in Central and Eastern Anatolia during these periods. Geographic and cultural characteristics of the Konya Plain and Cilician sites are peculiar to their own regions — they vary greatly from the development of sites in the Anatolian southwest. The areas and events taking place in Central Anatolia and Cilicia are a subject too vast to cover in any kind of depth here, but a general synthesis is provided to stimulate thought on the temporal developments in other parts of Anatolia. And because sources on the southwest are indirect, their discussions are reduced to a minimum, concentrating on the stratigraphy of selected sites, and whenever possible on the connections that are shared with or seem to be western Anatolian in origin.

In the Middle and Late Bronze Ages, importations of ceramics are easily distinguished from native cultural elements, but the minimal number of these foreign elements makes it difficult to determine their origins. The problem is that Aphrodisias and Beycesultan share a unity and coherence, but it is almost impossible to distinguish between them and their indigenous development, and what is due to the penetration of elements foreign to them. No conclusions are being drawn, but the Central Anatolian and Cilician sites play such an important part in the Middle and Late Bronze Ages that they must be examined even though they may not have been in direct contact with our world of the southwesterners.

The Middle Bronze Age in Anatolia is chronologically correlated to Cappadocian developments (Mellink, 1965:118) because Mesopotamian historical texts have been found in Assyrian trading posts like Kültepe, Boğazköy and Alişar Hüyük. In the main, written documents consist of economic and legal matters but there are also literary texts from this period. The cultural sequence in the Anatolian west and those in Cappadocia in the northeast and Cilicia in the southeast all overlap, i.e., the Anatolian Early Bronze Age IIIB in the west is roughly contemporary with the beginning of the Middle Bronze Age in Cappadocia and Cilicia. For that reason some Early Bronze alliances will be outlined in these site abstracts, as well as those of the Middle Bronze Age. Cappadocian sites are used for comparative chronologies because in addition to textual references, there are wellstratified pottery sequences and seals. Cylinder seals were in common use in Mesopotamia, and in Cappadocia they are found earlier in common use and in stratified contexts than elsewhere in Anatolia. The series of events that take place ca. 1900 B.C. in the flourishing Assyrian trade outpost at Kültepe, near Kayseri, makes it the leading city of the Middle Bronze Age. Until its destruction in ca. 1875 B.C., this city had a direct impact on the cultural development of Central Anatolia and to a lesser extent on the eastern trade centers with which she was affiliated.

The aftermath of this widespread devastation and burning left the once wealthy central Anatolian area dormant until ca. 1785 B.C., when the city of Boğazköy, the future capital of the Hittites was rebuilt on its own destruction level. The Hittites open a new era of domination over Central Anatolia which rivaled the Babylonian and Egyptian empires. After a remarkable series of military conquests an empire is created that in the second half of the 14th century extends from the Euphrates River on the east to the border of Lebanon on the south to the edge of the Central Anatolian plateau on the west, and to the Black Sea in the north. The establishment of Hittite political power extended far and wide, and often determined the fate of central and eastern Anatolia. In the west, Anatolian cities like Troy and Beycesultan were centers of power, probably rich from trade. What was their relationship with Boğazköy? Why was western Anatolia independent from Hittite domination? Hittite textural references refer to « Arzawa »... but exactly where was Arzawa? Mellaart and now traditional theory places its center and capital at Beycesultan, but excavations have not confirmed this. In any case, it was in a region to the west of Hittite control. Little is known about the political events taking place in the west during this time. If there was a decisive encounter between the Hittites and these people, it is not known where it occurred. We are in no position to extract more than what appears obvious and that is that western Anatolia must have been reinforced at several points, in time as well as places, to discourage Hittite domination. But by whom? What is known from the archaeological record is that the west was beyond Hittite suzerainty.

Philological research devoted to the Hittites has not helped to define the development of the Anatolian southwest during the second millennium. But what archaeological research makes clear is that there are so few sites in this period — especially in comparison with those of the third millennium. Mellaart (Lloyd and Mellaart 1956:118-123) has proposed that there may have been fewer small villages because populations concentrated in larger urban centers. At Aphrodisias the picture is clouded due to Classical and Byzantine occupations cutting into the Acropolis Middle, Late Bronze, and Iron Age strata. Yet another complication is the complexity of trying to separate the Middle Bronze deposits from those of the Late Bronze Age, and in turn those of the Late Bronze Age from those of the Iron Age. In addition there are too few sites that have been published. Pertinent to any study of western Anatolia are hoped — for publications of Ephesus, Bayraklı, Müsgebi and Miletus — all of which have synchronous developments. Thus direct eastern bonds between the Hittite culture and Aphrodisias as yet do not exist, and western alliance with the Mycenaean culture is also lacking.

This expansion of the Aegean by the Mycenaeans is to be reckoned with. It is unlikely that they moved far from the coast into the interior — they appear to have restricted their activities to cities and settlements along the littoral. The interior of the southwest may have been content to be left alone. It seems that during the Middle and Late Bronze Ages southwest settlements survived as local autonomies, enjoying independence from the mainstream of important activities taking place to the east and west of them. In order to have some idea of developments outside the southwest, brief site abstracts are presented for Central Anatolian sites and then we will return to the Eastern Aegean, Troy and finally closer to home, Kusura, and then back to the Anatolian southwest to examine aspects characteristic to its development during this time.

Central Anatolia

Kültepe Kanesh

Kültepe, ancient Kanesh, is located in Cappadocia 21 km northeast of Kayseri; it is situated in the fertile Kayseri Plain. It was strategically located along one of the main east-west trade routes. This route ran from Assur to Diyarbakır and then on to Malatya and on to Kültepe. Early investigations were carried out by A. Chantre 1893-1894 and then by H. Winkler in 1906, who made the

discovery of the Boğazköy archives. Because modern villagers had discovered tablets at the site, it was excavated in 1925 by the epigraphist B. Hrozny who deciphered Hittite cuneiform. Excavations were resumed in 1948 by T. and N. Özgüç of the General Directorate of Antiquities and Museums of Turkey, and The Turkish Historical Society.

Situated on two sites, Kültepe is composed of two separate settlements — one is the indigenous town, and the other an Assyrian trading colony known as the Karum. The Karum at Kültepe was the center of control in east Anatolia for Assur, the Assyrian capital in north Mesopotamia. The town höyük rises 20 m above the plain — it is 500 m in diameter; the Karum is located to the northeast, east and southeast sides of the town at a lower elevation and extends 1500 by 1000 m. The town site is inhabited from ca. the 4th millennium, and the Karum from ca. 1900 B.C. The town levels are given Arabic numbers 1-14, from the latest or most recent to the earliest or most ancient. Karum levels are numbered with Roman numerals I-IV from latest to earliest. In Levels IV and III, writing is unknown, but in Karum II, dated ca. 1950-1850 B.C., were recovered 15,000 documents! One of their most important contributions is that among the names mentioned in the archives are those of Indo-European origin indicating the admixture of peoples at that time for this area. Later, fewer written documents were recovered and with the destruction in this Level, I, the Assyrian language and cuneiform script cease to be used.

As mentioned previously, M. Mellink (1965:118) uses Kültepe as the key site for the four divisions of the Middle Bronze Age: M.B. I is attributed to the foundation of the Karum and to the tremendous expansion of both Kanesh and Karum IV-III, or to ca. 1900 B.C.; M.B.II is the high period of the Assyrian colonies and Karum II — Mellaart places the alliances with Troy V-VI here; M.B. III is the reactivation of the Karum (Karum Ib); and M.B. IV is its end — which is contemporary with the rise of the Hittite Old Kingdom ca. 1650 B.C.

The pottery of the earliest period is still undergoing analysis, but in the Early Bronze III is identified three broad phases based on ceramic alliances with Troy. In Kültepe 13, a depas cup fragment shows contact between this area and the Anatolian northwest during the Anatolian EB III. Indigenous « Copper Age » red monochrome pottery is found alongside Syrian wheelmade jugs. (In the Karum IIIc are Syrian imports and depas cups.) In Level 12, a megaroid unit is unearthed and associated with it are wheelmade plates, Type A 1 of Troy II-IV, providing yet another linkage with the Anatolian west. In Level 10, the so-called « Cappadocian » ceramics appear, along with Syrian blackish gray wheel-burnished bottles, which are paralleled to Tarsus E.B. III contexts. In Levels 9-6

the Middle Bronze Age is in full sway with contemporary material. 326

Based on the present evidence, Kültepe and Aphrodisias exhibit different cultural patterns in ceramics and artifact assemblages. Only a few forms, bowls and trefoil-spouted jugs, are shared by both sites. We expected differences between these sites and their distinctness confirmed our expectations.

Alişar Hüyük

Alişar is a large höyük located 200 km east of Ankara and 85 km southeast of Boğazköy (*infra*). It rises 30 m above the plain and measures 520 m in length and 350 m in width. Excavated by the Oriental Institute of the University of Chicago between 1927 and 1932, the work concentrated on two areas — the citadel located on top of the mound (M) and the terrace area (T) located at the bottom of the mound in the plain. Once excavated the two areas were allocated levels but these are confused, and there are multiple sets of terminologies for the site (Schmidt 1932: Bittel 1934; von der Osten 1937, and Orthmann 1963). Huot (1982:72) outlines the correspondences between the levels containing remains of Chalcolithic, Early Bronze, and Hittite periods.

49 tombs are found dated to the third millennium including those belonging to the « Copper Age » and the Early Bronze Age (von der Osten 1937:137-50; 223-30) — 31 of these are jar burials which provide important information on differential burial treatments. « Copper Age » ceramics are comprised of the aforementioned red monochrome wares. These are variously dated but most scholars agree that they belong to Early Bronze Age I after which intermediate painted wares make their appearance. These are followed by the well-known Cappadocian painted wares that co-exist with the continuing copper age red wares; finally in the Middle Bronze Age, copper age wares³²⁷ are wheelmade and are found alongside Cappadocian wares. It is seen that the levels at Alişar have synchronic developments that can be paralleled to Kültepe (Mellink 1965:118).328

- 326. For simple bowls and those with angular profiles at Kültepe (Özgüç 1950: Pls 73.533, 535; 78.602; Pl. 70.490). D. French (1969: Figures 15, 16) has also found some of these types in northwestern Anatolian contexts. Also from Kültepe is a trefoil-spouted jug (Özgüç 1950: Plate 57.308).
- 327. von der Osten 1937: Figure 180, e31, e2735 and e2738. Late Alişar resemblances are closer to Aphrodisias and Beycesultan than are the Boğazköy parallels there is a beard-spouted vessel with a break between its elongated neck and the rounded body (*ibid*. Figure 186, e877).
- 328. Simple bowls are found at Alişar (von der Osten 1937: Figures 166-167) and bowls with angular profiles (*ibid*. 1937: Figure 169). Also see note 325, *supra*.

Boğazköy

The modern village of Boğazköy is located 150 km east of Ankara. Not far from the village are located the ruins of the Hittite capital, Hattusas, discovered in 1834. The site has been excavated by German expeditions in 1906-1907, 1911-1912, 1931-1939, 1952-1975 and even today research continues. The most important publications include Bittel (1957), Fischer (1963) and Orthmann (1963). In this vast site are three main excavation locations: Büyükkale the citadel, « Unterstadt » the lower city, and the Karum of the 19th-18th centuries B.C. Each is given a distinctive stratigraphic nomenclature: Büyükkale, or the citadel of the kings' residences and important buildings consists of five levels, I-V: Level I is the latest, Level V the earliest. Büyükkale Level V is divided into six phases Vf-Va — the earliest, Level Vf, is characterized by the Cappadocian wares. Unfortunately, earlier levels are erased by later construction. Level IVd, dated to the 19th century, is contemporary with the influx of Assyrian colonizers of Central Anatolia. Level III is represented by the erection of monumental buildings — the temple, residences, storehouses and fortifications - and Levels II and I correspond to a post-Hittite settlement.

At the foot of the citadel is the « *Unterstadt* » or lower city with monumental Temple I at its center. The stratigraphy of this excavation area is also divided into five levels (1-5), from latest to earliest. Level 5 is not securely dated due to its lack of architecture. Level 4 is Cappadocian and corresponds to Level IV on Büyükkale; in this heavily burned level are found tablets of the Kültepe-Karum Ib period; Level 3 is dated to the Empire Period. Levels 1 and 2 are dated to the Neo-Hittite period (ca. 15-12th centuries B.C.). 329

W. Orthmann (1963) and F. Fischer (1963) have published the early Hittite pottery from Boğzaköy which finds a few resemblances to the ceramics of both Aphrodisias and Tarsus. 330 As mentioned, Mellaart (1958c:326)

- 329. Bowls are found at Boğazköy *Unterstadt* J21, Level 2 (Fischer 1963: Plate 119.1062) that resemble a Beycesultan III form (Lloyd and Mellaart 1956: Figure 5.611), but this vessel is pattern-burnished. Trefoil jugs are also present. Boğazköy *Unterstadt* Level 2 Fischer 1963: Pl. 38.403 is similar to Beycesultan (Lloyd and Mellaart 1956: Figures 4.6.3; 1958c.22.).
- 330. In Fischer's diagram (1963: Figure 18) of the Boğazköy ceramic development, it can be seen that the Late Bronze Age Boğazköy examples have elongated necks and are thinner, more elongated bodies that are also more angular in profile. Beak-spouted jugs at Aphrodisias and Beycesultan are squat and therefore have a different profile. Short-necked, beak-spouted parallels are found in Beycesultan Levels IV and V (Lloyd and Mellaart 1956; Figure 4.12) that can be paralleled at Boğazköy on Büyükkale in Level IVd of the Middle Bronze Age. In the Late Bronze Age Beycesultan Level II these forms can be paralleled (Lloyd and Mellaart 1955: Figure 13.1-4) at Boğazköy Level III Büyükkale in the 13th C (Fischer 1963: Figure 18.260-262), but the Beycesultan neck is more elongated and more angular in profile. It is of

believes that EB III western shapes are present in the wares of the Middle and Late Bronze Ages. To prove his point, he aligns Kültepe II shapes to Beycesultan. The ceramics of Boğazköy, 331 Kültepe, Alişar Hüyük 332 and other central Anatolian sites provide some general similarities, particularly with early Hittite shapes. These questions will not be considered in any detail in this volume because of the chronological and stylistic problems involved.

Cilicia

Mersin

Mentioned *supra*, Mersin Levels XI-VIII are dated to the second millennium. The architectural elements are comprised of house walls on stone foundations. Painted ceramics of Syrian origin are characteristic of all levels. Mersin IXB is correlated to a Troy V date. Levels VII-V are of the Hittite period, and there is a section of a rampart which closely resembles that of Hattusas. Levels III-I are dated to periods later than the scope of this report.

Tarsus

At a depth of 8 m, the transition between the Tarsus Early Bronze and Middle Bronze Ages takes place. Later buildings obscure these deposits but their most important remains are a series of burials. New ceramics — painted North Syrian wares — are introduced to Cilicia which become the hallmark of the Middle Bronze Age I period throughout the coastal plain; connections between Tarsus and Kültepe are based on the distribution of these ceramics. Thus Kültepe-Karum IV is dated to the Cilician M.B. I.

Between the Middle and Late Bronze Ages at Tarsus there is no break — the transition is a gradual one.

There are distinct differences between the assemblages of Tarsus and Aphrodisias. After a comparative review of the ceramics, the most important factor is that

- interest to compare the Beycesultan jugs found in Levels V-II (Lloyd and Mellaart 1965: Figure P.8.11, 13-16; 1955: Figure 15.5 6, 8, 12 and those from Boğazköy (Fischer 1963: Plate 55.533, 535, Plate 64.581, 684, 585) for they have more rounded bodies, but at Alişar, contemporary pieces are more pointed (von der Osten 1937: Figures 195-197).
- 331. Beak-spouted jugs Level 9 NW slope Boğazköy (Orthmann 1963: Pl. 1.40); Beycesultan, Level IV (Lloyd and Mellaart 1956: Figure 4.16; Mellaart 1958c:326,13-19 the phase is not indicated). Büyükkale Level IVd (Fischer 1963: Plates 21, 22, 26). Level 4 of the *Unterstadt* M/18 (Fischer 1963: Plate 21.232-235). These are dated to the 13th C. (*ibid*. 101). See also Büyükkale flat rimmed jugs (Fischer 1963: Pl. 51.499).
- 332. Flat rimmed jugs are also found at Alişar Hüyük (von der Osten 1937: Figure 172.c500, c2162) and Kültepe (Özgüç 1950: Pl. 49.237-240).

the two sites have totally different ceramic influences at work, however, there are ceramic indicators of cultural contacts that appear to flow more from the west to the east, rather than vice versa.

The Aegean Coast

Thermi

Thermi is also occupied in the Middle and Late Bronze Ages but the architectural elements are scattered and it is impossible to reconstruct its areal extent. Lamb divides the excavations into two strata based on the variations of Lesbian Red and Gray wheelmade wares. There are marked similarities between these ceramics and those of Troy V and VI, but other influences are also extant. Level I is characterized by a « Transitional Class » of pottery which has similarities to both Middle Helladic and Middle Minoan wares. In Level II the so-called « Wellbowl » and « Developed » classes appear, including Mycenaean imports and imitations, Mycenaean bronze swords and daggers, and ceramic reel-type artifacts that date this level to Troy VI or to the Late Bronze Age. By virtue of the facts that there are no sub-Mycenaean ceramics, and that the site is destroyed by fire, its terminus can be reasoned to fall at ca. 1200 B.C.

Of interest are the Mycenaean imports at Thermi (Lamb 1936: Figure 42). There are alliances that can be found with Aphrodisias in bowl shapes (*ibid*. Figures 39.2-4), jars (*ibid*. Figure 40.1, 9-11), and those with spouts that are either trefoil in shape (*ibid*. Figure 41.1,3) or beaked (*ibid*. Figure 41.5-9), which we find in our Late Bronze Age contexts; and finally, the pithoi (*ibid*. Figure 43).

Northwest Anatolia

Troy

Troy continues to be a site yielding impressive remains in the Middle and Late Bronze Ages. It is not clear if Troy VI develops from Troy V or if there is a hiatus between the two deposits — what is clear from the evidence is that there is a marked difference between the traditions of the two levels. Troy VIa is traditionally thought to mark the beginning of the Middle Bronze period and Troy VIh, destroyed by an earthquake, brings about its end. It is difficult to align Troy with Central Anatolia; her culture sphere is so involved with Aegean developments. This is even more true in the Late Bronze Age — during this period Mycenaean imports come to our aid and Troy VIIa-b1 can be correlated to Mycenaean chronology.

Middle Bronze Troy VI is important as the differences between it and Early Bronze III Troy V extended to

all features at the site: architecture, burial customs, artifact corpus and even faunal remains. It is divided into eight phases, VIa-VIh. It was excavated from 5 to 6 m in depth around the citadel perimeter inside the fortification walls, which undergoes three or more phases of construction — three rebuilt gateways are correlated to this period. The first two phases are not clear, but the third phase shows the walls to be more than 4 m thick. They are erected with vertical offsets using a number of masonry styles. In the main rectilinear ashlar limestone blocks of differing sizes are set in alternate courses — these rest on stone foundations that are over 1 m in thickness. Segments of the lower exterior wall are preserved up to 9 m; the lower portion is battered with a mudbrick superstructure. Towers are set at irregular intervals; they do not flank the gates where the walls are set one inside the other so that access to the city is strategically indirect. At some later time, in Late Troy VI, much of the mudbrick superstructure is replaced with a stone wall that uses as its base the battered portion of the earlier wall. On the interior, a concentric 3 m-wide walkway is constructed to circumvent the wall. The area of the citadel is then greatly expanded, and with the use of terraces the general city plan appears to have been reconceived of dwellings built along radii or streets that radiate from the center of the city. Because the citadel area was razed by Hellenistic and Roman building programs, these plans are based on fragmentary architectural evidence.

House construction consists of large rectangular free-standing structures (House 630). Later Troy VI dwellings are constructed on variations of the megaron plan. One of the best preserved houses is the rectangular Pillar House with three subdivisions in its substructure, and two pillars tapering toward the top of its ground-floor central and largest room. Access to the house is on the long side of the central room. Some of these houses are probably two-storeyed, the second floor being supported by pillars. Evidence for interior staircases are found in the Pillar House and in House VIF. House VIM is L-shaped in plan and has an open court. As Troy VI progressed, there appears to be less uniformity in house plans.

Religious architecture is also affiliated with Troy VI. To the outside of Tower VIi, the main gate leading to the city, is found an installation with four pillars, and inside the tower itself is a raised and rounded paved area with two columns set in the middle — all this suggests a shrine to the excavators.

To the south and well beyond the citadel on the plateau, a disturbed cemetery is located that was dated to Troy VIh. 182 burial urns set into pits containing cremated bodies are found in an area greatly disturbed by later activity; Blegen speculates that at least 300 individuals were originally buried here — only 19 burials are found in

situ. The pits are shallow and packed with small stones — the burial containers are closed with either a stone slab or with plates. Most of the burials are multiple; few contain both adults and children. Many of the containers seem to have been broken before burial use, indicating that originally they may not have been manufactured specifically for burial. Very few offerings are placed with the dead; Blegen reasons from this the individuals may have been of a lower social status. No other major cemetery has been located at Troy, and this one appears to have been established for the earthquake victims of Troy VI.

Troy VI. The artifact corpus of Troy VI finds close parallels with Mycenaean objects. Whether they are local imitations or imported items is not clear. Small pâte de verre beads and other objects are Mycenaean in origin. The ceramics of Troy VI are characterized by innovation, for there is a cultural break in the ceramic tradition. The most important Trojan ware is the wheelmade gray-colored fabric akin to gray wares in both Anatolia, the Cyclades and the Greek Mainland. Greek matt-painted wares also appear in Troy VId and VIf through VIg. By the final phases of the period, Mycenaean wares are locally manufactured. Spindle whorls are no longer decorated with incisions. Faunal remains of Troy VI include the horse which appears at the beginning of this level. Troy VI's destruction is attributed to an earthquake because little traces of burning were found.

Troy VIIa. If Troy is indeed the site of the Homeric Hisarlık, then Troy VIIa is the level of Priam's city. Blegen places the short life-span of this city from 1275 to 1240 B.C., but this level may belong to an earlier time slot. It is composed of one level with no subdivisions. The end of Troy VIIa is disputed by scholars — there are those who agree with Blegen and others who wish to place its end to 1200-1190 B.C., basing their arguments on Mycenaean imports. The fortification walls of Troy VI are reconstructed in Troy VIIa, and the E gate access is rebuilt to make the city more difficult to enter. The south gate is repaved and a drainage system is constructed under the ramp. Those Troy VI houses that are still standing are rebuilt on the terraces — there is also evidence that the citadel is more populated in Troy VIIa than it had been in VI for many more house remains are revealed. And residences are now discovered to extend outside the citadel wall — thus during Troy VIIa, a lower town exists. The fashion of using pithoi for storage is prevalent, and house floors are found interlaced with pits so that the large jars could be sunk below floor level. Remains of the water supply for the citadel are found in a well near House VIh and in the cistern of Tower VIg. A few human skeletal remains are associated with the living areas of Troy VIIa. These are not burials, but victims of the fire-devastation that demolished the city. The artifact

corpus of Troy VIIa is close to that of VIh, except for a decline of Mycenaean wares and the introduction of a new tan ware with a dark slip. Otherwise, the artifactual evidence does not undergo any changes.

Troy VIIb1 is dated ca. 1200-1150 B.C. by Blegen. Domestic units are rebuilt over Level VIIa remains which are reused. In plan there is little difference between the two levels. The fortification walls are again rebuilt and the road leading through the south gate is replaced. Artifacts appear to be the same as the preceding level.

Troy VIIb2. This level is dated ca. 1150 to 1050 B.C. The fortification walls standing from Troy VIIb1 continue to be serviceable, but by this time the east gate is no longer in use; the roadway of the south gate is once again repaved and this gate serves as the main access to the citadel. The habitation areas inside and outside the city walls are still in use. House units are larger in this period. A new element in domestic construction is the use of orthostats for added support between the foundations and the superstructure. Bronze tools unearthed by Schliemann are ascribed to this level, but the context of their discovery is not clear — (parallel craftsmanship has been found in Hungarian contexts). Like Troy VIIb1, the ceramic corpus does not go through any change except that « Knobbed Wares » are introduced. There has been a great deal of discussion to ascertain if their presence is indicative of a new population element — this may be, but the wares of earlier periods continue to be in the majority.

Troy VIIb2 is probably destroyed by fire. Thereafter the site is deserted for a time span of ca. 300 years. It is reoccupied by the Aeolic Greeks in the 8th century B.C.

Many Troy VI shapes are familiar (Blegen et al. 1953: Plate 352:5,8,10,11,15) but the ribbed pedestal bases (*ibid*. Plate 353) are not found at Aphrodisias. Troy VIIb has a figurine (Blegen et al. 1958: Plate 254:37-501) that is a sister to the one found at Aphrodisias. In addition coarse wares (*ibid*. Plate 285-86) are similar as well as the ring and pedestal bases found there in Plate 287, but the knobbed wares (*ibid*. Plates 280-82) and Mycenaean wares (*ibid*. Plate 279) find no ceramic similarities at Aphrodisias.

There are sufficient grounds to infer that sometime during the Late Middle Bronze or Late Bronze periods, there are greater distinctions between the Troy — Aphrodisias communities. In the case of Troy, the qualitative evidence is dependent on her geographic contact with the Cyclades and the Aegean. The relationship between the ceramics of the two sites indicates that by the Late Bronze Age, there is some, but not as much a ceramic connection as there had been in the Aphrodisias Early Bronze and in the Bronze Age 4 — Middle Bronze periods.

Southwest Anatolia

Kusura

The Period C at Kusura belongs to the second millennium. Lamb (1936, 1937) did not separate it into phases belonging to either the Middle or Late Bronze Ages. The wares are described as being buff, red or gray clay sometimes faced with red, brown or buff surface colors as the result of polish, wash, paint and or slip. Brown-colored wares occasionally carry a metallic slip-wash or a glaze. Not often present are pattern-burnishing, grooving or other plastic decoration including appliqué.

Between Kusura B (supra) and C there is what Lamb refers to as a period of transition manifested by red-cross bowls and a depas cup fragment. It is difficult to rely on these horizon markers as having any firm chronological basis. Lamb dates Kusura C to the Hittite period, and Mellink (1965:120) relates the ceramics of this period to Middle Bronze III types. Kusura C architectural plans are not complete; the most important feature is a casemate wall fragment 3 m in thickness.

Pottery comparisons between Aphrodisias BA 4 — Middle Bronze and Kusura C form a cultural coherence — there are many shared ceramic ideas. But there are distinctions in the small objects, particularly figurines, which we would suggest is a regional variation. On the basis of the evidence there remain distinct qualitative factors that suggest two different communities that share a majority of relationships but reflect significant differences.

Karataş è Bağbaşı

At Karataş, the Bağbaşı area contained houses that Miss Mellink dates to the beginning of the third millennium, supra, as well as vestiges dated to the second millennium (Mellink 1969:320). Save surface scatters, Bağbası produced no architecture, but ceramics of a domestic nature (ibid. 330). The Middle Bronze Age ring bases as well as the jug, jar, bowl and cooking pot rims look identical to those unearthed at Aphrodisias (ibid. Plate 78. Figures 40-45). Also there are burial pithoi, now oriented to the N/NW, with closing slabs and markers that belong to this period. (But the two-handled wheelmade jar associated with the Trench 107 Bağbaşı burial (ibid. Plate 78, Figure 42) does not find an Aphrodisias counterpart.) On the mound was found Pithos D which contained a wheelmade bowl of buff fabric (Mellink 1967: Plate 78, Figure 29) which is familiar to us. Miss Mellink looks to Boğazköy, Alaca Höyük and Tarsus for parallels for these second millennium wares. She is correct in finding affinities with Central Anatolia and Cilician ceramics — there are similarities in the assemblages, but the differences between them seem to us to be more striking.

Beycesultan

Levels V-IV. The Middle Bronze Age of Beycesultan (Levels V-IV phases a-c) is an important settlement that culturally continues into the Late Bronze Age (Levels III-I). Lloyd and Mellaart (1965) published the Middle Bronze Age architecture and pottery, the Late Bronze Age architecture is published by Lloyd (1972), and much of the pottery is published by Mellaart (Lloyd and Mellaart 1958c). Extensive architectural remains and divers rebuilding are characteristic of the Middle Bronze Age phases: the « Burnt Palace » and the five-room megaron of Level V are dated from 1900 to 1750 B.C. (Lloyd and Mellaart 1965:73). Level IV consists of reuse of the area by squatters. Mellaart asserts that the Hittite invasion of Arzawa (or more specifically Beycesultan — the supposed capital of the Arzawa state, supra) is synchronous with the destruction of Beycesultan Level V and should be dated to 1750 B.C. (ibid.).

As at Aphrodisias, Beycesultan Middle Bronze Age pottery continues from the preceding period without a break.333 But in Level IVa, they find a change which evolves into a cultural dictum by Level II. In Levels V and IV, Lloyd and Mellaart (1956:69ff) describe the wares as being red or buff with a dark gray ware also occurring in Level IV. They report a sparing use of red, brown and purple washes continuing at Beycesultan from EB III. Pottery manufacture is characterized as being wheelmade, redslipped or washed, often burnished with no painted decoration and little plastic decoration. The shapes are influenced by metal prototypes: shallow hemispherical incurving or carinated bowls with bead rims, chalices and highnecked jars.334

- 333. Carinated bowls with beaded rims and our Aphrodisias rolled (thickened) family and moustache appliques are popular at Beycesultan (Mellaart 1958c: Pl. VI, 75, 76) as well as simple carinated bowls with beaded rims (ibid. 77-79) and plain bowls with stringcut bases (ibid. 326, Pl. IX. 166, 170, 172).
- 334. Suggested Beycesultan M.B. Aphrodisias Parallels. Lloyd and Mellaart 1965:

Lioya and Menaart 1705	•
Beycesultan	Aphrodisias (Acropolis, trenches 5, 7)
Figure P.1.1	Figure 485.23
Figure P.1.2	Figures 460.8, 485.23
Figure P.1.5	Figure 454.4
Figure P.1.8	Figure 457.17
Figure P.1.15	Figure 454.10
Figure P.1.21	Figure 457.4
Figure P.2.1	Figure 457.8
Figure P.2.2	Figure 457.16
Figure P.2.4	Figure 460.8
Figure P.2.18	Figure 477.28 (rim only)
Figure P.2.25	Figure 454.3
Figure P.3.3	Figure 485.22
Figure P.3.13	Figures 454.12, 457.9
Figure P.3.16	Figures 454.21, 485.20
Figure P.3.18	Figure 477.10
Figure P.3.20	Figure 485.27
Figure P.3.25	Figure 477.23
Figure P.3.27	Figure 485.31

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Figure P.4.5
                           Figures 457.28, 477.21
Figure P.4.9
Figure P.4.11
                           Figure 485.3
                           Figure 454.13
Figure P.4.15
                           Figure 454.16
Figure P.4.16
                           Figure 454.7
Figure P.4.17
                           Figure 454.9
Figure P.4.18
Figure P.4.21
                           Figure 485.1
Mellaart's « Eggshell and Palace Ware » bowls (Figure P.5.1-17)
can be paralleled at Aphrodisias. A particularly good comparison
is Beycesultan Figure P.5.3 and Aphrodisias Figure 457.2.
Figure P.5.20
                           Figure 454.20
Figure P.5.24
                           Figure 477.24
                           Figure 457.31 (handle only)
Figure P.6.3
Figure P.6.14
                           Figure 444.1
                           Figure 454.30 (rim only)
Figure P.7.2
                           Figure 477.34
Figure P.7.6
                           Figures 457.14, 477.29
Figure P.7.10
Figure P.7.11
                           Figure 477.42
                           Figure 457.33
Figure P.7.12
                           Figure 457.10
Figure P.8.11
                           Figure 457.7
Figure P.8.14
Figure P.8.16
                           Figure 457.13
                           Figure 477.28 (decoration)
Figure P.9.4
Figure P.9.5
                           Figure 457.29
Figure P.9.6
                           Figure 454.35, 457.32
Figure P.9.7
                           Figure 485.16
Figure P.10.1
                           Figure 477.14 (handle only)
Figure P.10.2
                           Figure 477.3
Figure P.10.4
                           Figure 454.21 or 457.9
Figure P.12.5
                           Figure 454.4 (appliqued)
Figure P.12.6
                           Figure 454.11
Figure P.12.8
                           Figure 454.18
Figure P.12.9
                           Figure 485.4 (appliqued)
Figure P.12.12
                           Figure 484.4
Figure P.13.15
                           Figure 485.30
Figure P.13.26
                           Figure 485.5
Figure P.17.6
                           Figure 485.37 (base only)
Figure P.18.4
                           Figure 488.10
Figure P.18.5
                           Figure 488.12
Figure P.18.6
                           Figure 497.38
Figure P.18.10
                           Figure 488.7
Figure P.18.11
                           Figure 496.23
Figure P.18.12
                           Figure 489.25
Figure P.18.13
                           Figure 488.17
Figure P.18.15
                           Figure 488.29
Figure P.19.4
                           Figure 490.33
Figure P.19.5
                           Figure 490.28
Figure P.19.6
                           Figures 488.38, 39
Figure P.19.9
                           Figure 490.14
Figure P.19.11
                           Figure 493.8
Figure P.19.14
                           Figure 496.24
Figure P.19.16
                           Figure 496.6
Figure P.19.17
                          Figure 497.4
Figure P.19.18
                           Figure 497.30
Figure P.19.20
                          Figure 497.19
Figure P.19.23
                          Figure 490.12
Figure P.19.25
                          Figure 490.29
Figures P.20.3, 4
                          Figure 490.50
Figure P.20.7
                          Figure 490.46
Figure P.20.16
                          Figure 493.13
Figure P.25.7
                          Figure 407.15
Figure P.25.8
                          Figure 407.19
Figure P.36.8
                          Figure 407.26
Figure P.38.8
                          Figure 407.13
Figure P.38.9
                          Figure 407.14
Figure P.41.5c
                          Figure 407.6
Figure P.46.5
                          Figure 407.11
Figure P.46.6
                          Figure 407.10
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Figure 457.6

Figure 454.16

Figure P.4.4

One of the many problems of these periods is to distinguish between them. At Aphrodisias it is difficult to separate Bronze Age 4 from the Middle Bronze — that is the reason why the period attributions have been joined: Bronze Age 4 Middle Bronze. In the discussion of northwestern sites, Mellaart (1955:61) found it difficult to separate the Middle and Late Bronze Ages. In the southwest, there are few if any distinctions that can help solve when the Middle Bronze Age ended and the Late Bronze Age began. The problems of Aphrodisias are linked to Beycesultan as the two sites share in contemporaneous development. If further proof could be found for Mycenaean contacts, then Mellaart's critics should be stilled. Only further excavations in Middle and Late Bronze deposits will settle this issue. Ultimately the dating of both Aphrodisias and Beycesultan will be determined on the basis of firmer chronological links. Unfortunately Aphrodisias provides few answers to these questions. And there are few architectural correspondances between Aphrodisias and Beycesultan for it is only in our Acropolis Complex C and B megara that tentative broad-based architectural alliances can be drawn. Mellaart repeatedly asserts that the Anatolian southwest develops independently from other areas during the second millennium. Although it is true that similar ceramic shapes occur in Hittite contexts (infra), he maintains (1965:78), and perhaps rightly, that the individual characteristics of the southwestern pottery form a distinct culture province. He (1955) looks to the Aegean for ceramic influences particularly the askoi (ibid. Figure 14.1-4), shapes (ibid. Figures 16, 17); and chalices he compares to the Mycenaean kylix, and a few of the pithoi. In reviewing the Beycesultan volumes, Mellink (1967:8-9) suggests another tack that should be taken in the analysis of this period:

« In an inward analysis of these affinities, one would have to separate those of the Beycesultan pottery shapes which seem typically west Anatolian (e.g. the goblets of level V, shape 12-13, the « drum » shape 33; level IV; the pedestalled bowls shape 34, level IV) from shapes with more or less noticeable « Hittite » affinities (level V bowl shapes, wheelmade bowls, beaked pitchers, trefoil pitchers, basket-handled and two-handled jars, teapots, level IV strainer bowls) and make a series of comparisons with Troy and the west coast for the first, with Phrygia and more properly Hittite lands for the second, checking the latter also in Cilicia. »

What is clear is that the ceramics of Levels V-IV can be linked to Aphrodisias.³³⁵

Levels III-II. Important architectural features include the megaron shrines in area R; the Little Palace including

335. A parallel with a Beycesultan II form (Lloyd and Mellaart 1955: Figure 13.1-3) was found in a cist grave at Kültepe in the second building level, is a beak-spouted jug (*Ibid*. Plate 37.153) with an elongated neck and globular body.

a megaroid and also residental unit in Areas J and L, ascribed to Level II along with a wine and food shopping area, servants' quarters, streets, stables and grooms' quarters. These units are completely destroyed at the end of Level II and are partially rebuilt in Levels IB and IA.

There is some controversy regarding the dating of the Beycesultan sequence. Mellaart dates Levels III-I to ca. 1450 to 1250-1100 B.C. Basing their argument on the early Hittite influences on the Beycesultan ceramic industry, critics assign these levels to the Middle Bronze Age. Mellaart (Lloyd and Mellaart 1965:80-81) primarily relies on the presence of three Mycenaean vessel fragments for dating Beycesultan Levels III to I. From Beycesultan Level III, Mellaart assigns another fragment (Mellaart 1970: Figure 4) to an imported stirrup jar of Mycenaean IIIA or IIIB. F. Stubbings (ibid. 63) dates this type of vessel to fall between 1360 and 1240 B.C. From Level II is a group of six fragments from a globular vessel with parallel horizontal matt red-brown bands which he asserts are imitation Mycenaean IIIB. The date therefore for the end of Level II he places at 1225 B.C. Again in Level II is a pyxis fragment similar to a fragment, C 56, found in a Troy VII context or 1275-1190 B.C. (ibid.).

From Aphrodisias, cat. no. 565.3 (Figures 239, 486.8) is described by Mellink (1970:163, ill. 8) as a « fragmentary local (?) version of a Mycenaean-type figurine ». We would wish that this assignment could be secure, however, it does not prove useful, for its supposed similarities to Mycenaean figurines is inconclusive. (Further discussion relating to this figurine can be found in Part 4, p. 216).

Other artifacts, in particular the pottery, are of significance for many correspondences are found. In reference to the wares introduced in Level IVa, Mellaart (Lloyd and Mellaart 1955:53) calls the wares of these periods « lustrous ware » and distinguishes between their colors: copper red, silvery gray and gold. Mellaart suggests that these surface colors can be associated with metal forms that probably inspired them. Mellaart (*ibid*. 79) reports:

« "Gold ware" occurs at Beycesultan from periods III to I and is most common in III and II. The fabric is reddish or buff, sometimes with a gray core and decorated with a wash of gold dust which comes off when rubbed and is never polished. »

These wares, so popular at Aphrodisias, are unquestionably elegant — the metallic sheen is produced with a slip-wash composed of a high mica content. Other sites where this technique of decoration has found favor are Boğazköy (Lloyd and Mellaart 1955:79) where they are dated to the end of the 14th or 13th c. B.C., and Sardis. ³³⁶ At Kusura (Lamb 1937:24) reports a metallic sheen

associated with painted designs as at Aphrodisias. D. French (1969:72) discusses lustrous wares and he finds them to be concentrated in the Akhisar-Manisa and Balıkesir areas. Silver slip-wash vessels are also known from Bayraklı, so they have widespread popularity. Once they are published, it should be possible to get a grip on the chronological and stylistic questions that are raised by their presence.

Comparable Beycesultan-Kusura-Aphrodisias ceramic correspondences are numerous — and the results are that the three sites share in a similar ceramic development.³³⁷ Because Beycesultan and Kusura ceramic alliances have already been the subject of published discussions, only Beycesultan-Aphrodisias corresponding shapes will be outlined in the notes below.³³⁸

If the Aphrodisias collection is representative of southwestern Anatolian ceramics, there are a number of divisions into which it falls. Roughly these can be aligned geographically — east and west. Bowls do find corresponding shapes at Troy even though shapes are also common to eastern sites like Tarsus Late Bronze Age I forms. Other Aphrodisias bowl forms find parallels at other Anatolian sites — but they are found to occur over a broad chronological span, and are therefore less useful for comparison. During the Middle and Late Bronze Ages, the same bowl shapes are common throughout Anatolia. The shapes include simple large and small carinated forms (Aphrodisias type-groups 36-40); beadedrim bowls (Aphrodisias rolled exterior-thickened typegroups 10-13); and deep bowls with vertical or horizontal handles (Aphrodisias cat. no. 2169.III, Figure 491.7). The Beycesultan chalice and fruitstands (Lloyd and Mellaart 1965: Figs. 6, 7, 8) are not found as complete forms at Aphrodisias but their components are, including the high trumpet base (Figure 489.57); carinated bowls

- 337. What is surprising is the small amount of metal found at Aphrodisias in the second millennium. Her sister sites like Kusura (Lamb 1937: Figure 21) and Beycesultan (Lloyd and Mellaart 1955: Figure 21) have produced numerous bronzes and some copper, silver, lead and gold, including weapons, tools and ornaments. Mellaart (1955:92) parallels the Beycesultan weapons (spearheads, arrowheads, swords and daggers) to the Aegean, more specifically to Crete; and simpler tools and ornamental items to Anatolian contexts.
- 338. Suggested Beycesultan Aphrodisias Late Bronze-Iron Age Ceramic parallels. Lloyd and Mellaart 1955.

Aphrodisias (Acropolis, trenches 8 and 9)
Figure 496.16
Figure 496.39
Figures 490.1, 490.43 (base)
Figure 496.33
Figure 497.31
Figure 497.26
Figure 497.32/33

Figure 7.10	Figure 489.12
Figure 8.1	Figure 497.26
Figure 8.4	Figure 497.8
Figure 8.6	Figure 493.11
Figure 8.7	Figure 497.3
Figure 9.4	Figure 497.8
Figure 9.8	Figure 496.46
Figure 9.9	Figure 497.9
Figure 9.10	Figure 497.23
Figure 10.4	Figure 496.18
Figure 10.13	Figure 496.19
Figure 10.14	Figure 489.2
Figure 11.2	Figures 488.7 or 497.15
Figure 11.3	Figure 489.25
Figure 11.4	Figure 488.7
Figure 11.9	Figure 497.19
Figure 11.10	Figure 497.21
Figure 11.12	Figure 490.22
Figure 12.5	Figure 491.1
Figure 13.8	Figure 488.48
Figure 13.10	Figure 488.42
Figure 13.12	Figure 490.28
Figure 13.13	Figure 493.10 (spout)
Figure 15.5	Figures 496.16, 496.37
Figure 15.9	Figures 496.30, 496.36
Figure 15.10	Figure 491.3
Figure 15.11	Figure 493.4
Figure 16.4	Figure 491.5
Figure 16.6	Figure 496.31
Figure 16.7	Figure 489.1
Figure 16.8	Figure 492.8
Figure 18.4	Figure 488.10
Figure 18.5	Figure 488.12
Figure 18.6	Figure 497.38
Figure 18.10	Figure 488.7
Figure 18.11	Figure 496.23
Figure 18.12	Figure 489.25
Figure 18.13	Figure 488.17
Figure 19.4	Figure 490.33
Figure 19.5	Figure 497.26
Figure 19.6	Figures 488.38, 488.39
Figure 19.9	Figure 490.14 Figure 496.24
Figure 19.11 Figure 19.14	Figure 496.6
Figure 19.16	Figure 496.6
Figure 19.17	Figure 497.14
Figure 19.18	Figure 497.30
Figure 19.20	Figure 497.19
Figure 19.23	Figure 490.12
Figure 19.25	Figure 490.29
Figure 20.3	Figure 490.50
Figure 20.4	Figure 490.50
Figure 20.7	Figure 490.46
Figure 20.16	Figure 493.13
A101 1 1 1 1 1 7 7 7 7 7 7 7 7 7 7 7 7 7	1. (1055 7

Although bearded jugs at Beycesultan (1955, Figure 13.1-4) exist at Aphrodisias, they are not commonly found; there are no remains of askoi (Figure 14) in this period at Aphrodisias; the squared-off appliqué on storage jars in Figure 16 is similar to the Aphrodisias fragment Figure 489.49, and in Figure 18 the painting associated with gold wares is found at Aphrodisias in Figure 489, although the designs are not the same.

Anatolian Studies 6 (Mellaart 1959).

Beycesultan Level III	Aphrodisias
Figure 5.3	Figure 497.29
Figure 5.5	Figure 496.33
Figure 6.1	Figure 496.20
Figure 6.3	Figure 496.20
Figure 6.14	Figure 497.4
Figure 6.15	Figure 496.32

(Figures 489.12; 497.38) with everted rims thickened to the exterior (Figures 496-497) are present. Mellaart (*ibid*. 54-56) is probably correct in tracing the ancestry of the chalice to the Early Bronze Age — trumpet bases with lustrous silver-washes appear at Aphrodisias at this time. A Beycesultan fruitstand (*ibid*. Fig. 8.9) is similar to an Iron Age Aphrodisias rim (Figure 496.1). ³³⁹ Aphrodisias Late Bronze Iron Age parallels to Beycesultan forms can only be based on fragments, the majority of which are rims.

At the end of the Anatolian Middle Bronze Age, there is a shift in power from Central Anatolia back to Cilicia (the power center of the Anatolian Early Bronze Age). With the collapse of the Hittites, many of the Middle Bronze Age sites in Central Anatolia come to an end. Late Bronze Age contacts between Cilicia and other areas including the southwest again provide the strongest series of developments that can be charted.

THE IRON AGE

The archaeological problems of the southwestern Anatolian Iron Age are not resolvable with the currently minimal data. Aphrodisias and her neighbors cannot be placed in any sort of firm chronological sequence as the area's ceramic development in this period is poorly known and little evidence is available. If the ceramic pattern constructed by what evidence there is at Aphrodisias could be related to any region, the picture would be clearer. It does appear that the Aphrodisias-Beycesultan area is now isolated from the activity taking place on the Aegean coast. At Aphrodisias, however, the end of the Iron Age is marked by ties with the Lydians indicating that contacts with the west have strengthened again by this time. Possibilities of relationships in both the late second millennium and the early first millennium are in need of far more data before they can be understood.

Sardis

Sardis is located at the foot of Mount Tmolos in the Hermos River plain, approximately 10 km from the Aegean coast. Explorations were attempted in the 19th century; in 1910 the *American Society for the Excavations of Sardis*, under the direction of Howard Crosby Butler, began excavations that continued until 1914. After an interruption, work resumed in 1922. Excavations again

339. Fruitstands or pedestalled bowls are found at Kültepe (Özgüç 1950: Plate 73.530-531) with multiple handles, and the horizontal handle has been found at Kültepe (*ibid*. 1950: Plate 74.551; 75.577). V-shaped handles have been unearthed at Alişar (von der Osten 1937: Figure 170) and at Kültepe (Özgüç 1950: Plate 77.590).

began in 1958 and have continued to the present day under the direction of G. M. A. Hanfmann and C. H. Greenewalt, Jr. The excavations have produced evidence of Early Bronze Age burials. More important for this study are the Lydian (680-546 B.C.) developments, including burial grounds, the enormous Bin Tepe Cemetery, rock-cut chamber tombs, gold refineries, and most recently the Bazaar, the Colossal Lydian Structure and other important architectural complexes. Some Lydian materials (see The Lydian Pottery Study by W. Mierse, in Part 4) are found at Aphrodisias, which is hardly surprising given the important role played by the Lydians. It will be interesting to work out just what were the relationships that existed between the two sites in the Late Iron Age. Once it is published, the Lydian model for the ceramic development can be used for the material found in the Iron Age deposits at Aphrodisias, even though the contemporary local non-Lydian Iron Age wares found at Aphrodisias also reflect an independent development.

* ;

No artifact exists singly at a site, and the numbers and complexities in defining cross-cultural patterns between two or more living communities is a vast subject. When a ceramic industry exists, there is an interaction that helps form a picture of the community culture. But first, ceramic seriations have to be worked out for each site and only then can the bonds which connect one industry to others be properly assessed. The basic associations of the Aphrodisias ceramic industry have been summarized and tentative intercultural linkages have been drawn, but only future study will confirm these relationships.

Closing Remarks

We turn now to the process of synthesis, taking our analysis one step further so that we can infer a systematic structure from the archaeological record. This structure has three dimensions: time, space-environment, and changes in the cultural record. In order to understand the space and cultural record of the prehistoric Aphrodisias, I have already initiated discussions that attempt to control the temporal and cultural dimensions.

As pointed out, in western Anatolia the basic chronological sequence is not well-defined, so that the Aphrodisias data cannot be simply placed into an existing scheme. Prehistoric Anatolian cultures are among the least known or understood of the ancients, and yet it is at least partly due to developments during this period that the culture centers of the Anatolian southwest came to be unified. The

settlement web spun by them has been known for many years, but it is only since Lloyd and Mellaart's excavation and identification of the culture at Beycesultan that we have been on firmer ground. It is a relatively recent feature that many of these culture centers have been recognized and interrelated. When this relationship is better established, they can be fitted into the larger context of the various cultures within Anatolia itself, and those surrounding her in the sixth to fourth millennia. But as Miss Mellink (1965:102, 105-108, 114) comments: « Before 3000 B.C.... Anatolian archaeological sequences can be correlated on a relative basis only. »

One of the reasons prehistoric chronology of southwestern Anatolia raises so many confusing questions is that there are no familiar events, conditions or processes that can be tied-in with the better established chronologies of the Near East such as are found in Mesopotamia and Egypt.³⁴⁰

A variety of techniques were available for determining the age of the various levels at Aphrodisias in Part 2. The « dates » from several indicators were used to check each other — agreement among radiocarbon analysis, ceramic styles, soil deposition, and the traditionally accepted Late Chalcolithic and Early Bronze dates (4500-2300/2200 B.C., or to the end of Troy II) all formed a basis around which the suggested dates for the prehistoric deposits at Aphrodisias could be plotted. In Part 2, we looked at radiocarbon correlations, and in Part 3, we concentrated on the local stratified ceramic sequences as a guide. There are no absolute dates for wares manufactured in the Anatolian Late Chalcolithic and Bronze Ages — plus the dating of strata not only of Anatolian but also of Eastern Aegean sites is still a subject of some controversy.

Although there were differences between these sites that suggested different possibilities, it is the high percentage of comparative material that has made it possible to arrive at a relative chronology for the prehistoric periods at Aphrodisias. When there is lack of written records, few radiocarbon dates available, and the stratigraphy is either totally lacking or is confused, the ceramic sequence becomes the only viable cultural and chronological index. Comparative ceramic material has been presented — thus the stage for the discussion of the chronological interconnections between Aphrodisias and other sites has already been set. Because we can now predict the outcome, it is not unnatural to review the Aphrodisias stratigraphy and then take a final look at the chronology of those sites that culturally interact with our own site.

340. The evident preciseness of both radiocarbon dates and deposition rates has fascinated archaeologists, but we cannot compare the life of a site to the carbonized remains of the life of a tree or to the accumulation of soils disputes still arise over these processes.

Late Neolithic (?): Aphrodisias and Hacılar

Two units (1599e and 1599d) have been assigned to Level VIIIC of Pekmez trench 2 ascribed by us to the Late Neolithic (?). The latest deposit for the use of this period is unit 1599d and its earliest use is 1599e — its terminus post quem and terminus ante quem must be related to the two units. No radiocarbon samples had been collected for these important early units.

The presence of Hacılar-type pottery is extremely significant here as it provides a direct correspondence with the Hacılar horizon. There are no other features save the ceramics (Aphrodisias-Hacılar) for this link, and this is unique — that no other cultural affinities exist. But the fact that the ceramic links do exist cannot be denied.

The earliest date that can be fixed with any degree of certainty is dependent upon the Level VII Hacılar wares which have been radiocarbon dated to 5820 ± 180 (Mellaart 1975:286, BM-125). Considerable comparative material (discussed supra) from Hacılar tentatively dates this unit's terminus post quem to Hacılar VII or approximately 5800 B.C. Given dates for the Hacılar ceramics are difficult to determine because of the continuation of some forms, ware-fabrics and decoration through many centuries. Since many types of pottery may have been made or traded in considerably later time, it is not unreasonable to assign it an early date of ca. 5800 B.C., the radiocarbon date which J. Mellaart ascribes to Hacılar VII (Mellaart 1975:287).

Pottery which predominates in Level VIIIC Late Neolithic (?) at Aphrodisias is unlikely to be Late Chalcolithic because of the previously mentioned fabric and decoration factors. And also on the basis of the stratigraphic record, it should be dated to a period earlier than the Late Chalcolithic. There is no gap recorded for this time in the excavated material at Aphrodisias, but there is a telescoping of deposits.³⁴¹

341. It is agreed at this point that the situation at Aphrodisias presents us with an uncertain situation. It is often true that decisions like this must be made in unique archaeological situations. First, it was dependent on a preference order of decisions involving this deposit: the possible choices for this are basically two: that this is either a transition Late Neolithic (?) - pre-Late Chalcolithic stratum with no break, or that this is a stratum independent of the Late Chalcolithic 1. We have opted for the latter based on the pottery analysis. The connection between stratigraphy and ceramics is extremely important for the theory of the entire site, but in this case the ceramic preferences have strongly outweighed the stratigraphic considerations, because the stratigraphy is too confused. However, if a re-excavation could better define the stratigraphic picture the importance of the ceramics would decrease. In the mean time, we have acted on the basis of a priori ceramic material — selecting that alternative which, we believe to maximize the evidence. Second, the discussion of the relation between pottery and stratigraphy is indicative of some of the difficulties surrounding interpretation, which must often be based on subjective judgment. If more stratigraphic information had been available it would have caused us to consider the questions differently, and Late Chalcolithic ceramics

We propose that there was a contact between Hacilar and Aphrodisias in the Late Neolithic. The tentative picture which emerges is traces of a limited settlement (?) or perhaps a sporadic visit (?) to Aphrodisias by people of the Hacilar VII tradition itself or from an intermediate site that shared in her potting customs. They may have brought their pottery with them or produced pottery of the same tradition. Only future excavation can confirm this question.

The Aphrodisias Gap. The ceramic material found at an approximate depth of 10 m in Level VIIIC makes it clear that Aphrodisias was occupied at least by the later half of the sixth millennium B.C. It would then appear that it was abandoned during the period of approximately 5500 to ca. 4360 B.C., or during the Early and Middle Chalcolithic periods. Can it then be credited that there is little or no stratigraphic time lapse? Another question is whether Aphrodisias existed at all during the period of this gap. It seems certain that in the excavated trench 2 of Pekmez there was no human habitation during this period. But could there have been a settlement elsewhere on the site? It seems unlikely, for there are no traces of artifacts belonging to the interim periods so far excavated.

Even if we acknowledge no gap between Hacılar Level I and Beycesultan Level XL, there is a dramatic change over in traditions — as C. Eslick (1978:157) wonders, « ... whether caused by change in population or economic circumstances. » We concur with the idea that there is a substantial time lapse, and that newcomers to the area brought with them new potting traditions.

In the Konya Plain we cannot presume to look for the Aphrodisias gap to be filled, for Aphrodisias does not appear to share in its Chalcolithic culture. In the Elmalı area, however, Eslick (1978) proposes there is excavated material from sites that does bridge this hiatus—important data for it provides an alternative to the great amount of questioning that has centered around this issue. There are many potential theories of what was going on at this time but more definite results are still largely a matter for future analysis. The excavations at

might have had a diminishing marginal utility. Further, if I could have maximized the stratigraphy rather than the ceramics (as it was possible to do in the Bronze Age), we might have found that the interpretation in this risky situation would have differed considerably. Also there was no evidence of a massive destruction layer between Levels VIIIC and VIIIB of Pekmez, trench 2, but in so confined an excavation area this is not decisive.

In addition to the unsatisfactory state of archaeological links between the Late Neolithic (?) and Late Chalcolithic 1 at Aphrodisias, we have no promise of a route for the analysis of what happened in the interim: at Hacılar itself, the culture of Levels IX-VII continue to Levels VI; after the burned ruin of the last of the Late Neolithic levels, the settlement of the Early Chalcolithic, Level V, begins.

Aphrodisias point to no occupation of the site during the Early and Middle Chalcolithic; therefore, we have to assume that the site lay fallow for a number of years.

It is probable that the contemporary cultural changes were linked to environmental differences that we do not fully understand. Because the societies interacted so directly with their environments, we need to reconstruct palynological and geological studies to explain what happened to create such a major cultural change, indicated by the lack of any archaeological evidence. Perhaps there was a shift in the subsistence base, which may have been related to ecological fluctuations or even to a plague. If we knew more, we could focus our attention on this critical temporal period of more than 1000 years 342 ... and the cultural implications for this hiatus. 343

- 342. The relationships between human behavior and the environment are complex. While environmental changes of certain magnitude require adaptive adjustments in subsistence behavior patterns, the nature of the response is determined in large measure by sociocultural rather than by environmental variables. Understanding of such interactions between cultural and natural factors demands detailed knowledge of Aphrodisias' economy, population dynamics, relationships with other human groups, and, of course the exploitative potential of the environment. We must keep in mind that human behavior can cause as well as respond to environmental changes thus caution should be exercised to ensure that such changes are not ascribed to natural causes. Of course, culture change can be caused by many factors, and correlations between behavioral and environmental variations do not necessarily imply causality.
- 343. The future excavations in the Anatolian southwest and especially the sites of Hacılar and Aphrodisias should provide us with a good testing ground for cooperative research among archaeologists and environmentalists, if we are going to find the answers to these questions. Further studies have to be undertaken before we can synthesize old and new archaeological data to environmental data so that the degree of their relationships can be postulated. Several hypotheses have been advanced to explain rapid shifts in population sizes, their distributions, and their cultural changes. These hypotheses invoke triggering mechanisms such as environmental change (Reed 1954:592), inter and intrasocietal conflict (Jett 1964:281), and epidemic (Kunitz and Euler 1962). There are many intervening variables critical to understanding cultural processes that remain to be investigated. For example, studies in Colorado (Euler et al. 1979:1089) have found that population trends run parallel and reciprocal to long-term hydraulic fluctuations. Indian populations tended to increase during wetter periods, and during intervening dry intervals populations tended to decrease — either because of the abandonment of the areas or because of reduced growth rates, which were presumably dependent on local environmental conditions. Population increases associated with wetter periods generally occurred in areas now characterized by scant surface water supplies, drier weather, and longer growing seasons (more than 120 frost-free days but less than 0.40 mean annual precipitation). These relationships to current weather zonation and surface hydrology indicate that past environmental changes may have triggered population displacements toward wetter and cooler localities during major droughts. They also suggest that counter-movements toward drier and warmer localities occurred during wetter intervals, when farming became possible in areas that otherwise were too dry to support large numbers of people. Expanding populations should probably be looked for in areas that had permanent water supplies during major drought intervals when water elsewhere was diminished: the settlement gap may be found there.

The Late Chalcolithic

We have found that around 4360 B.C. a Late Chalcolithic folk moved from a yet unknown area(s) and settled in the Maeander Valley at Aphrodisias. This movement too can be attributed to environmental changes, such as changes in water tables: local flooding of water sources may have limited farming to more remote upriver areas and to tributary valleys like the Dandalas — this would favor direct river-valley population displacements. It would appear that once established at Aphrodisias, the economics of the Late Chalcolithic farmers adapted to local conditions, for they remained attached to the site for a long period of time.³⁴⁴

The path of the new pottery horizon markers cut by the Late Chalcolithic folk cannot be doubted, but the origins of these people, and the exact events are not clear. Numerous settlements were founded in the Anatolian southwest: at Beycesultan and at re-established sites like Aphrodisias. (This same culture or its derivative may have spread to the Aegean and later to the Troad, a possibility confirmed by the archaeological record — and it is not impossible that these people were the founders of Troy herself.)

There does not appear to be a massive destruction level at any of the sites; as I suggested earlier, these folk were probably peaceful agriculturalists forced to flee from their former land holdings for some unattractive reason, perhaps economic. The fact is that they founded, settled or resettled abandoned sites like Aphrodisias and thereafter built up normal trading connections.

The excavation at Aphrodisias points to the site having been (re)founded at ca. 4360 B.C. And the radiocarbon analysis of the charcoal sample from Level VIIIB of Late Chalcolithic 1 confirms this. To judge by the results of the excavation, succeeding levels and centuries saw only continuous growth — growth that appears to have been uninterrupted. The Late Chalcolithic 1 through Bronze Age 1 are periods in which there is evidence of interconnections with Beycesultan and with the Eastern Aegean, plus evidence for the expansion of trade and a ceramic idea-sphere throughout Anatolia.

The Late Chalcolithic 3-4 and Bronze Age 1 periods raise some questions. Although there are no representative buildings left, one is struck by the apparent changes in the Late Chalcolithic 3 pottery. Inverted black-slipped wares existed before this period, but at Aphrodisias (even more

344. The archaeology of Anatolia has been well studied in the past 40 years, but neither events nor processes responsible for them during the period of the resettlement of the southwest have been well-documented or understood. In order for any hypothesis to carry weight our archaeological, geographical, pollen, faunal, plus radiocarbon analyses have to be integrated into a comprehensive regional reconstruction of environmental trends.

than at Beycesultan), there seems to be a clear-cut-shift. The white-painted wares, the flared forms, and the black-slipped wares characteristic of Late Chalcolithic 1 and 2 are replaced by the inverted or incurving forms.

Earlier in this section we stressed ceramics rather than people — for it is these ceramic factors, compared in this mechanistic and pragmatic fashion that have helped us conclude that the activities of the people — the potters — were governed by general, abstract, and clearly defined rules... and that these rules were shared at both Aphrodisias and Beycesultan.

The Late Chalcolithic and radiocarbon results. The Late Chalcolithic 1 period at Aphrodisias appears to be the longest of the four Late Chalcolithic phases, and lasts for approximately 965 years; the Late Chalcolithic 2 is approximately 260 years; the Late Chalcolithic 3 lasts ca. 226 years; and the Late Chalcolithic 4 is only ca. 146 years in length. Of course, all of these conclusions are to be considered tentative: they are represented in chart form in Table 138, infra; and the Aphrodisias radiocarbon results are shown in Part 2 on Table 4, p. 163.

In order to realistically confront the dating problems involved and to understand the confluence of diverse strands of radiocarbon results (which by the 1960's gave impetus to the whole study of dates), a general discussion is in order. In 1965, Mellaart (1960:278) chose to use radiocarbon dates as a standard reference for Anatolian chronology, which he published in Antiquity and in the CAH (Mellaart I(2):403ff.). Mellaart's chronology was also accepted by D. French (1961:118-121; 1967:66-67; 1969:56-58, Fig. 3). The absolute dates Mellaart proposed were a complete unbroken sequence for the Chalcolithic, based on both the Hacılar and Beycesultan radiocarbon results. He is suggesting that the Hacılar dates were acceptable, but that those from Beycesultan were too low — and further that this sequence was a coherent, continuous one with Hacılar ending in the later sixth millennium, and Beycesultan beginning in the last part of that date range ca. 5000 B.C. From the evidence we have gained at Aphrodisias, it would appear that the Beycesultan dates are instead too high and that there is actually a ca. 1000 year gap between the two. Other than the radiocarbon dates from Aphrodisias (P-2029; P-2030) for the Late Chalcolithic material, we are unfortunately dependent on the Beycesultan uncalibrated radiocarbon sequence (Lloyd and Mellaart 1962:281).345 R. Clark in Antiquity (1975:251-266) approximates these two Beycesultan dates to a calibrated MASCA date of 3800 and 3520 B.C.

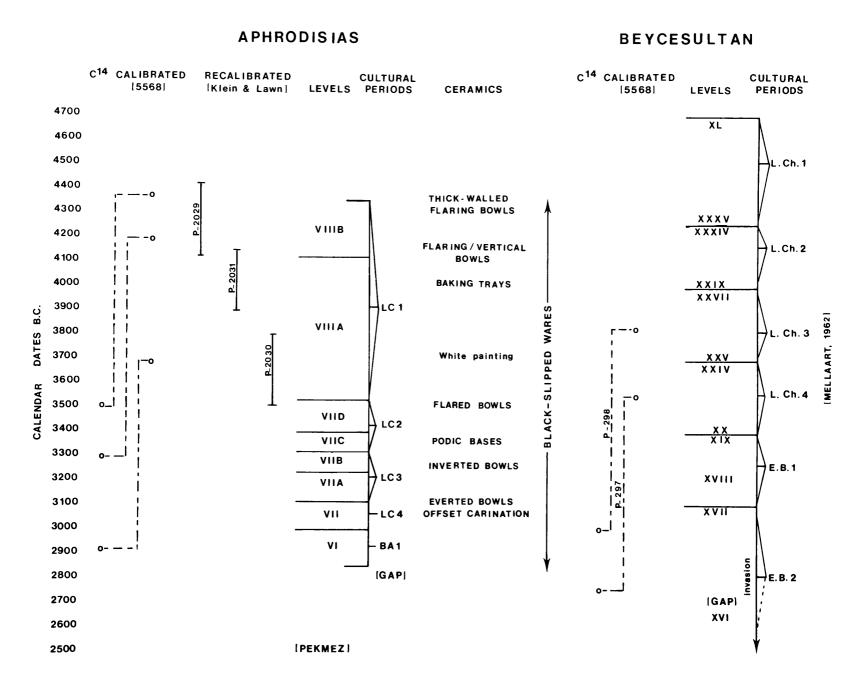
345. Beycesultan radiocarbon sequence (Lloyd and Mellaart 1962:281).

Level	Sample	Material	Date
XXXVI	P-298	Charcoal	3014 ± 50
XXVIII	P-197	Charcoal	2740 ± 54

Aphrodisias and Beycesultan. Table 138 below, is a chart of tentative chronological and ceramic correspondences between Aphrodisias and Beycesultan. In this chart, the circles represent the midpoint of radiocarbon ranges for the four samples (two from Beycesultan and two from Aphrodisias); to the right, they have both been calibrated, based on the Libby 5568 half-life. The horizontal bars indicate where we predict the correlations of Aphrodisias and Beycesultan ceramic styles to fall. The ceramic correlations of Beycesultan have been aligned to

their corresponding peaks at Aphrodisias; Beycesultan divisions are also placed at those points. Based on the previous discussion of geographic proximity and position, the material evidence, plus the alliances between the interrelated dates of the Late Chalcolithic, we conclude that the sites of Aphrodisias and Beycesultan are equivocal in their development. It is a fair assumption they were in direct contact — for their achievements appear to have been spawned from the same cultural matrix and have developed similarly.

TABLE 138. CHART OF CHRONOLOGICAL AND CERAMIC CORRESPONDENCES BETWEEN APHRODISIAS AND BEYCESULTAN



Aphrodisias and Kum Tepe. The key fact proposed earlier is that there were indeed cultural interconnections between Kum Tepe and Aphrodisias. The following discussion is based on an examination — a reassessment of the Aphrodisias-Kum Tepe link. It is an attempt to gain a clearer picture of the intercultural relationship.³⁴⁶

Few questions may be raised by our correspondences between Aphrodisias and Beycesultan, but some may take issue with the Aphrodisias-Kum Tepe parallels presented earlier — due to the distance involved between the two sites. C. Eslick (1978:162) criticizes J. Sperling for his equations between Kum Tepe and Beycesultan for this very reason.³⁴⁷ Yet the majority of the pottery styles in the two areas are unmistakedly similar and based in the same tradition. Why is it that we can find correspondences for the designs and shapes from the southwest to the Troad in Early Bronze I and thereafter, but not before?

Certainly the exchange of ideas did not just begin in the Early Bronze Age but was fostered earlier, to move among areas in the southwest, the Aegean, and the Troad. As I have repeatedly stated, there is still so much that is unexplored that could provide the answer — but basing our argument on the ceramic and obsidian data, we can safely theorize that communications between the two areas of Aphrodisias and Kum Tepe, possibly through intermediate seetlements, did exist before the Early Bronze Age. 348 It is probably true that there are chronological distinctions, and also differences in geographical distributions of specific known shapes or decorative motifs — but the similarities are more important than the differences. The pottery tradition of the general area might be postulated to have a homogeneous base and

- 346. Not only may correlations between sites be imprecise, but local sequences may even lack in precision. Furthermore, even if pottery sequences between two sites are relatively parallel, the most popular shapes or decorative motifs may not be contemporary. Different sites were affected to quite different degrees at different stages in their development. We have not, however, based our correspondences on one case, but on the similarities. Critics may take issue with some of our correspondences, but even if there are some inaccuracies, the evidence provided by the overwhelming number speak for the record.
- 347. In Part 4, we experimented with the Kum Tepe assemblage in an attempt to force it into the Aphrodisias matrix. Such experimentation is not without risks, but it does confirm certain ideas that other researches have proposed on what we believe to be far less circumstantial evidence. It is true that distance is an important factor for the spread of ideas there is important evidence for local variation of pottery types at both sites, i.e., the Kum Tepe rolledrimmed bowl is not strongly represented in our collection, and its development at Aphrodisias is quite different from its evolution at Kum Tepe itself.
- 348. For example, the distinctive concave bowl with the plain flared rim shape so prevalent at Aphrodisias CX36 (Figure 384.11) and CX37 (Figure 384.12), is also characteristic of Beycesultan Levels L.Ch. 1 L.Ch. 2 (Lloyd and Mellaart 1962: Figure P.2.1, 18); of Kum Tepe phase IA (Figure 8.109; 2.209); and is found at Emborio in Levels X-IX (W. Lamb 1932: Figure 14.D). How can the distribution of this form be explained?

the same overall development — even though some bowl types have a more northern distribution and others a more southern one.

In the earlier part of the Late Chalcolithic, or Late Chalcolithic 1 at Beycesultan and Aphrodisias, it is clear that the two southwestern sites are closely allied in their development and share in an analogous pottery tradition. This development has not been found in the Troad, except to a certain extent at the site of Beşikatepe, and nothing is known of the northwest in this period, if indeed it was developed.

To sum up: 1) Kum Tepe was founded in a time period that roughly corresponds to the beginning of the Late Chalcolithic 2 Level VIID of Pekmez trench 2. Sperling (1976:358-359) is not altogether incorrect in looking for correspondences between the Kum Tepe deposit of phase IA1 and earlier contexts, for the originally aligned phase IA1 to Beycesultan L.Ch. 2.; 2) Phases IB1 and IB2 are a continuation of this earlier development and can be corresponded to later L.Ch. 3 forms at Beycesultan or to Level VIIA of Late Chalcolithic 3 at Aphrodisias; 3) Phase IB3 is a transitional stage between the final Late Chalcolithic 4 and the early part of Bronze Age 1; it can be aligned with Aphrodisias Levels VII-VI - Sperling (1976:358-359) would definitely take issue with this as he equates Phase IB3 to Beycesultan L.Ch. 3, but his conclusions are based on just one Beycesultan bowl (Lloyd and Mellaart 1962:546, Fig. P.9.7) and this is not a convincing enough connection; 4) Phase IB4 can be attributed to Early Bronze Age contexts as it corresponds to Aphrodisias' Pekmez Level VI, Bronze Age 1; Beycesultan EB I and Troy I which are both ascribed to Anatolian EB II. Thus the possible progression of Kum Tepe phases confirmed by our evidence are on Table 139.

Aphrodisias and Troy. Renfrew (1972:209-10) suggests that early Troy I is contemporary with Early Minoan I, and also the cultures of Eutresis and Grotta-Pelos which end during middle Troy I. He (op. cit. 221) places this inception of Troy I to approximately 3100 B.C. in calendar years (ca. 2400 B.C. based on radiocarbon results) and its end ca. 2600 B.C. in calendar years (or about 2100 B.C. in radiocarbon years). These radiocarbon dates are based on a half-life of 5568, and his calendar dates are based partly on H. Suess' work (1967).

In grappling with ceramic correspondences between the southwest and the northwest of Anatolia, these dates appear to us to be to high. We propose that the Late Chalcolithic period at Aphrodisias ended sometime in the last centuries of the third millennium B.C.; this would make its end approximately contemporary with Beycesultan XX. Then Anatolian EB I would correlate to Level VI at Aphrodisias and Beycesultan XIX. And EB II would include Beycesultan Level XVII, and Troy I which we

reckon to fall between 2800 and 2600 B.C. However, this date does tend to provide us with a guide since it is based on the most readily observable style characteristics that exist at both Aphrodisias and Troy. Admittedly, we have not been able to make fine temporal distinctions — area syntheses are not at all clear and intersite comparisons are difficult to assess without the knowledge of trade networks. Mellaart (1971:119-137) has proposed that Beycesultan Level XIX is to be dated to the end of the Gumelnitza and Vinça periods in Macedonia. Radiocarbon results for the end of the Vinça period fell at about 3500 B.C., the date for the first part of the Early Bronze Age there. (This alliance placed the Late Chalcolithic within a time period of the fifth to first-half-fourth millennium.) Later in Studia Balcanica (1971b:137), Mellaart revised his ideas and recorrelated Beycesultan Level XVII to Troy I, which pushed the end of the Late Chalcolithic back into a slightly earlier time slot. He discarded his earlier ideas regarding the Gumelnitza and Troy I-II synchronisms;³⁴⁹ then, after his study of the Poliochni and Eutresis radiocarbon dates, he redated Troy I to fall between 3100-2700 B.C. There are those who will argue that the Late Chalcolithic ended before the close of the fourth millennium B.C. — we think it ended at some point in the beginning of the third millennium. As the numbers of radiocarbon dates for this period are limited, it is not possible to be more precise about these cultural periods. The materials make it clear that the Aphrodisias people must have shared in many of the same cultural traditions as did Troy. But it is clearly manifested by the evidence that more than one tradition is at work at Troy... the people of Aphrodisias too were certainly influenced by different models.³⁵⁰

349. The bowls from Gumelnitza that he had compared with Troy I and II forms he felt could no longer be equated. Therefore, the radiocarbon dates for the end of the Vinça period have no relevance.

350. Some artifact types do survive for long periods. From this point then, we should move backward to examine the variety of causal chains that might bring about the result. Artifacts flourish when they by chance or design are located at the right place at the right time, or when they fortuitously adjust to a situation which exists. Success is based upon the continued existence, not solely upon the motivation of the maker. We cannot explain how the interconnections between those two sites were established or attempt to reason the original conditions under which similar artifacts appear at both without intermediate chronological and geographically positioned sites that would secure the sequential development. Despite the distance involved, there is the distinct possibility of direct inter-site contact between contemporary Chalcolithic Balkan cultures, and those of both northwestern and southwest Anatolia. Although it is clear that some of the Balkan settlements ended before the Early Bronze Age of Anatolia began, the absorption of ideas is part of the archaeological record. What type of bond existed between these areas, what their interdependence was, is not clear, but there is a presence of artistic similarities and perhaps even imitation in the arts of the sculptors, potters, metallurgists, and possibly in the architecture by the time the Late Chalcolithic 3-4 in the southwest was well under way.

The synchronics of Aphrodisias and Troy must now be reckoned with. Correspondences can be found between the two sites at all levels at Troy, indicating firm intercultural connection. Before proceeding, chronological considerations pertaining to Aphrodisias should be capsulated. It seems certain there exists a hiatus lasting perhaps a century, somewhere between the Bronze Age 1 and Bronze Age 2 deposits at Aphrodisias. The evolution of the culture's development is discontinued, the potting tradition interrupted and the stratigraphy confused. The ceramics, when they commence again, are different — particularly in ware-fabric and decoration. The causes for this poorly preserved deposit are not clear but tentative evidence suggests destruction, destruction that seems to appear all-over western Anatolia. Sometime ca. Bronze Age 2 (Anatolian EB II-III), there is a dramatic shift in the site's settlement pattern. This is represented by a population move or expansion to the Acropolis mound at ca. 2600 B.C. We are not sure if there was an indigenous group still at the site, or if it was resettled by a new folk whose origins are not certain. They may have come from the Troad, for most of the ceramic influence points in that direction. From this point onwards the Acropolis assumes the dominant role in the excavation record — once activity is established there, the settlement pattern with some interruptions continues throughout the Bronze and Iron Ages.³⁵¹

Evolution of the site continued through the Early Bronze into the Middle Bronze without a cultural break. There is then another distinct change — between the Middle and Late Bronze periods — both in architecture and ceramics. The Acropolis mound now appears to be used for commercial purposes, with structures differently oriented; and there is the introduction of micaceous slipwashed wares that vie with the red-slip wares so prevalent in the Middle Bronze Age. There are also marked changes between the Late Bronze and Iron Ages with again different orientation of architectural plans and of course, ceramic changes. This may indicate that there was either a hiatus or again a complete change in the use pattern of the Acropolis in response to other needs that are as yet unknown.

* *

This archaeological study is a practice in search of a theory... to examine the progress of this search and to set forth the variety and scope of the explanations which could be applied to the prehistoric deposits. Ultimately, our theories must answer to the data.

351. It is assumed that the Pekmez mound continued in use, but architectural deposits are scanty and may have been erased by later builders. What is clear is that the Pekmez area was in use as a burial ground during the later part of the Anatolian Early Bronze Age.

TABLE 139. TENTATIVE LATE CHALCOLITHIC - IRON AGE CHRONOLOGICAL CORRESPONDENCES: APHRODISIAS, BEYCESULTAN, TROY, KUSURA, KUM TEPE, KARATAŞ-SEMAYÜK, YORTAN, AND RELATED SITES SITES

			A I 4800	PHRODISI	AS BEY	CESULTAN	TROY	KUSURA	KUM TEPE	KARATAŞ-SEMAYÜK & RELATED SITES	OTHER SITES
			4700	(GAP)						W HEERTED SITES	SITES
			4600								
	MC		4500							KARARURUN 8 ROZTERE	
			4400							KARABURUN & BOZTEPE	?FIRKIRTEPE
	LC								1		
			4300								
			4200								
			4100			?				-	
			4000		XL	1				BAĞBAŞI	
			3900	LC 1		L.Ch.1					
			3800								
			3700								
			3600		_ <u>xxx</u> v_						
			3500		XXXIV						
S		ദ്	3400	LC2		L.Ch.2					
PERIODS		DATES B.C.	3300		- XXIX - XXVIII -						
PER		DATE	3200	LC3	- X XVIII	L.Ch.3			IA1		
			3100		_XXV				181		
CULTURAL	EBI	AB	3000	LC4	^^V			A	IA2		
ר T		CALENDAR	2900	BA1		L.Ch.4			IB1-IB3 IB4		
S	EBII	5	2800	(045)	XX XIX	E.B. 1	1	В	IC1	l Tombs	YORTAN
			2700	(GAP)	XVII			?	IC2	H 10 20 37 37 37 37 37 37 37 3	? MEDET SOLMAZ
	EBIII A		2600	BA 2	AVI				[GAP]	, e	
			2500	ваз		E.B. 2	П	Chance finds		Cistern Megara 1-4 Ö 1,41,95	
			2400								
	EBIIIB		2300	BA4	XIII XIII			?	11		
			22 00		All	E.B.3a	111				
			2100	BA4- MB	<mark>AII </mark> -	_,_,_,	IV	?			
			2000	MB	NI All	E.B.3b	v			`	
	мв		19 00		V		[GAP]	С		BAĞBAŞI	
			1800	МВ		M.B.	VI (early)	?			
			17 00		IV						
	LB		1600	?			VI (late)				
			1500	GAP	? 						
			1400								
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	IA		12 00		II		? VIIa			ļ	
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CONCLUSIONS

« The archaeologist makes a valuable distinction between culture, a general attribute of man, and cultures, each a specific adaptation of a human group to the particular problems of its environment. »

Colin Renfrew (1972:4)



365. Detail of map of Asia Minor engraved by W.H. Toms, published in Chr. Cellarius, Geographia antiqua..., London, 1747, pl. XXI.

CONCLUSIONS

This volume has been atomized into its components - stratigraphy, chronology, artifact analysis, site interconnections — in order that the reader be exposed to a full variety of factors, including the broad outline of the series of steps taken in our investigations of prehistoric Aphrodisias. From this, several specific research goals were identified to guide us. The single most important focus has been to refine the knowledge of the archaeological sequence at the site itself, and to construct its ceramic chronology, so that we could better trace the developments in southwestern Anatolia from the sixth millennium to the seventh-sixth centuries B.C. At the beginning of our work in 1975, I formulated models to test specific hypotheses about the site's role and location. Three models were developed with the following possible roles for Aphrodisias:

- 1. As a cultural settlement comparable to Beycesultan, ca. 100 km north by northeast, which, we hypothesized, had a similar cultural development;
- 2. As a provincial settlement geared to agriculture and animal husbandry, a role which allowed it to enjoy a long duration and a relatively stable economic and social environment;
- 3. As a settlement that reflected exchange systems of goods and ideas within the southwestern region and to areas further afield.

These models were generalized and were not mutually exclusive — the objective was to determine the roles the site fulfilled. In order to test the first, the cultural development, a relatively secure chronological framework was established and the questions then posed — were Aphrodisias and Beycesultan both founded at the same time, and did they have synchronic developments? Data was sought to demonstrate either links or barriers between the two, such as similarities or differences in the artifactual and architectural styles. Duration, particularly of specific periods, was tested by chronological assessments including geochronological tests (radiocarbon analysis), soil accumulation, and the similarities between artifact styles and their durations at similar sites.

The second model was tested by environmental and ecofact evidence. The region is contained within the fertile plain and sustaining valley system of a major river — the Maeander and its Dandalas tributary (Appendixes 1 and 2). Studies of the density and nature of settlement remains in the immediate area of the site defined its spatial

limits, and indicated there was sufficient room and favorable climatic conditions for the planting of crops, their storage, and the raising of flocks. The stable economic and social environmental theory was gauged by the degree of change found in artifact studies — abrupt changes in artifact behavior reflect changes in social and economic shifts. When the process of change was imperceptible, the environment was considered to have been a relatively stable one.

In the complex land and seascape that is Anatolia, large valleys and small plains are protected by mountain ranges and the sea. This gave relative seclusion to small nuclear village settlements and produced long periods of stable cultural development. At the same time this isolation never proved so inhibiting as to prevent a sporadic exchange of ideas and materials. Thus the third model, exchange systems, was tested on evidence of extant trade items such as obsidian (Part 4), shell (Part 3), and other imports like greenstone and carnelian.

Much of our reasoning has been inductive, from the part to the whole. We have gathered, classified, and compared data - and from that we have drawn inferences and established general hypotheses about the site and prehistoric Anatolian settlements in general. Admittedly many of our conclusions are self-evident and need no elaborate analysis. Often the data virtually forced its interpretation on us. The problems of approach, simplifying, and then categorizing theories still remains an issue. In approach, there has been in recent years an increasing emphasis upon the interrelated nature of the forces within and external to a site, i.e., the environment. Theories in which a site is viewed as separate and isolated from its environment have become less viable, sites are viewed more and more as part of an interacting force. We have viewed Aphrodisias as a self-contained unit... and yet as a settlement that was open to the world around. The immediate environment was used by the people for their tool sources. The regional environment and its cross-cultural interaction was manifested by trade and diffusionist ideas (the borrowing of artifact shapes). Thus the site had an « inside » role and an « outside » role.

In our search for an approach to prehistoric Aphrodisias, we examined functional explanations to try and learn its culture. We tended to side our analysis away from « unilinear » explanations and toward interdisciplinary cross-cultural approaches — in an attempt to bring the site, its society and the environment into focus. Included as

a major part of this was trait comparison — within the Aphrodisias culture itself, and with other sites.

Generally, archaeologists have to deal with traits of a people by studying the attributes of their artifacts. They look at a culture in a descriptive way as the sum of those traits. This approach results in the observance of traits in a moment in time ... seen, of course, from the archaeologist's own perspective. Archaeologists become collectors of cultural attributes and artifacts, but because of the nature of the data, most of these are isolated, and it becomes difficult to see them as part of the whole. If, for example, we could know more about the religious and socio-political ethos of these people during any one period, our views would be greatly amplified. It is an obvious difficulty of our discipline that the evidence is so incomplete and the people so anonymous that we are unable to impart a sense of cultural vitality or unity. Now as we generalize about the Aphrodisias culture we turn to theories or questions that arose during the course of this study. For this, a myriad of constructs were devised, many directly or indirectly, that helped us gain more insight into the actual role of the site.

Although the term « role of Aphrodisias » has been used frequently in earlier parts, it has never been precisely defined. Implicit in this is the central theme of choice. In earlier Parts we examined stratigraphy and artifacts, and focused upon them as end products in the choice process. There are many variables that entered into the choices that we presume these prehistoric folk made — environment, accessible raw materials, inter-cultural contacts, temperament, and other factors would affect the selection of one alternative over other possible ones. The study of Aphrodisias and its role should consist of a thorough blending of significant concepts and principles extrapolated from the archaeological record.

Should we consider each site to be unique, marked more by differences which exist between it and other sites than by similarities? As said earlier, some archaeologists focus on common traits. Others focus on the differences. Unique traits are local variants possessed by only one site, but common traits are consistent patterns of action and reaction that can be classified along any number of dimensions. For example, settlement patterns are known as common traits — almost all Late Chalcolithic settlements are situated in plains — positioned on high ground just above the plain so that access to the surrounding fields upon which their economy depended was relatively easy. Understanding settlement patterns is significant because it serves to predict part of the character of settlements. If the shared ideas are known, we can anticipate the pattern.

We have pointed out that one of our research models was to explore exchange systems at Aphrodisias,

a characteristic considered common to Late Chalcolithic and Bronze Age sites and manifested in the trading of goods and ideas. It is even possible that people of the Late Chalcolithic brought their exchange items with them when they settled the site. Although we have no evidence of pack animals (Foster 1965:56), or of sailing vessels until the Early Bronze II period, intercultural connections are proven as early as Late Chalcolithic by comparing the Aphrodisias' artifact corpus to Beycesultan in the southwest, and to Kum Tepe and Troy in the northwest. (There seems to have been a geographical unity in prehistoric times embracing the southwest and northwest.) This comparative method assured us that diffusion of ideas and cultural connections — like exchange systems — did exist and that the resemblances are therefore not accidental. If these resemblances and connections can be documented, it is necessary to keep in mind that the ceramics or tools do not have to be exactly contemporaneous.

Ancient Aphrodisias reflects a modest involvement with exchange systems, for imports — obsidian, carnelian, greenstone, shell, and certain ceramics - clearly manifest themselves in the artifact record. Exchange of artifacts may involve small trade of raw materials, manufactured goods, partially manufactured goods, or some combination thereof. Only 7 % of the chipped stone assemblage of Late Chalcolithic Aphrodisias is obsidian, yet this is a significant amount considering that the site is located well outside the so-called nuclear supply zone. The Southwestern Anatolian cultures probably did not come into much contact with one another, particularly in the early periods, but when they did, some elements of one culture became selected and diffused into the other. The recovery at Aphrodisias of these few non-local raw materials plus some crafted items poses a number of questions. More important than the items themselves, we wanted to know what sources were being utilized — our investigation accumulated data to offer support of widespread exchange. The source area(s) for the obsidian(s) point primarily to the Aegean and secondarily to Central Anatolia. The marine shell species are common to the Mediterranean and Red Sea. The beads have a suggested origin in Afghanistan, and Ghirshman (1954:26) mentions that carnelian may have been mined in Iran. So-called « greenstone » finds two known sources: one just west of Hacılar and the other southwest of Çatal Hüyük on a low ridge between Çumra and Karaman. Copper sources have been found in southeastern Turkey near Maden (Wertime 1968:931), but there may be yet undocumented deposits that are more local.

The indications are clear that prehistoric Aphrodisias was participating in long distance, but probably indirect, exchange of traded goods — from Afghanistan, Iran, Eastern and Central Anatolia, the Red Sea, the Mediterranean, and the Aegean.

As society became more specialized, we can presume that local trade involved contact with flint and chert miners, « fat lady » figurine distributors, and perhaps makers of craft items such as specific vessels or one-of-a-kind metal objects. Contact with other southwestern sites and with those lying further afield in the northwest are, as mentioned, indicated by the similarities of the pottery styles (presented in Part 4). We do not know if exchange of goods was carried on with nomads that moved seasonally through the area — or even if the Maeander Valley was still used by hunting bands that entered into exchange relations with the villagers.

What do we know about the culture of Aphrodisias? Whatever its cultural matrix was throughout time, it occurred in a societal framework; it affected and was affected by the environment within which it operated. Unfortunately, most of its day-to-day activities in that environment are lost to us... but having some knowledge of the culture within which the site operated can now help us in predicting patterns. The patterns are the key to its study. Culture at Aphrodisias from any point in time and space may be seen as the product of accumulated traditions and customs, of elements that have been accepted and perhaps altered. It has within it the potential for continuing change. There are differences between cultural traits themselves — surface traits such as settlement patterns or decorative patterns, and in-depth traits such as ideals, intellectual awareness, and capacity. The later defy the archaeologist for they are the most difficult to capture. However, the Aphrodisias culture that is reflected in basic artifact configurations is, in turn, highly patterned and structured, and consequently better defined and more homogeneous that any other aspect of the site.

We have postulated that there exist six main prehistoric pottery traditions at Aphrodisias; the Late Neolithic (?); Late Chalcolithic-Bronze Age 1; the Bronze Age 2-Middle Bronze; the style of the Late Bronze; the Iron Age and, finally, the Lydian style. The repertoire from each period shows specific changes and qualities from the preceding period — for example, during the Late Chalcolithic, bowls with flared rims faded out and inverted forms gained in popularity. It might be argued that new methods of cooking or of food preparation brought about needs for different functional shapes and styles — such as specific types of strap handles over lug handles? Can we develop a formula to show that dimensions of the bowls and the quality of construction varied according to the type of food stuff they served, or the size of the meal? A change in diet? Without full-scale population movements, the diffusion and spread of ideas must be in response to need. The nature of the specific need stimulus cannot be suggested without a greater knowledge than we have of the foods and liquids that the ceramics were designed to hold.

Conventionally it is accepted that the advent of the wheel had a tremendous impact on pottery production, yet the evidence from Aphrodisias shows that at least there it really did not have such an impact — it took centuries for it to be accepted! Can we reason that the population of Southwestern Anatolian settlements continued a specific pottery tradition because it was the level they felt comfortable with in dealing with their environment? However technological change occurs or regardless of how it is diffused, it is evident that all sites, and even elements within the same site, would not necessarily change at the same pace — some people, some societies adjust more slowly than others. The causes for so-called cultural lags are obvious. Change disrupts time-honored values, innovation threatens people. We can imagine that the advent of the wheel caused personal anxiety both to potters and to users. Its innovation must have led many Bronze Age people to seek the security of old hand-built ceramic forms. Although wheelmade wares were well-established by the Anatolian EB IIIB period, many vessels still continued to be handmade... particularly those used for burials.

Material innovations like pottery shapes... or megaroid architecture plans... are more easily disseminated from site to site than non-material ideas. Material concepts may have been accepted even though half-understood. The diffusion of wheelmade platters was not dependent upon the societies that accepted them. Did they care or know about its original cultural context, or how it was used?

How were cultural changes brought about? Factors involved in this are usually considered to be invention or innovation and then diffusion. B. Trigger (Fagan 1970:297) attributes change to: innovation and migration or diffusion. G. Foster (in Matson ed. 1965:52-55) points out that changes in peasant societies are brought about by the specialist potter's response to market demand. For example, the wheelmade platter or the depas cup may be thought of as a ceramic invention that synthesizes the traditional manufacturing techniques of the Anatolian Bronze Age. The diffusion of these shapes represents the demand for their innovation. They are diffused culturally and distributed geographically. Thus each period's ceramic styles consist of a series of inventions and innovations which are more or less spread throughout its cultural area - but there may have been different distributions, both geographically and chronologically. For instance, whitepainted wares are not found in some areas, but the shapeforms on which white-painting occurs can be paralleled in those areas (Eslick 1978:1771ff.; French 1969:58). It is generally accepted that the process of diffusion moves spatially - outward step-by-step from the center of innovation. If Troy was indeed the production center of Bronze Age depas cups and wheelmade platters, then her culture sphere is easily recognized. However, it is difficult to

pinpoint ceramic production centers and their spheres of influence. For example, the Late Bronze gold and silver slip-wash vessels up to this point indicate merely a provincial and localized distribution pattern.

K. Nicklin (1971:14-34) points out that innovation in pottery production is dependent on many factors; among these is the need for the innovation. If the established repertoire satisfies the user, there is no market demand for anything new. It has also been found that potters generally do not have contacts outside their small areas. so there is little contact with others that might stimulate change. Stable economic and social conditions are another important factor, since any disruption in these spheres could affect the number of pottery-producing people those entering the field or those forced to abandon it. Also, specific elements in the repertoire might belong to a family or village and might appear or disappear according to the fate of its people. And with the advent of new wares, it can be reasonably assumed that there was an added stimulus of the exchange of ideas.

Because of slow communication and few transportation facilities it is probable that innovation diffused slowly throughout the world of prehistoric Western Anatolia. It would leap-frog over sites that were not in direct contact with the mainstream of ideas. Cultural diffusion may have been fostered by and followed crafts-people, such as traveling smiths. There was an enormous increase in mobility in the Bronze Ages and this may easily coincide with the growing use of metal (Muhly 1973:201-202). Although there is a lack of local ores in Western Anatolia (*ibid.*), each farming community may have had to voluntarily reduce its self-sufficiency in order to obtain ore and then use the technology (Renfrew 1972:308-313). The advent of metal in the Late Chalcolithic and its wider use in the Early Bronze Age had, of course, direct effects upon tool manufacture — but also it probably had an enormous impact on family relationships, trade, war, government, and perhaps even on religion and sex.

Migrations involving all or part of a population have also caused significant changes in the artifact record. Mellaart (Lloyd and Mellaart 1962:71) explains the change from the Hacılar I tradition to the Beycesultan L.Ch.1. to the arrival of a new folk. And Eslick (1978:225) remarks, « In these reconstructions the differences between the types of change are marked only by the distance from which he would have the immigrants come. » We have reached the point where it is necessary to pose the question whether or not the pottery repertoire changed because of the arrival of new people? There is extreme difficulty of proving or disproving a migration without having more facts at hand. It is certainly obvious by now that one of the chief elements in prehistoric archaeology

is uncertainty. But though our information is still imperfect, we do have enough data so that ideas can be structured in specific directions. If we accept that there was an incoming group, what area can be suggested for the origin of these migrations? The examination of artifact variables and settlement patterns should offer a variety of clues. In confronting these questions, we have examined diverse proposals drawn from evidence for the origins and spread of the cultures reflected at Aphrodisias throughout its periods. However, we cannot but feel a sense of dissatisfaction... for the pertinent variable of the origin of these settlements and their spatial and temporal homogeneity cannot be proved.

This discussion reflects some of the questions peculiar to this kind of research. On one end of the spectrum, I have ordered the available data. But this discussion falls at the other end of the spectrum with some of the theoretical problems that the data addresses. The main obstacles to working with this material lie at different points in the research process. The theoretical concerns outlined above should not take away from the validity of the archaeological record from which the following generalities can be drawn.

Several generalities about Aphrodisias can now be offered as a shorthand summary of the site and its culture.

Geography: Aphrodisias is part of a geographic horizon that extends from the eastern Aegean north to Troy down to Lycia — the eastern border is the western mountain range of the Konya Plain in the Central Anatolian plateau. As mentioned earlier, one of the important features of the area is the river system with its valleys.

Chronology: Prehistoric Aphrodisias represents communities spanning ca. five millennia. The site was founded in the Late Neolithic (?) ca. 5800 B.C., after which it was abandoned. After a 1000-year hiatus, it was resettled in the Late Chalcolithic, and with some gaps in the record it enjoyed a development that ran through the Anatolian Bronze and Iron Ages, from roughly 4360-546 B.C.

Thirteen periods have been identified: Late Neolithic (?); Late Chalcolithic 1-4; Bronze Age 1-4; Bronze Age 4-Middle Bronze; Late Bronze; and Iron Age which also includes a Lydian assemblage.

Stratigraphy: The excavations reveal habitation covering parts of the site which was composed of two hamlets located on the Pekmez and Acropolis mounds. The level of both of these mounds was raised on the ruins of earlier structures, and indicates the multiple reuse of the areas. The excavations showed that the earlier deposits lay below the water table on both mounds, and that the site's actual beginnings have eluded its excavators. The excavated

evidence in the Pekmez mound represents seven periods belonging to the Late Neolithic (?), Late Chalcolithic 1-4 and Bronze Ages 1 and 2. The early period settlements, Late Neolithic (?) and Late Chalcolithic, have been unearthed only in Pekmez trench 2, and the Late Neolithic (?) is represented only by an assemblage of pottery—neither archaeological features nor objects were found.

Seven periods, Bronze Ages 2, 3, 4, Bronze Age 4-Middle Bronze, Middle Bronze, Late Bronze and Iron Ages including the Lydian period are all represented in the Acropolis trenches. Thus the Acropolis excavation provides us with information for Aphrodisias Bronze Age 2 to Iron Ages. In addition, burial pithoi were found interred in Pekmez trenches 1 and 2, on the Acropolis and in the Kuşkalesi area. It is presumed all these pithoi belong to ca. the Anatolian EB III period.

Settlement pattern: As stated, Aphrodisias is typical of a Southwestern Anatolian village — located on a low rise overlooking a well-watered and ample feeding plain.

Architecture: The Late Chalcolithic period at Aphrodisias is represented by few structural remains — some free-standing walls composed of rectangular mudbricks on dry foundations. Not one complete architectural unit survives — no complete floors, and only a far-from-complete plan (Figures 37-51). Only in Pekmez trench 2 Level VIID of Late Chalcolithic 2 were found the earliest remains of houses in any completeness. The rooms vary from rectangular to trapezoidal shape, are moderate-sized, and constructed in an irregular plan. The mudbrick walls are laid (Figures 38-44) on dry foundations.

In the Bronze Age, mudbrick walls stand on stone foundations with timber reinforcement. Interior walls and floors are sometimes covered with white-wash or plaster. Pivot stones for door sockets are found as well as post holes which served either to support the roofing, or as tethering posts. Roofs were layers of mud, plaster, and reeds.

By the Middle Bronze Age, the megaroid architectural unit was in use at Aphrodisias. With the exception of the Acropolis megara, we are unable to classify according to type because the available data is so scanty (Figures 189, 192).

Features vary from period-to-period but throughout, there are hearths, storage pits, and pithoi to hold grains and other foods.

Culture: Its culture may be defined as an aggregate of individuals that are structured and organized into a group. The founding of its community and the bonds that held it together were probably for socio-economic reasons dominated by the activities of food production.

The beliefs were those that were traditionally accepted. Other ties that bound these people together were societal. Obviously, society and culture are closely related. Other than artifact assemblages, Aphrodisias must have had internal consistencies that held its members together. The way it was formed continued through the Late Chalcolithic, Bronze and Iron Ages, and that which distinguished it from or bound it to other sites was its culture. It had a population that shared in and manifested the unique and special tradition of prehistoric southwestern Anatolia, an area territorily and culturally tied together, whose people perhaps evolved from kinship relationships. Fragmentary house plans and the positioning of artifacts suggests the ancient family structure was stable. High rates of remodelling the dwellings show that domestic areas were intensively used for diverse activities.

The site must have served needs that were both primary (economic, biologic) and secondary (cultural, political, and societal factors such as safety, aesthetics, ideals, and so forth). We theorize that the secondary needs of the inhabitants were satisfied in each period at the level of which they were capable — artifact production and architectural styles as they perceived them.

From the evidence it is not clear if political ties existed between the settlements of Beycesultan and Aphrodisias, but it is not unreasonable to suggest a loosely knit alliance might have existed at some point in the prehistoric period.

The role of Aphrodisias was more than just a simple aggregate of individuals. But answers to population size and density in prehistoric times are extremely elusive. What was the average household size? What can we tell about the residence patterns and compositions of families? Estimating from archaeological remains is extremely difficult. With the available data, only a hypothetical statement can be offered... the population of Aphrodisias during any of the prehistoric periods was probably small, numbering a few hundred persons.

Subsistence and Economy: Settlements are composed of small, relatively self-sufficient village agricultural communities. A picture emerges of a community of farmers, herders, weavers, spinners, stone workers, and potters. They appear to enjoy stability throughout the Late Chalcolithic and Early Bronze Age I. In the Anatolian Early Bronze Age II, there is an influx of new ideas — these become modified as they continue into the Anatolian Bronze Age IIIa and IIIb and Middle Bronze Ages. The Late Bronze and Iron Ages also reflect changes in settlement and artifacts, but the origins are difficult to see clearly.

Little is known about the flora in the earliest periods, but by the Bronze Age 4, there is abundant evidence for Aphrodisias being a fully organized agricultural settlement. We know that barley — a mixture of 2-rowed and 6-rowed hulled barley — was stored in pithoi along with bitter vetch, proso or hog millet and oats. In regard to fauna, of particular interest is the predominance of deer in the Late Chalcolithic, and their subsequent decrease in the Early Bronze Age when cattle become a major meat source. And although the kill patterns of pig and cattle remained unchanged, the herding of mature animals was on the increase.

Exchange systems: Aphrodisias is a subculture within the wider southwestern cultural sphere... a sphere that in the earliest periods was limited. Exchange of goods probably took place along the river valleys, from village-to-village... to the Aegean. It is assumed there was indirect or even direct contact between most of the sites in the cultural horizon. Possibly ideas traveled faster than material objects.

Exchange system contacts were probably made by nomads, traveling smiths, and by trade-in-kind for desired items. Tentatively, it may be stated that Aphrodisias does not appear to be as affluent as other contemporary sites in any of its prehistoric periods since fewer items of metal are found in comparison to other sites.

Ceramics: Occasionally different sites reflect the same shape-form types and decorative motifs; each site has an indigeneous ceramic development sharing in a) manufacture; b) ware-fabric; and one-or-both elements of a common tradition of c) similar shapes, and similar decoration. Small ceramic objects include loom weights, spindle whorls (Figure 87), and figurines.

The area can be thought of as one homogeneous ceramic horizon, characterized by a slow rate of change. The broad lines of ceramic chronology are fairly certain and serve as reflections of better known cultures throughout each period — Late Neolithic (?)-Hacılar; Late Chalcolithic-Beycesultan; Early and Middle Bronze Age-Beycesultan and Troy; Late Bronze and Iron Ages Beycesultan; and Late Iron Age-Beycesultan and Lydian Sardis.

Most importantly, it is the prehistoric pottery that allows us to construct a patterned sequence for the periods. The distribution of shape-forms and decorative elements are diffused to different areas at varying times. Ceramic changes were neither rapid nor uniform. At best, they were imperceptible, and usually took place within the site itself or between sites, as said, at different times.

Other artifacts: Besides ceramics, there are many small finds including tools of both ground and chipped stone; metal objects; bone and shell artifacts. The lithic industry consists of 15 types of ground stone tools including figurines, axes, adzes, whetstones, and out-sized tools: querns, pivot stones, grindstones. Of particular interest are two white marble figurines called « Kilia » (Figures 197-198, 207-208, 379-380, 385) — probably offerings to the supernatural for the fertility of ancient man's fields, flocks, and household. These Kilia figurines are typical of those recovered from other sites.

The chipped stone industry is represented by flakes and blades in obsidian, chert and quartz. 7 % of these tools are composed of obsidian — roughly two-thirds is Aegean in origin and one-third is Central Anatolian.

Household goods and tools do not differ greatly among contemporary sites such as Beycesultan, Kum Tepe, Kusura or Troy. Thus, we presume contacts and culture was shared, although each also enjoyed an indigenous development.

* *

These generalities try to define the prehistoric settlement at Aphrodisias, to give it an intrinsic coherence that helps it emerge as an important site in the cultural complex of early Anatolia. Its indigenous fabric and the features it shares — not only with the southwest but with northwestern Anatolia and the Aegean — proves that its world had a fundamental unity that we have just begun to document and understand.

